United States District Court,
D. Delaware.

TAKATA CORPORATION,
Plaintiff.
v.
ALLIEDSIGNAL INC. and BREED TECHNOLOGIES, INC,
Defendants.

No. CIV.A.98-94 MMS

Aug. 19, 1999.

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MEMORANDUM OPINION

SCHWARTZ**, Senior District J.**

On March 3, 1998, Takata Corporation ("Takata") filed a complaint against AlliedSignal Inc ("ASI") and Breed Technologies, Inc. ("Breed" and collectively, "Defendants"), alleging infringement of its United States Patents Nos. 4,564,154 (the " '154 patent") and 4,811,912 (the " '912 patent"). Docket Item ("D.I.") 1. Takata has subsequently amended its Complaint twice. In addition to the two infringement allegations of the original complaint, the Second Amended Complaint alleges infringement of five additional patents, tortious interference with business relations and prospective business advantage, and misappropriation of trade secrets. D.I. 52. In response, in addition to denying Takata's allegations, Defendants raise sixteen affirmative defenses, including several grounds for invalidity, and brought counterclaims for declaratory judgment that the '154 and '912 patents are invalid and unenforceable because of Takata's inequitable conduct. Breed also has counterclaimed, alleging infringement of one of its patents. The parties have dismissed with prejudice the claims and counterclaims involving patents other than the '154 patent and the '912 patent. D.I. 96. Thus, only the '154 patent and the '912 patent, along with state-law tort claims, remain.

Pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996), the parties briefed and argued the proper construction to be given certain disputed claim language of the '154 patent and the '912 patent. FN1

The parties narrowed their claim construction dispute to one element of Claim 1 of the '154 patent and two elements of Claim 1 of the '912 patent. FN2 Stipulation, D.I. 98. The Court's construction of the disputed claim language follows.

FN1. "[B]y resolving the meaning to be given to disputed claim terms, and by engaging the parties in such a process, trial courts are often able to narrow disputes and provide more efficient trials." *Smiths Indus. Medical Systems, Inc. v. Vital Signs, Inc.*,___ F.3d ___, 1999 WL498219, at (Fed.Cir. July 14, 1999); *accord* EMI Group North American v. Intel Corp., 157 F .3d 887, 892 (Fed.Cir.1998).

FN2. Since a device that does not infringe an independent claim cannot infringe a dependent claim, *see* StairMaster Sports/Medical Products, Inc. v. Groupe Procycle, Inc., 97-396, 1998 WL 290296 (D.Del. May 20, 1998) (citing Eltech Sys. Corp. v. PPG Indus., Inc., 710 F.Supp. 622, 634 n. 10 (W.D.La.1988), *aff'd* 903 F .2d 805 (Fed.Cir.1990)), the Court addresses only Claim 1 of each patent-the independent claims.

I. FACTUAL BACKGROUND

The patents at issue in this case relate to safety belt retractors-the devices which allow the winding and unwinding of the webbing which is generally thought of as the "seat belt." To be effective safety devices, safety belts must not unwind in the event of an accident. Two different means can prevent this unwinding when passenger restraint is appropriate-automatic locking retractors ("ALR"s) and emergency locking retractors ("ELR"s). ALRs are designed to prevent any motion in the unwinding direction. Typically used with child seats or other objects which must be held stable at all times, ALRs lock when a certain length of webbing has been unwound in a continuous motion and will not allow further unwinding until most of the webbing has been rewound back onto the retractor. ELRs are designed to allow motion of the webbing unless signaled by an accelerated unwinding or rapid automobile acceleration or deceleration as indicative of accident conditions. Designed so that adults may freely move in their seats, for example to adjust the radio, look in the glove compartment or simply shift positions, an ELR will only prevent unwinding of the webbing when signaled to do so.

In addition, some safety belts have combination ALR/ELR mechanisms whereby the retractor can switch from ELR to ALR automatically to adjust to either adult use or car seat use. The '154 patent relates to an ELR. The '912 patent concerns an ALR/ELR. Although the Court's objective is to construe the claims of the patent, the following description of Takata's patents are furnished to provide context for the ensuing claim construction. FN3

FN3. The Court describes only Takata's claimed invention because it is improper to evaluate the accused device during claim construction. *See* Young Dental Mfg. Co., Inc. v. Q3 Special Products, Inc., 112 F.3d 1137, 1141 (Fed.Cir.1997) (citations omitted); Jurgens v. McKasy, 927 F.2d 1552, 1560 (Fed.Cir.1991) ("[C]laim is construed without regard to the accused product.") That being said, the particular accused product, if known to the court, is kept in mind, for it is efficient to focus on the construction of only the disputed elements of the claims. *See* Scripps Clinic & Research Foundation v. Genentech, Inc., 927 F.2d 1565, 1580 (Fed.Cir.1997).

In general terms, FN4 both inventions describe a seat-belt retractor which begins with a metal frame upon

which a takeup shaft is mounted. This takeup shaft is normally biased to wind the belt onto the reel such that in the absence of some condition to the contrary (such as pulling out the webbing to put on the safety belt), it remains wound.

FN4. The Court relies on the specification and claims of the '154 and '912 patents. While both parties explain the technology with reference to the preferred embodiments described in the patents, the Court remains mindful that when construing the claim, preferred embodiments do not limit the claims. Karlin Technology Inc. v. Surgical Dynamics, 177 F.3d 968, 973 (Fed.Cir.1999); Laitrim Corp. v. NEC Corp., 163 F.3d 1342, 1348 (Fed.Cir.1998); Enercon v. International Trade Commission, 151 F.3d 1376, 1384 (Fed.Cir.1998); CVI/Beta, 112 F.3d 1146, 1158, (Fed.Cir.1997), *cert. denied sub nom.* Marchon Eyewear v. Tura LP, 118 S.Ct. 1039 (1998).

A. The '154 Patent

Attached to the takeup shaft and mounted on one lateral face of the frame is a ratchet wheel. This ratchet wheel rotates with the takeup shaft in the same direction as the belt winds and unwinds. A pawl is pivotably mounted on the same face of the frame as the ratchet wheel and has a cam follower. The pawl is engageable with teeth of the ratchet wheel. FN5

FN5. The meaning of the term "engage" is disputed by the parties.

A lock ring with a circular ring of internal gear teeth is affixed over the ratchet wheel and anchored to the same pivot as the pawl. One arm of the lock ring has a cam slot in which the cam follower of the pawl rests and in which it travels when the lock ring rotates.

A retainer is fixed to the takeup shaft. A carrier which has an integral tooth which is engageable with the internal teeth of the lock ring is loosely mounted by guide pins on the retainer, and rests inside the circular ring of internal gear teeth on the lock ring. Because it is loosely mounted, the carrier may slide back and forth on the retainer in a direction substantially along a single diameter intersected by the shaft of the retractor, where the shaft is used to define the frame of reference of the diameter ("direction substantially diametrically") so that the tooth may engage the inner teeth of the lock ring. A coil spring biases the tooth to a disengaged position, holding the tooth of engagement from the lock ring.

The carrier has a pin or projection which is received in a disk-shaped portion of the inertia member resting atop the lock ring-takeup shaft assemblage. A cap is attached to the outermost end of the takeup shaft through a hole in the inertia member.

Normally, the inertia member and takeup shaft rotate at the same rate. When there is a difference in speeds between the inertia member and the takeup shaft, ratchet wheel and retainer, *i.e.,* where the rotation of the takeup shaft accelerates relative to the inertia member, FN6 the inertia member places a force on the pin which in turn places a force on the carrier. The force on the carrier moves it in a direction from the disengaged position to a second position so that the carrier tooth engages with an internal tooth of the lock ring. Because the carrier is coupled to the retainer, which rotates with the takeup shaft, the next increment of rotation in the belt-unwinding direction (counter-clockwise) rotates the lock ring, in the belt-unwinding direction as well. When the lock ring rotates, the pawl's cam follower is forced to move along the cam

surface of the cam slot, causing the pawl to pivot and engage the teeth of the ratchet wheel. When the pawl engages the ratchet wheel, the ratchet wheel, and thus the takeup shaft, cannot move in the belt-unwinding direction, preventing the webbing from unwinding and restraining the passenger.

FN6. Such acceleration could occur due to a rapid acceleration of the takeup shaft because of rapid belt unwinding.

The ratchet wheel and the carrier both rebound in the belt-winding (clockwise) direction from the impact of the pawl engaging the ratchet wheel. When the carrier rebounds in the clockwise direction, its tooth separates from the inner teeth of the lock ring, and the spring biases the carrier to its original position out of engagement with the lock ring. Thus the clutch mechanism disengages and free belt unwinding may occur.

In some circumstances, when a rapid acceleration in belt- *winding* occurs, as when the webbing is released and retracts rapidly, so that the takeup shaft accelerates relative to the inertia member, the inventor explains a condition called "end lock" can occur if the inertia member over-runs after the takeup shaft stops and then rotates in the reverse direction due to rebound. When this occurs, the clutch mechanism is engaged and the ratchet wheel is locked. If the belt has been completely wound, the takeup shaft and the carrier cannot rebound to allow the clutch mechanism to disengage as already described thus preventing movement in the belt-unwinding direction. This prevents a passenger from "pulling out" the webbing in order to put on the safety belt.

However, because the cam slot has an "extension portion" FN7-a portion of the cam slot over which the cam follower has not travelled when the pawl engages the ratchet wheel-the lock ring can continue to rotate in the belt-unwinding direction until the cam follower reaches the end of the extension portion thus allowing the carrier tooth to separate from the internal teeth of the lock ring and to disengage as described above. When the lock ring is disengaged, it rotates in the clockwise direction, allowing the cam follower to move and the pawl to disengage from the ratchet wheel. When the pawl disengages, the retractor is unlocked and unwinding can occur. In this manner, the invention thus purports to prevent end-lock.

FN7. As with construction of the term "engage", the parties agree sufficiently on the meaning of the term "extension portion", although disputed in the details, for purposes of describing the mechanics of the seat-belt retractor described in the '154 patent.

B. The '912 Patent

The '912 patent recites an ALR/ELR safety belt retractor. Because the ELR portion of the preferred embodiment of the patent is similar to that recited in the '154 patent, '912 patent, col. 3, ll.48-57, the Court will turn to the ALR portion of the preferred embodiment of the '912 patent.

Mounted to the lock ring of the ELR of the retractor is an actuator pawl. When the actuator pawl is pivoted clockwise, by a means described below, the pawl engages a tooth of the ratchet wheel. Normally, the actuator pawl is held out of engagement with the ratchet wheel.

Over the ELR mechanism is mounted a cover. A "partition wall" includes a circular flange with internal teeth which acts as an internal gear 23 FN8 of a planetary gear train. A retainer attached to the takeup shaft

carries a sun gear 24 so that the sun gear 24 rotates with the takeup shaft. A planetary gear 25 meshes with the sun gear 24 and internal gear 23 so that it both rotates on its own axis and orbits the sun gear 24 as the sun gear rotates with the takeup shaft. The planetary gear has a projection 25A which is offset from the gear teeth. The planetary gear train acts upon two pins 27A and 27B which are received in guideways. At two specific predetermined rotational and orbital positions of the planet gear, the projection 25A engages one or the other of the pins 27A or 27B.

FN8. The numbering of some components described in the '912 patent specification is included for identification purposes.

An activating lever is mounted so that it can pivot in and out of engagement with the actuator pawl. Coupled to the activating lever is an over-center spring.FN9 The mechanics of the planetary gear train pushing on the pins and the over-center spring works to pivot and hold the activating lever in one of two positions FN10: in engagement with the actuator pawl and out of engagement with the actuator pawl.

FN9. The construction of over-center spring is disputed.

FN10. The precise role of the different components in the pivoting and holding of the activating lever is the subject of dispute between the parties and will be resolved through claim construction. For purposes of its description, the Court makes no specific attribution of function to the individual components.

When the belt is unwound a certain number of rotations such that the projection 25A is in the predetermined orbital and rotational position (in the preferred embodiment, approximately 90% of fully unwound), the projection engages one of the pins 27A such that the pin engages a surface on the activating lever and the pin 27A and the over-center spring function to pivot and hold the activating lever in a position of engagement with the actuator pawl. When the activating lever holds the actuator pawl, the actuator pawl engages the ratchet wheel. The lock ring, to which the actuator pawl is attached, rotates with the ratchet wheel. Rotation of the lock ring moves the pawl FN11, by way of the cam follower and cam slot mechanism described in the '154 patent, into engagement with the ratchet wheel, preventing further unwinding and the retractor is in automatic locking mode.

FN11. The pawl, as distinguished from the actuator pawl, in the '912 patent corresponds to the pawl in the '154 patent.

As the belt is rewound, the retractor remains in automatic locking mode for some time. The activating lever holds the actuator pawl in engagement with the ratchet wheel until the rotation of the planetary gear train in the belt-winding direction places the planet gear 25 in such an orbital and rotational position that the projection 25A pushes on the other pin 27B, so that the mechanics of the pin 27B and the over-center spring work to pivot and hold the activating lever out of engagement with the actuator pawl. When the activating lever is out of engagement with the actuator pawl, the actuator pawl disengages from the ratchet wheel and the seat-belt retractor returns to ELR mode. Thus, when a certain amount of the belt is unwound the webbing may rewind but may not further unwind until a certain amount of the webbing has been rewound.

It is emphasized that the Court provides the foregoing descriptions treating a preferred embodiment of each patent only to place the competing claim constructions within a larger framework with no legal significance to be attached to the Court's choice of language. With the '154 and '912 patents placed in context, the Court now turns to principles of claim construction.

II. APPLICABLE LAW: CLAIM CONSTRUCTION

Patent infringement actions are composed of two phases: "First, the court determines the scope and meaning of the patent claims asserted, and then the properly construed claims are compared to the allegedly infringing device." Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1454 (Fed.Cir.1998) (en banc) (citing Markman, 517 U.S. at 371-73 and Read Corp. v. Portec, Inc., 970 F.2d 816, 821 (Fed.Cir.1992)). The first phase is known as claim construction and is a matter of law to be determined exclusively by the Court during the *Markman* phase of the patent infringement suit. *See* Cybor, 138 F.3d at 1454 ("[T]he law is clear that the judge, and not the jury, is to construe the claims ...."). In this opinion, the Court concerns itself only with the claim construction of the disputed claim language.

The proper construction of claims is based primarily on the intrinsic evidence on the record, the claim language, the specification, and the prosecution history. *See* CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1152 (Fed.Cir.1997), *cert. denied sub nom.* Marchon Eyewear v. Tura LP, 118 S.Ct. 1039 (1998).FN12 Claims should be construed from the point of view of the person of ordinary skill in the field of the invention at the time of the invention. *See* Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed.Cir.1998).

FN12. Patent claims "particularly point out and distinctly claim the subject matter which the applicant regards as his invention." Markman, 116 S.Ct. at 1387-88 (quoting 35 U.S.C. s. 112). The patent specification "describes the invention 'in such full, clear, concise, and exact terms as to enable any person skilled in the art ... to make and use the same." ' Id. at 1388. The prosecution history "contains the record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims." Vitronics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996).

The claim language itself is first and foremost in importance when construing the meaning and scope of the patent. Smiths Indus. Medical Systems, Inc. v. Vital Signs, Inc., 183 F.3d 1347, 1999 WL 498219, at (Fed.Cir. July 14, 1999); Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999). Thus, if the claim is unambiguous and clear on its face, the Court need not consider the other intrinsic evidence. Smiths Indus., 1999 WL 498219, at *9 (citing Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1248-49 (Fed.Cir.1998)).

The Court of Appeals for the Federal Circuit has recently had occasion to delineate the general rules for interpreting the language of a claim:

The general rule is, of course, that terms in the claim are to be given their ordinary and accustomed meaning. General descriptive terms will ordinarily be given their full meaning; modifiers will not be added to broad terms standing alone. In short, a court must presume that the terms in the claim mean what they say, and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms.

Johnson Worldwide, 175 F.3d at 989. However, "[c]laims are not interpreted in a vacuum, but are part of and are read in light of the specification." Slimfold Mfg. Co. v. Kinkead Indus., Inc., 810 F.2d 1113, 1116 (Fed.Cir.1987). Thus, the Court may look beyond the language of the claim to the other intrinsic evidence, and perhaps to the extrinsic evidence, to confirm the ordinary meaning when it is unclear or to determine whether the patent, by its own terms, assigns special meaning to a term. Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1248 (Fed.Cir.1998).

Where the applicability of a common meaning is unclear or where more than one common meaning could be assigned to a claim term, reference to the specification and prosecution history is appropriate to confirm the ordinary and accustomed meaning. Id. at 1248; Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 871 (Fed.Cir.1998) (turning to specification where, at time of invention, the ordinary meaning of term was disputed and two possible meanings were in existence). Thus, "the claims are construed in accordance with the rest of the specification of which they are a part, and not contrary to it." C.R. Bard, Inc. v. M3 Systems, 157 F.3d 1340, 1360 (Fed.Cir.1998); *accord* Renishaw, 158 F.3d at 1250 ("[A] common meaning, such as one expressed in a relevant dictionary, that flies in the face of the patent disclosure is undeserving of fealty.") Indeed, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Renishaw, 158 F.3d at 1250.

In addition, a court engaging in claim construction may enter "a definition of a claim term other than its ordinary and accustomed meaning" in two situations. *Johnson Worldwide,* 157 F.3d at 990. "The first arises if the patentee has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term." *Id*. (citations omitted); *accord* Renishaw, 158 F.3d at 1249. "The second is where the claim term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used." Johnson Worldwide, 175 F.3d at 990 (citations omitted). "In these two circumstances, a term or terms used in the claim invites-or indeed, requires- reference to intrinsic [evidence beyond the claim language itself] or in some cases, extrinsic evidence to determine the scope of the claim language." *Id*. (citation omitted).

Where, in the circumstances outlined above, a court must go beyond the claim language to confirm the ordinary meaning of a claim term or determine its specialized meaning, it must look first to the public record of the patent-the specification and the prosecution history. The specification has been described as "often the single best guide to the meaning of a disputed term ...." *See* Vitronics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). When the specification explains and defines a term used in the claims, without ambiguity or incompleteness, there is no need to search further for the meaning of the term. *See* Multiform Desiccants, 133 F.3d at 1478. At the same time, however, a court "may not read a limitation into a claim from the written description." Renishaw, 158 F.3d at 1248; *accord* Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed.Cir.1998).

In addition, the prosecution history informs the understanding of terms found in both the specification and the claim. *See* Multiform Desiccants, 133 F.3d at 1478. ("The evolution of restrictions in the claims, in the course of examination in the PTO, reveals how those closest to the patenting process-the inventor and the patent examiner-viewed the subject matter."). Indeed, the prosecution history may limit the interpretation of the disputed language to meanings not disclaimed by the inventor during the prosecution of the patents. CVI/Beta Ventures, 112 F.3d at 1155 (quoting *Southwall,* 54 F.3d at 1579).

After examining the intrinsic evidence of the patent, if the meaning of the claim language is still ambiguous, the Court may consider extrinsic evidence, "if necessary to aid the court's understanding of the patent." *See* Wright Medical Technology, Inc. v. Osteonics Corp., 122 F.3d 1440, 1443 (Fed.Cir.1997). However, "if the meaning of a disputed claim term is clear from the intrinsic evidence-the written record-that meaning, and no other, must prevail; it cannot be altered or superseded by witness testimony or other external sources simply because one of the parties wishes it were otherwise." Key Pharmaceuticals v. Hercon Labs. Corp., 161 F.3d 709, 716 (Fed.Cir.1998). Thus, Court may not "rely on extrinsic evidence in claim construction to contradict the meaning of claims discernible from thoughtful examination of the claims, the written description, and the prosecution history-the intrinsic evidence." Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1999 WL 415392, at (Fed. Cir. June 23, 1999); Vitronics, 90 F.3d at 1583.

Two forms of extrinsic evidence, technical treatises and dictionaries, have a special role in claim interpretation. A court involved in claim construction may consult a dictionary or technical treatise to understand the ordinary meaning of the claim term. Indeed, the Federal Circuit Court of Appeals has regularly approved of and engaged in this process. *See* Karlin Technology Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971 (Fed.Cir.1999) (using dictionary definition and treatises to determine ordinary meaning of a claim term); Phillips Petroleum, 157 F.3d at 871 (looking to extrinsic evidence to determine that ordinary meaning of claim term was "disputed by those skilled in the art at the time the application was filed" and turning to intrinsic evidence to resolve disputed meaning); Cybor, 138 F.3d at 1458 (citing a dictionary for the "plain meaning" of a claim term and confirming the meaning by reference to the intrinsic evidence); *id.* (citing Vitronics, 90 F.3d at 1584 n. 6, for the proposition that "although technically extrinsic evidence, the court is free to consult dictionaries at any time to help determine the meaning of claim terms"); Vitronics, 90 F.3d at 1584 n. 6 ("Judges are free to consult [technical treatises and dictionaries] at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents."). However, the Court may need to turn to the intrinsic evidence to confirm this ordinary meaning. Anderson v. Int'l Engineering and Mfg., Inc., 160 F.3d 1345, 1348-49 (3d Cir.1998) ("dictionary definition of ordinary words are rarely dispositive of their meaning in a technological context", making it necessary to look to "the context in which it was used by the inventor"); Phillips Petroleum, 157 F.3d at 871 (looking to intrinsic evidence to determine which ordinary meaning the inventor intended); Cybor, 138 F.3d at 1458 (looking at the specification and prosecution history to confirm they are consistent with a dictionary definition).

The United States Court of Appeals for the Federal Circuit has recently elaborated on a similar role for all extrinsic evidence:

[I]t is entirely appropriate, perhaps even preferable, for a court to consult trustworthy extrinsic evidence to ensure that the claim construction it is tending to from the patent file is not inconsistent with clearly expressed, plainly apposite, and widely held understandings in the pertinent technical field.... Although the patent file may often be sufficient to permit the judge to interpret the technical aspects of the patent properly, consultation of extrinsic evidence is particularly appropriate to ensure that his or her understanding of the technical aspects of the patent is not entirely at variance with the understanding of one skilled in the art.

Pitney Bowes, 1999 WL 415392, at *10. Thus, in some cases, reference to extrinsic evidence, such as expert testimony, although not necessary for claim construction, may have a useful confirmatory purpose.FN13

FN13. In this case, the expert testimony presented by the parties does not serve such a purpose. Takata presented the Court with the sworn declaration of Dr. Geoffrey Germane, along with his live testimony. Defendants presented the sworn declaration of Harold Josephs. Neither expert is qualified as an expert of the understanding of one skilled in the art at the time of invention. *See* Hearing Transcript, vol. 2, D.I. 100, at 265, l. 17 to 267, l. 1 (Court held Germane not qualified to testify as one skilled in the art); D.I. 90, Exh. D, Tab A (indicating no expertise in the art of seat-belt retractor design). Therefore, their testimony does not help the Court determine whether its interpretation "is not entirely at variance with the understanding of one skilled in the art." Pitney Bowes, 1999 WL 415392, at *9. Further, with respect to Josephs, the Court has no way to determine if his testimony is trustworthy as required by *Pitney Bowes*. *Id*.

Some claim terms fall under the means-plus-function rubric of 35 U.S.C. s. 112, para. 6.FN14 Under this section, "an applicant can describe an element of his invention by the result accomplished or the function served, rather than describing the item or element to be used ...." Warner-Jenkinson v. Hilton Davis Chemical Co., 117 S.Ct. 1040, 1048 (1997). The use of the word "means" triggers a presumption that the inventor used the term purposely to invoke the statutory mandates for means-plus-function clauses. York v. Central Tractor and Farm & Family Ctr., 99 F.3d 1568, 1574 (Fed.Cir.1996). However, this presumption is not conclusive. *See* Sage Products, Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427 (Fed.Cir.1997). Where a claim uses the word "means," but specifies no corresponding function for the "means," s. 112, para. 6 is not implicated. *See id*. (quoting York, 99 F.3d at 1574). Similarly, if a claim has sufficient structure within the claim itself which can perform the recited function, the language of the claim is not in a means-plus-function format. *See* Sage Products, 126 F.3d at 1427-28 (quoting Cole v. Kimberly-Clark Corp., 102 F .3d 524, 531 (Fed.Cir.1996)).

FN14. 35 U.S.C. s. 112 para. 6 reads:
An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claims shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

If a claim term is written in means-plus-function format, the construction of the term is a two-step process. "[A] court must first look to the patent specification to determine the 'corresponding structure' that performs the claimed function." Smiths Indus., 1999 WL 498219, at *9. That "corresponding structure" must be clearly linked to the function recited in the claim by the intrinsic evidence. Unidynamic Corp. v. Automatic Prods., Int'l, Ltd., 157 F.3d 1311, 1319 (Fed.Cir.1998). Then, "the claim is ... construed to cover that corresponding structure as well as 'equivalents thereof." ' Smiths Indus., 1999 WL 498219, at *9. Thus, "the literal scope of a means-plus-function claim includes the identified corresponding structure ... as well as 'equivalents thereof." ' *Id*. at *10.

With these claim construction principles at hand, the Court now turns to the disputed claim language in the '154 and '912 patents.FN15

FN15. Defendants make constant reference to their argument that the alleged use of the wrong inventor in the patent application renders the patents-in-suit invalid, and may allude to other grounds for a finding of non-infringement or invalidity. The Federal Circuit Court of Appeals has consistently rejected the

consideration of such argument at the claim construction stage and continues to draw a line between claim construction issues and issues of infringement and invalidity. *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 986 (Fed.Cir.1995), *aff'd,* 517 U.S. 370 (1996); *see also* Intervet Am., Inc. v. Kee-Vet Labs, Inc., 887 F.2d 1050, 1053 (Fed.Cir.1989) ("Ambiguity, undue breadth, vagueness, and triviality are matters which go to claim validity for failure to comply with 35 U.S.C. s. 112, para. 2, not to interpretation or construction."). The Court will not consider the merits of any such arguments while engaging in claim construction.

III. CLAIM CONSTRUCTION OF THE '154 PATENT

Claim 1 of the '154 patent recites a seat belt retractor being

further characterized in that the cam slot includes an *extension portion* for allowing the lock ring to rotate in the belt-unwinding direction without moving the cam follower in a direction to disengage the pawl from the ratchet wheel when the pawl is in the operative position.

'154 patent, col. 6, ll. 41-46 (emphasis added). The parties request the Court construe "extension portion." FN16 As already rehearsed, where "a patent applicant has elected to be a lexicographer by providing an explicit definition in the specification for a claim term[,] ... the definition selected by the patent applicant controls." Reinshaw, 158 F.3d at 1249. Here, as both parties agree, the inventor did provide a definition of "extension portion." Thus, "extension portion" is construed according to the definition provided by the inventor in the specification: the portion of the cam slot "having a length 'e' such that the cam follower is positioned intermediate between the ends of the cam slot when the pawl engages the ratchet wheel. " '154 patent, col. 5, ll. 8-12. The parties have stipulated that "length 'e" ' should be defined as "a portion of the cam slot which has not yet been traversed by the cam follower when the pawl engages the ratchet wheel." D.I. 98, para. 2(b). Thus, the parties have stipulated that length 'e' is the length of the extension portion.

FN16. The parties initially disputed the definition of the term "direction substantially diametrically" in Claim 1. '154 patent, col. 6, l. 27. However, through the briefing process and negotiations prior to the *Markman* hearing, the parties stipulated to the following construction of "direction substantially diametrically": " a direction substantially along a single diameter intersected by the shaft of the retractor, where the shaft is used to define the frame of reference to the diameter." D.I. 91, para. 1.

However, the parties dispute the meanings of two of the terms the inventor used to define "extension portion": "intermediate" and "engages." Takata and the Defendants point to constructions of each term, the use of which could impact the meaning of "extension portion." The Court will consider each in turn.

The parties' dispute over the term "intermediate" did not arise until part way through the *Markman* hearing. Therefore, the Court was without the benefit of briefing but did hear the parties' respective oral presentations. The parties submitted their arguments to the Court orally during the hearing.

The parties' difference centers around whether "intermediate" means "between two points," as urged by Takata, or whether it should be narrowed to "at the middle," or "in the middle," as urged by the Defendants. As already rehearsed, the Court's first step in defining a term is to determine its ordinary meaning. Consultation of a dictionary is appropriate to help in this endeavor. *E.g.,* Cybor, 138 F.3d at 1458.

Interestingly, each dictionary consulted uses a broad definition such as the one used by Takata, although some also include the concept of "middle" urged by Defendants. For example, *Webster's Third New International Dictionary* (1971) includes the following definition: "lying or being in the middle place or degree: between extremes or limits: coming or done in between." FN17 *Id.,* at 1180; *see also American Heritage Dictionary of the English Language* 942 (3d ed.1992) ("lying or occurring between two extremes or in a middle position"); 5 *Oxford English Dictionary* 405 (1933) ("coming or occurring between two things, places, etc.... situated in the middle place or between two things or places"); *Random House Dictionary of the English Language* 995 (2d ed.1987) ("being situated or acting between two points, stages, things, persons, etc."). Thus, the ordinary meaning of "intermediate" appears to be "lying or being between two points or limits," and also includes, but is not limited to, "in the middle." Indeed, at oral argument, Takata agreed that "at the middle" was included in the definition "between two extremes." Hearing Transcript, vol. 2, D.I. 100, at 302, ll. 3-10.

FN17. Notably, Defendants' interchangeably use the word "at" as well as "in." The former is arguably even more narrow than the definitions posited by the dictionaries. While "in the middle" does not necessarily convey a particular point, but could convey a general middle area, "at the middle" suggests one particular point.

The definitions of the word "middle" confirm that while the plain and ordinary meaning of the word "intermediate" might include "at the mid-point," it is not limited to the mid-point. The same dictionaries which use "middle" to define intermediate define "middle" as "intermediate," as a point between two ends and as a mid-point. For example, *Webster's Third New International Dictionary,* includes among its definitions of middle "a portion or part separated by equal or approximately equal substantial distances for the ends or the opposite sides ...," "being at neither extreme: INTERMEDIATE," and "mid-point." *Id.* at 1429 (capitalization in original). Other dictionaries yield similar multiple definitions: the *American Heritage Dictionary* (3d ed.1992) lists "Equally distant from extremes or limits, central"; and "Being at neither one extreme nor the other; intermediate" as its first two definitions, *id.* at 1141; two of the definitions in the *Oxford English Dictionary* (1933) are "An intervening point or part in space, time or arrangement; something intermediate," and "Something placed in a central position," 6 *Oxford English Dictionary,* at 420; and the *Random House Dictionary of the English Language* (2d ed.1987) similarly offers the definitions, "equally distant from the extremes or outer limits; central," and "intermediate or intervening," *id.* at 1216. The multiple definitions of "middle" indicate two things about the ordinary meaning of "intermediate." First, in each of the definitions in which "intermediate" is used to define or as a synonym for "middle," "intermediate" does not connote a precise mid-point, but rather indicates a location between two ends or extremes or an intervening position. This suggests the ordinary meaning of intermediate, as indicated by the multiple dictionaries cited, is broader than merely the "mid-point." Secondly, even if "intermediate" were limited to meaning "in the middle," that meaning would not limit the ordinary meaning of "intermediate" to the mid-point.FN18 Thus the ordinary meaning of "intermediate" is "between two points."

FN18. Indeed, the very ambiguity of the meaning of "in the middle" undermines Defendants' contention that using "between two points or limits" would render the inventor's language "intermediate between the ends of the cam slot" redundant. Because middle is also defined with reference to two extremes as well, using "at the middle" would, by Defendants' logic, be similarly redundant.

In any event, the language is not redundant. While "intermediate" means between two points, that definition does not define those points. Rather, it requires further explanation or definition-between the ends of the

cam slot. Thus, the inventor's language is not redundant but necessary to fully explain his meaning. The specification and prosecution history confirm the inventor gave no indication he intended a narrower definition than the ordinary meaning of intermediate. Claim 1 indicates the function of the extension portion is "allowing the lock ring to rotate in the belt-unwinding direction without moving the cam follower in a direction to disengage the pawl from the ratchet wheel when the pawl is in the operative position." '154 patent, col. 6, ll. 42-46. Nothing in the specification or in the prosecution history suggests that to fulfill this function, the extension portion must be "a length 'e' such that the cam follower is positioned ['at the middle'] between the ends of the cam slot when the pawl engages the rachet wheel".

The inventor defined "extension portion" with reference to Figure 5 of the specification. '154 patent, col. 5, ll. 8-12 ("As shown in FIG. 5, the cam slot has an extension portion having a length 'e' such that the cam follower is positioned intermediate between the ends of the cam slot when the pawl engages the ratchet wheel." (reference numbers excluded)). Figure 5 is a "fragmentary plan view[ ] of a cam slot defined in a lock ring and a cam follower mounted on a pawl with the pawl in an operative position." '154 patent, col. 2, ll. 64-66. Figure 5 also includes markings delineating the "length 'e" '. Although Takata concedes the drawing is not "intended to provide detailed dimensional accuracy," D.I. 93, at 6, even a cursory visual inspection indicates that the cam follower is not at the mid-point between the ends of the cam slot when the pawl is engaging the ratchet wheel.FN19 Because the drawing is not to scale, it is not conclusive as to the inventor's intent in using the word "intermediate." Nevertheless, the fact that the cam follower is so clearly not at the mid-point suggests the inventor had no intent to narrow the definition of "intermediate" only to "at the middle" when using the word to define "extension portion."

FN19. As already rehearsed, the specification states Figure 5 is intended to show the pawl in "an operative position." '154 patent, col. 2, l. 66. The inventor later explains "an operative position" is one "in which [the pawl] engages the ratchet wheel." '154 patent, col. 5, ll. 23-25. Thus Figure 5 clearly depicts a condition in which the pawl has engaged or is engaging the ratchet wheel.

Similarly, the prosecution history, in distinguishing the present invention over prior art, indicates that the present invention was novel, in part, because the extension portion deals with the end-lock problem by allowing "the lock ring to overrun or run past the locked position in the belt unwinding direction, thereby releasing the carrier from engagement with the lock ring so that the inertia spring ... can rest1-ore the carrier to the unlocked position." D.I. 92, Exh. 2.FN20 However, nothing in the intrinsic evidence suggests the narrow "at the middle" definition is necessary to accomplish the function.

FN20. In briefing, the Defendants press for further construction of the phrase "extension portion" to include its purported function to prevent endlock, relying on the patent prosecution. While, as explained above, the function of the extension portion is relevant to construing the inventor's definition of it, the function of the extension portion need not be a part of its definition. First, the inventor has already supplied a definition of "extension portion" which does not address function. Secondly, Claim 1 explicitly teaches the function of the extension portion as "allowing the lock ring to rotate in the belt-unwinding direction without moving the cam following in a direction to disengage the pawl from the ratchet wheel when the pawl is in the operative position."'154 patent, col. 6, ll. 43-46. The Court will not expand the meaning of "extension portion" to include an explanation of its function where that function has been described in another element of the claim. Otherwise, the term "extension portion" would subsume both structure and function, making the function language which follows redundant. *See* Unique Concepts Inc. v. Brown, 939 F.2d 1558, 1562 (Fed.Cir.1991) (merging one element into another is improper because it renders claim language redundant);

cf. Perkins-Elmer Corp. v. Westinghouse Electronics Corp., 822 F.2d 1528, 1532 (Fed.Cir.1987) (in considering doctrine of equivalents, Court is not to "erase a plethora of meaningful structural and functional limitations of the claim").

The broad ordinary meaning of "intermediate" as "lying or being between two points or limits" is clear. Similarly, the fact that this ordinary meaning subsumes the narrower meaning, "at the middle" suggested by the Defendants is also evident. The specification and prosecution history confirm that the inventor made no indication that he wished to further narrow the ordinary meaning of "intermediate." Accordingly, "intermediate" is unambiguous and recourse to other extrinsic evidence is unnecessary.FN21

FN21. After the *Markman* hearing, Takata submitted a translation of the Japanese application which forms the basis for the '154 patent indicating that the Japanese application uses only the term "between two ends". Takata contends that because the Japanese patent application was included in the U.S. patent application, *see* 35 U.S.C. s.s. 119(b), 120; 37 C.F.R. s. 1.55, it is part of the prosecution history, and therefore intrinsic evidence. Defendants objected to consideration of the translation as an attempt to use extrinsic evidence to change the scope of the patent after approval and further submitted translations of French and German patents for the same invention using "in the middle." Takata responded with, *inter alia,* an alternative translation for the French application, and urged the Court to treat the translation from the Japanese patent, the original language version of which is part of the prosecution history, D.I. 92, Exh. 2, as intrinsic evidence. This post-hearing debate need not detain the Court. If the translation of the Japanese application is intrinsic evidence, it merely supports the conclusion the other intrinsic evidence points to-the inventor did not intend to narrow the ordinary meaning of "intermediate". If extrinsic evidence, the translation from the Japanese, along with the French and German translations, is irrelevant to this consideration since the intrinsic evidence unambiguously establishes the proper construction of "intermediate," and it would be inappropriate to narrow the scope of the inventor's definition based on materials not part of the patent's public record when no ambiguity does exist. Vitronics, 90 F.3d at 1583.

Even if it were necessary or appropriate to consider additional extrinsic evidence, these translations are not trustworthy. *See* Pitney Bowes, 1999 WL 415392, at *10 ("[U]nder *Vitronics,* it is entirely appropriate, perhaps even preferable, for a court to consult *trustworthy* extrinsic evidence...." (emphasis added)). In this case, where all the translations, including the one of the Japanese patent, were established *after* the dispute arose at the *Markman* hearing, the Court finds it difficult to believe they are not entirely self-serving. In particular, the French and German translations provided by Defendants are certified not as *the* translations, but as "accurate representations," presumably meaning other representations might also be accurate. *See* D.I. 106, Exhs. 2-3. Indeed, Takata supplied an alternative translation from the French, to which the translator swore. D.I. 108, Exh. A.

The parties also dispute the meaning of the word "engages" as used regarding the pawl and the ratchet wheel in the inventor's definition of "extension portion." Takata proposes the definition "the point at which the pawl contacts, interlocks or meshes the ratchet wheel." D.I. 98, para. 2(f) (citing StairMaster Sports/Medical Prods., Inc. v. Groupe Procycle, Inc., No. Civ. A. 97-396 MMS, 1998 WL 290296 (D.Del. May 20, 1998); *Webster's Third New Int'l Dictionary* 751 (1971). Defendants propose the more limited definition "to come together and interlock." D.I. 98, para. 5(g) (citing *Merriam Webster's Collegiate Dictionary* 393 (10th ed.1999)). Most importantly, Takata's proposed definition implies that contact alone may constitute engagement while Defendant's do not include that definition. The Court, once again, begins its claim construction with the ordinary meaning of the word. Here, the ordinary meaning is not clear. Indeed, both parties cite dictionary definitions which they assert convey the "ordinary meaning" of the term.

Other dictionaries yield up similar "ordinary meanings" such as: "to become meshed or interlocked," *American Heritage Dictionary of the English Language* 610 (3d ed.1992); "[t]o interlock with, fit into a corresponding part," 3 *Oxford English Dictionary* 174 (1933); and "to interlock," *Random House Dictionary of the English Language* 644 (2d ed.1987). These several definitions further highlight the ambiguity in the term "engage" upon which the parties' proposed definitions focus: can "contact" alone constitute engagement?

While "contact" may be part of the dictionary definition of "engage," the language of Claim 1 and the specification make clear that in the context of this patent, the inventor did not intend to use engage to describe mere contact. For example, Claim 1 describes "the pawl being pivotably movable into an *operative* position in which it engages the ratchet wheel ...." '154 patent, ll. 14-15 (emphasis added); *see also* '154 patent, ll. 23-34 ("the pawl is moved from an operative position in which it engages the ratchet wheel"). Similarly, the specification notes "the lock ring, in accordance with the invention, is permitted to rotate due to the continued inertial rotation of the member *after the pawl has engaged the ratchet wheel to lock the latter* .... " '154 patent, ll. 1-5 (emphasis added). Thus, the inventor clearly used "engage" to describe an action which had a result. In the context of this ratchet and pawl gear system, mere contact at any point between the pawl and ratchet would not produce such a result. Rather, the inventor meant something more than mere contact.FN22 It must be contact such that the pawl prevents the ratchet wheel from moving to the next tooth, or, to put it more succinctly contact which "interlocks" or "meshes" the two parts.

FN22. Indeed, even Takata acknowledges that in the context of this invention, "engages" does not mean "contacts" when it argues in its reply brief that "the term 'engages' when used with a ratchet and pawl assembly means the point at which the pawl has moved sufficiently to both *contact* the ratchet wheel and *interfere* with its rotation to the next tooth of the ratchet wheel." D.I. 93, at 6.

The definition of "extension portion" is thus strictly limited to the definition provided by the inventor: the portion of the cam slot "having a length 'e' such that the cam follower is positioned intermediate between the ends of the cam slot when the pawl engages the ratchet wheel." Restated to clarify the disputed terms in that definition, the Court construes "extension portion" to be the portion of the cam slot having a length 'e', that portion which has not been traversed by the cam follower when the pawl engages- *i.e.,* makes contact with and prevents movement of, interlocks or meshes with-the ratchet wheel, such that the cam follower is positioned intermediate- *i.e.,* lying or being between two points or limits-between the ends of the cam slot when the pawl engages the ratchet wheel.

V. CLAIM CONSTRUCTION OF THE '912 PATENT

The '912 patent contains the following limitations:

an *over-center spring* coupled to the activating lever and biassing it to a first position in which the arm moves the actuator pawl to the automatic locking position and also biassing it to a second position out of engagement with the actuator pawl, and *means responsive to rotation of the belt reel for pivoting the activating lever between the first and second positions*.

'912 patent, col. 8, ll. 29-36 (emphases added). The parties ask the Court to interpret the highlighted portions of the above-quoted material. First, they seek a court ruling on what structures are included by the language, "means responsive to rotation of the belt reel for pivoting the activating lever between the first and second

position." Second, the parties request the court to construe "over-center spring".

A. Content of "means responsive to rotation" as a Means-plus-Function Element

The parties agree "means responsive to rotation of the belt reel for pivoting the activating lever between the first and second position" is a "means-plus-function" element and, pursuant to 35 U.S.C. s. 112, para. 6, should be construed "to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." The parties cannot agree which elements described in the specification make up the corresponding structure which perform the function described. Takata and Defendants agree that the structure includes the elements recited in the specification: 1) sun gear 24; 2) planet gear 25; 3) internal gear 23; and 4) pins 27A and 27B. D.I. 91 at 25; D.I. 93 at 11; D.I. 94 at 9. However, Defendants argue, and Takata disputes, that the corresponding structure also includes the over-center spring 33. The Court concludes the over-center spring 33 is not part of the structure. However, the "means responsive" structure does include the sun gear, planet gear, internal gear and pins.

As already rehearsed, the Court's first step is to identify the "corresponding structure" which performs the recited function. Smiths Indus., 1999 WL 498219, at *9. In this case, the corresponding structure must "pivot the activating lever between the first and second position". The language of the specification and claims in the '912 patent links only four elements, and not the over-center spring, to the claimed function. The patent discloses:

The position of the activating lever 30 is controlled by the planetary gear train, which acts upon two pins 27A and 27B that are slidably received in guideways 28 and 29 in the cover 22. At two specific, predetermined rotational and orbital positions of the planet gear 25, a projection 25A (which is, of course, offset laterally from the gear teeth) engages one or the other of the pins 27A and 27B.... [A]fter the automatic locking mechanism has been activated for use and the belt is rewound after such activation, the projection 25A on the planet gear 25 engages *the pin 27B, which in turn engages a surface 31 on the activating lever 30 and pivots the lever* 30 to the position shown in FIG. 5.... The *over-center spring holds* the lever 30 in the position shown in FIG. 5 at all times other than when the belt is pulled out far enough to activate the automatic locking mechanism.

'912 patent, col. 6, ll. 11-18, 22-28, 30-33 (emphases added). As this portion of the specification discloses, the function claimed- *pivoting* the lever-is performed when the sun gear 24, planetary gear 25 and pins 27A and 27B interact such that one pin or the other "engages a surface on the activating lever and *pivots the lever*." '912 patent, col. 6, 25-27 (emphasis added) (reference numbers omitted). The over-center spring has only the function of "holding" the lever in position. Thus the specification teaches the structure corresponding to the means-plus-function language does *not* include the over-center spring. The mere juxtaposition of a discussion of the function of the over-center spring with the inventor's discussion of how the activating lever is pivoted does not, without more mean the over-center spring participates in the pivoting function. *See* Unidynamic Corp., 157 F.3d at 1319 (requiring clear link to function recited in the claim by the intrinsic evidence).

After identifying the corresponding structure as 1) sun gear 24; 2) planet gear 25; 3) internal gear 23; and 4) pins 27A and 27B, the Court's next step is to construe the claim language to cover "that corresponding structure as well as 'equivalents thereof." ' Smiths Indus., 1999 WL 498219, at *9 (quoting 35 U.S.C. s. 112, para. 6). Thus, the Court construes "means responsive to the rotation of the belt reel for pivoting the activating lever between the first and second position" to be the structure consisting of 1) sun gear 24; 2)

planet gear 25; 3) internal gear 23; and 4) pins 27A and 27B, and its equivalents.

Defendants assert that the doctrine of claim differentiation requires the Court to construe the "means responsive" to include the "over-center spring". The doctrine of claim differentiation creates a presumption that an inventor intended claims to be different in scope. Karlin, 177 F.3d at 972. This means a claim should generally not be construed so it is identical in scope to another claim in the same patent. *See id*. Defendants point to the language of Claim 2 which recites:

[a] seat belt retractor according to claim 1 and further characterized in that said means responsive to rotation of the belt reel includes a planetary gear train having a sun gear rotatable with the belt reel, an internal gear affixed to the retractor frame and a planet gear engaging the sun gear and internal gear, rotating between them and orbiting the sun gear, a projection on the planet gear and a pair of pins engageable by the projection on the planet gear in predetermined rotational and orbital positions thereof and upon such engagements movable to engage and shift the activating lever between the first and second positions.

'912 patent, col 8, ll. 37-48. Defendants urge the structure recited in Claim 2 is identical to the "corresponding structure" which the Court has identified and that the doctrine of claim differentiation does not permit this. However, the claims are different. In Claim 1, the inventor chose to use "mean-plus-function" language to describe the "means responsive ...." This means the "literal scope of [the] means-plus-function claim [language] includes the identified corresponding structure ... *as well as 'equivalents thereof*." ' Smiths Indus., 1999 WL 498219, at *10 (quoting 35 U.S.C. s. 112, para. 6). In Claim 2, the inventor chose to narrow the literal scope of that claim to include only the recited structure and not equivalents of that structure. FN23 The Court's construction of the disputed language is not inconsistent with the doctrine of claim differentiation because, as construed, the two claims are different in literal scope.

FN23. That does not preclude an analysis of infringement of Claim 2 under the doctrine of equivalents. As the Federal Circuit Court of Appeals has recently explained:
Section 112, para. 6 recites a mandatory procedure for interpreting the meaning of a means- or step-plus-function claim element.... Thus s. 112, para. 6 procedures restrict a function claim element's "broad literal language ... to those means that are 'equivalent' to the actual means shown in the patent specification." Warner-Jenkinson [Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 27], 117 S.Ct. [1040], 1048 [(1997)]. Section 112, para. 6 restricts the scope of a functional claim limitation as part of a literal infringement analysis. *See* Penwalt Corp. v. Durand Wayland, Inc., 833 F.2d 931, 934, 4 U.S.P.Q.2d 1737, 1739 (Fed.Cir.1987). Thus an equivalent under s. 112, para. 6 informs the claim meaning for a literal infringement analysis. The doctrine of equivalents, on the other hand, extends enforcement of claim terms beyond their literal reach in the event "there is 'equivalence' between the elements of the accused product or process and the claimed elements of the patented invention." Warner-Jenkinson, 117 S.Ct. at 1045.

Al- Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1320 (Fed.Cir.1999). Thus, s. 112, para. 6 is part of determining the literal scope of claims, but does not touch on the issue of "equivalence" for purposes of infringement analysis.
The Court therefore construes the "means responsive" in Claim 1 to include the 1) sun gear 24; 2) planet gear 25; 3) internal gear 23; and 4) pins 27A and 27B, as they are structured in the specification of the '912 patent and equivalents thereof. The "means responsive" does not include the over-center spring 33.

B. "over-center spring"

The parties also request the Court to construe the meaning of "over-center spring". As Claim 1 explains, the over-center spring is "coupled to the activating lever and bias[es] it to a first position in which the arm moves the actuator pawl to the automatic locking position and also bias[es] it to a second position out of engagement with the actuator pawl." '912 patent, col. 8, ll. 29-33.

The parties agree "over-center spring" is not "a newly coined term with no definite meaning," D.I. 91 at 19, but rather is "a particular type of spring the characteristics of which are recognized by those skilled in the art," D.I. 94 at 9. Indeed, the proposed definitions to which the parties have stipulated are not far apart. Takata proposes an over-center spring is "a spring that biases a member toward a first stable position under a first set of mechanical conditions and toward a second stable position under a second set of mechanical conditions, with the member passing through an intermediate meta-stable position." D.I. 98, para. 3(b). Defendants urge that an over-center spring is "[a] spring that biases a member in one direction until the member passes a transition point, and then biases the member in another direction." D.I. 98, para. 3(c). Thus, the primary dispute between Takata and Defendants is whether the over-center spring biases a member toward a position or in a direction. FN24

FN24. Although the competing definitions also differ regarding the language of the "transition point" or the "meta-stable" position of the member, the language of each definition encompasses the same notion and the difference is not significant.

Interestingly, although Takata uses "intermediate" in its proposed definition, it is not a point of dispute between the parties here.
Both definitions are consistent with the usage of the term "over-center" in technical treatises. *See Mechanical Design and Systems Handbook* s. 4.2.9, at 4.7 (Harold A. Rothbart, ed., 2d ed.1985); *Mechanisms & Mechanical Devises Sourcebook* 214-17 (Nicholas P. Chironis, ed.1991). Because the common usage of the term is unclear with regard to whether an over-center device biases a member in a direction or to a position, the Court turns to language of the claim itself. The claim, which is of primary importance in claim construction, Smiths Indus., 1999 WL 498219, at *9; *Johnson Worldwide,* 175 F.3d 989-90, describes the action of the over-center spring in the patented invention as follows: "an over-center spring coupled to the activating lever and biassing it *to a first position* in which the arm moves the actuator pawl to the automatic locking position and also biassing it *to a second position* out of engagement with the actuator pawl ...." '912 patent, col. 8, ll. 30-33 (emphases added). In writing the claim, the inventor envisioned the over-center spring not in terms of direction, but in terms of position. Indeed, as described in the claim, the activating lever is either engaged with the actuator pawl or out of engagement with the actuator pawl: the importance of the motion of the activating lever described in the claim is the position at which it arrives. Nothing in the claim language suggests that the bias of the activating lever toward either the first or second position occurs in a particular direction. It follows the claim itself indicates that the inventor used "over-center spring" to mean "a spring that biases a member [the activating lever] to a first stable position under a first set of mechanical conditions and to a second stable position under a second set of mechanical conditions, with the member passing through an intermediate meta-stable position."

The discussion of the over-center spring in the specification confirms this interpretation of the claim language. For example, the over-center spring "holds the [activating] lever in the position ...." '912 patent, col. 6, ll. 30-31 (reference number omitted). While the definition of over-center spring urged by Defendants encompasses an over-center spring which biases the activating lever in a direction, connoting motion, Defendants' proposed construction does not encompass an over-center spring which *holds* the activating lever. On the other hand, defining an over-center spring as a spring that biases a member *to a position* does

connote a spring which can hold the activating lever.

One portion of the specification does describe the bias of the over-center spring in directional terms. In describing the way in which the preferred embodiment achieves engagement between the activating lever and the actuator pawl, the specification states, "The bias of the over-center spring on the lever is transferred to counter-clockwise ...." '912 patent, col. 7, ll. 6-8. This use of direction does not, however, contradict the Court's conclusions. First, as a general rule, the preferred embodiment cannot serve to limit the terms of a claim. Karlin Technology Inc., 177 F.3d at 973; Laitrim Corp. v. NEC Corp., 163 F.3d at 1348; Enercon v. International Trade Commission, 151 F.3d at 1384; CVI/Beta, 112 F.3d at 1158. To import this configuration of the preferred embodiment, which has an over-center spring which biases to the first and second positions in two different directions, would be an impermissible importation of the preferred embodiment into the claim. Secondly, even if the over-center spring described in the preferred embodiment does bias the activating lever to each position in a direction, interpreting "over-center spring" based only on this statement would ignore those portions of the specification which describe the over-center spring as holding the activating lever.

The Court adopts the "construction that stays true to the claim language and most naturally aligns with the patent's description of the invention," Renishaw, 158 F.3d at 1250, and construes "over-center spring" to mean "a spring that biases a member toward a first stable position under a first set of mechanical conditions and toward a second stable position under a second set of mechanical conditions, with the member passing through an intermediate meta-stable position."

VI. CONCLUSION

In summary, the Court constructs the disputed claim language as follows:

1. In Claim 1 of the '154 patent, "extension portion" means "the portion of the cam slot having a length 'e', that portion which has not been traversed by the cam follower when the pawl makes contact with and prevents movement of, interlocks or meshes with the ratchet wheel, such that the cam follower is positioned between two points or limits-between the ends of the cam slot, when the pawl engages the ratchet wheel."

2. In Claim 1 of the '912 patent, "means responsive ..." is a means-plus-function element. The structure which corresponds to the function recited in the claim includes the sun gear, the planet gear, the internal gear and the two pins, but does not include the over-center spring. Thus, the Court construes the "means responsive ..." element as the corresponding structure, which includes the sun gear, planet gear, internal gear and pins, and its equivalents.

3. In Claim 1 of the '912 patent, "over-center spring" is construed to mean "a spring that biases a member toward a first stable position under a first set of mechanical conditions and toward a second stable position under a second set of mechanical conditions, with the member passing through an intermediate meta-stable position."

D.Del.,1999.
Takata Corp. v. AlliedSignal, Inc.

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