

UNITED STATES DISTRICT COURT  
DISTRICT OF NEW JERSEY

LUGUS IP, LLC,

Plaintiff,

v.

VOLVO CAR CORP., and VOLVO CARS  
OF NORTH AMERICA, LLC,

Defendants.

HONORABLE JOSEPH E. IRENAS

CIVIL ACTION NO. 12-2906  
(JEI/JS)**CLAIM CONSTRUCTION OPINION****APPEARANCES :**

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**IRENAS**, Senior District Judge:

This is a patent infringement case concerning allegations of both direct and indirect infringement. Plaintiff Lugus IP, LLC alleges that Defendants Volvo Car Corporation and Volvo Cars of North America, LLC have infringed U.S. Patent No. 5,806,926 (the "'926 patent"). Presently before the Court is the parties' request for claim construction. The Court held a *Markman* hearing on May 1, 2014, and now construes the disputed claim terms as set forth below.

## I.

The patent at issue in the pending matter, titled "Convertible Vehicle Child Safety Seat," concerns a child restraint system for use in motor vehicles. Inventor David A. Parsons of Jefferson, Maryland filed the '926 patent on July 18, 1997, and the patent was issued on September 15, 1998. By recorded assignment, Plaintiff Lugus IP, LLC now holds the entire right, title, and interest in and to the '926 patent.

The '926 patent is for a child safety seat that automatically converts to a seat for adult use when not in use by a child. Thus, the seat has two settings - the adult / "undeployed" setting, and the child / "deployed" setting - as well as two stages by which it converts between the two settings - a manual conversion from undeployed to deployed, and an automatic conversion from deployed to undeployed.

The '926 patent seeks to address a problem in passenger vehicles: many vehicles, particularly those used for public transportation, lack restraints to hold the passenger in their seat if the vehicle is subject to sudden movements caused by emergency stops or movements to avoid accidents. This problem is less urgent with adults, who are generally capable of holding onto their seat or a nearby structure in order to avoid being thrown from their seat. However, children generally lack the strength necessary to protect themselves and therefore face substantial risks in passenger vehicles that lack child safety restraints.

In view of these safety issues, the '926 patent further recognizes that installing specific child and adult seats in public transportation would be undesirable. More specifically, public transportation requires seats to be readily available for use by both adults and children, and the installation of specific child safety restraint seats would reduce the available

seats for adult passengers. However, the convertible vehicle child safety seat in the '926 patent is "specially suited" to public transportation applications, where it can transform quickly and easily from its adult configuration to a child configuration, thereby providing restraints and protection for children without reducing the number of available adult seats when unoccupied by a child.

When installed in a passenger vehicle, the '926 seat appears as any normal adult seat. In its undeployed setting, the '926 seat is fit for an adult's normal usage. Illustrated in Figure 1 of the '926 patent, the undeployed setting is denoted by the number **14**.

To convert from the adult setting to the deployed child setting, the undeployed seatback pivots down when an individual "manually pull[s] forward and downward" on that seatback. This pivoting process reveals a Y-shaped safety harness with two belts, shaped to fit over a child's shoulders, in the seatback of the deployed setting. The safety harness connects through a slot in a fastener between the child's legs.

When the safety harness is engaged, the lower portion of the safety belt is held in position by the projecting end of a spring loaded plunger found underneath the seat. A T-shaped handle appears on the front end of the seat; when the T-shaped

handle is pulled outward, the spring loaded plunger is further compressed, releasing the safety belt.

In addition, the underneath of the seat is fitted with a contracting piston. When the T-shaped handle is pulled outward to release the safety harness, the child may be removed from the deployed seat. After removing the child, an act that releases the downward pressure on the seat, the piston is permitted to activate and automatically return the deployed seat bottom to its undeployed position as a seatback.

By recorded assignment, Plaintiff Lugas IP, LLC ("Plaintiff" or "Lugas") now holds all rights to enforce the '926 patent. Lugas brings this lawsuit against Defendants Volvo Car Corporation and Volvo Cars of North America, LLC ("Defendants" or "Volvo"), asserting that child safety booster seats installed in certain models of Volvo vehicles, including the Volvo XC60, XC70, and V70,<sup>1</sup> infringe upon the '926 patent.

The final step of converting the deployed seat to its undeployed position is at the root of the parties' infringement dispute. The parties have identified one independent claim and four dependent claim terms that now require construction: (1) "retracting means for automatically retracting said child safety seat into a portion of said adult seat," (2) "to form part of a

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<sup>1</sup> Lugas specifically contends that seats in the XC60 and XC70 from model years 2008, 2009, 2011, 2012, and 2013 are infringing products, as well as seats found in the V70, model years 2009 and 2010.

fully contoured adult seat when said child is not located in said child safety seat,"<sup>2</sup> (3) "extension means for permitting the child safety seat to be extended to be used by a child," (4) "latch means associated with said safety straps for securing a child in said child safety seat," and (5) "releasing means." The Court construes these claims below.

## II.

Claim construction is a matter of law for the Court to decide. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996). "It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1319 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)).

The Court begins a claim construction analysis by examining the intrinsic evidence, which includes the claims, the specification, and the prosecution history.<sup>3</sup> *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). "A

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<sup>2</sup> The Court notes that Volvo considers terms (1) and (2) to be one term requiring construction in its entirety, rather than as separate claim terms for construction as Lugus contends. The Court addresses this dispute *infra* when construing the language of these claims.

<sup>3</sup> The prosecution history "consists of the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent." *Phillips*, 415 F.3d at 1317.

claim construction analysis must begin and remain centered on the claim language itself." *Innova*, 381 F.3d at 1116. There is a heavy presumption that a claim term conveys its ordinary and customary meaning, which "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips*, 415 F.3d at 1313. But a patentee may overcome this presumption and choose "to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term." *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 990 (Fed. Cir. 1999); see also *Schering Corp. v. Amgen Inc.*, 222 F.3d 1347, 1353 (Fed. Cir. 2000); *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-80 (Fed. Cir. 1995), *aff'd* 517 U.S. 370 (1996).

The claims themselves and the context in which a term is used within the claims can "provide substantial guidance as to the meaning of particular claim terms." *Phillips*, 415 F.3d at 1314. In addition, other claims of the patent may be useful in construing a claim term, as "claim terms are normally used consistently throughout the patent." *Id.* Similarly, claims that differ from each other may provide insight into how a term should be read. *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991).

After examining the claims, "it is always necessary to review the specification to determine whether the inventor has

used any terms in a manner inconsistent with their ordinary meaning." *Vitronics*, 90 F.3d at 1582. "For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims." *Markman*, 52 F.3d at 979. For this reason, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582.

Finally, the Court should also examine the prosecution history, if it is in evidence. *Phillips*, 415 F.3d at 1317. "The prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.*

"[I]deally there should be no 'ambiguity' in claim language to one of ordinary skill in the art that would require resort to evidence outside the specification and prosecution history." *Markman*, 52 F.3d at 986. But if the term remains unclear or unambiguous after examining the intrinsic evidence, the Court may turn to extrinsic evidence. *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1216 (Fed. Cir. 1995).

"Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor

testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980. Although extrinsic evidence is useful in determining how a person of ordinary skill in the art would understand the term, it is less reliable for the purposes of claim construction than the patent and its prosecution history. *Phillips*, 415 F.3d at 1318-19. Therefore, extrinsic evidence must be viewed within the context of intrinsic evidence. *Id.* at 1319.

### III.

In the course of briefing, Lugus identifies the following five claim terms in the '926 patent that require construction: (1) "retracting means for automatically retracting said child safety seat into a portion of said adult seat," (2) "to form part of a fully contoured adult seat when said child is not located in said child safety seat," (3) "extension means for permitting the child safety seat to be extended to be used by a child," (4) "latch means associated with said safety straps for securing a child in said child safety seat," and (5) "releasing means." Volvo identifies the same claim terms requiring construction, however Volvo contends that (1) and (2) should be read together as one claim requiring construction.

Following briefing and the *Markman* hearing, the parties refined their disputed claim terms. First, the parties now

agree that the disputed claim terms all fall within the means-plus-function limitation governed by 35 U.S.C. § 112(f).

Second, Lugus accepts Volvo's proposed construction of "releasing means."

Before turning to the task of construing the disputed terms, the Court first reviews the means-plus-function limitation. The Court then turns to construing each of the disputed claim terms in accordance with § 112(f).

#### **A. "Means-Plus-Function" Limitation**

A claim element may appear in a patent in a "means-plus-function" format, as envisioned by § 112(f). The statute provides:

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 claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

§ 112(f). In other words, patent language pursuant to § 112(f) may "recite[] a function to be performed rather than definite structure or materials for performing that function."

*Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1307 (Fed. Cir. 1998); see also *Ibormeith IP, LLC v. Mercedes-Benz USA, LLC*, 732 F.3d 1376, 1379 (Fed. Cir. 2013).

Use of the term "means" in the claim language creates a presumption that the term is "drafted in the means-plus-function format" of § 112(f).<sup>4</sup> *Rembrandt Data Techs., LP v. AOL, LLC*, 641 F.3d 1331, 1340 (Fed. Cir. 2011) (quoting *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1366 (Fed. Cir. 2008)).

The Federal Circuit has established a two-part test for construction of a means-plus-function limitation. *See, e.g., LMT Mercer Grp., Inc. v. Maine Ornamental, LLC*, Nos. 10-cv-4615, 10-cv-6699 (FLW), 2014 WL 183823, at \*7-8 (D.N.J. Jan. 16, 2014) (applying Federal Circuit test). "First, the court must determine the claimed function." *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1311 (Fed. Cir. 2012) (citation omitted). In this first step, the Court may not "adopt [] a function different from that explicitly recited in the claim nor incorporat[e] . . . structure from the written description beyond that necessary to perform the claimed function." *LMT Mercer Grp.*, 2014 WL 183823, at \*8 (alterations in original) (quoting *Micro Chem., Inc. v. Great Plains Chem. Co., Inc.*, 194 F.3d 1250, 1257-58 (Fed. Cir. 1999)). Rather, the Court "must construe the function of a means-plus-function limitation to include the limitations contained in the claim language."

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<sup>4</sup> This presumption may be overcome if the claim "recites sufficient structure for performing the described functions in their entirety." *TriMed, Inc. v. Stryker Corp.*, 514 F.3d 1256, 1259 (Fed. Cir. 2008).

*Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002).

"Second, the court must identify the corresponding structure in the written description of the patent that performs the function." *Noah Sys., Inc.*, 675 F.3d at 1311 (citation omitted). The structure disclosed in the patent specification is "'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1208 (Fed. Cir. 2002) (quoting *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997)); see also *Noah Sys., Inc.*, 675 F.3d at 1311. In essence, this second step requires the Court to identify "an adequate disclosure showing what is meant by [the functional] language." *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A. Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). This disclosed structure "must include all structure that actually performs the recited function." *Id.* (citing *Cardiac Pacemakers*, 296 F.3d at 1119).

With these principles under consideration, the Court now turns to the disputed claim terms for construction.

**B. "Retracting means for automatically retracting said child safety seat into a portion of said adult seat" & "to form part**

**of a fully contoured adult seat when said child is not located in said child safety seat"**

Central to the parties' dispute is whether these two phrases constitute one or two terms requiring construction as the functional portion of the means-plus-function language. Lugus contends that these are two separate terms - the first portion should be construed as the means-plus-function language and the second is additional language also requiring claim construction. On the other hand, Volvo asserts that Lugus's second term is a limitation on the functional portion of the means-plus-function language, and thus the two phrases must be construed together as one. *See Cardiac Pacemakers*, 296 F.3d at 1113. The Court first addresses this dispute before turning to the construction of the terms.

**1.**

Despite Lugus's contention to the contrary, the Court finds that the functional portion of the term requiring claim construction is the following: "Retracting means for automatically retracting said child safety seat into a portion of said adult seat to form part of a fully contoured adult seat when said child is not located in said child safety seat." The Court reaches this conclusion so as to give effect to all of the language in the claim. *See Frans Nooren Afdichtingssystemen*

*B.V. v. Stopaq Amcorr Inc.*, 744 F.3d 715, 722 (Fed. Cir. 2014) (“It is the usual (though not invariable) rule that, in patent claims as elsewhere, the construction of a clause as a whole requires construction of the parts, with meaning to be given to each part so as to avoid rendering any part superfluous.”) The Court reads the claims at issue “in accordance with the precepts of English grammar.” See *In re Hyatt*, 708 F.2d 712, 714 (Fed. Cir. 1983). To give effect to all parts of the claim, the Court must consider limitations included in means-plus-function claim language as part of the claim language. *Cardiac Pacemakers*, 296 F.3d at 1113.

Here, Volvo properly asserts that intrinsic evidence demonstrates that the means-plus-function term includes the full limitation contained in the prepositional phrase: “to form part of a fully contoured adult seat when said child is not located in said child safety seat.” The language within the ‘926 patent demonstrates that the function – the conversion of the child seat for adult use when not occupied by a child – appears as a single functional concept throughout the patent. For example, the summary of the invention explains:

It is an object of the invention to provide a convertible vehicle child safety seat that automatically converts to a seat for adult use when it is not occupied by a child through retraction of the child seat portion into the back portion of the main seat that is accomplished by a piston assembly with a

piston that decompresses or retracts when the child is removed from the seat.

'926 Patent col.2 l.15-22. The detailed description of the invention similarly describes these functional concepts together when it explains that once an adult wishes to release the child from the seat, after pulling the T-shaped handle to release the child restraints, "the child [may be] removed from the seat back portion **18** and in view of the previously described contracting piston **56**, the seat assumes the position illustrated in FIG. 1 for the seat **14** to allow normal seating of an adult passenger." *Id.* col.4 l.20-27. Finally, there is no grammatical rationale for separating these two phrases, particularly in light of the intrinsic evidence describing these related functional concepts.

In its Claim Construction Brief, Lugus argues that no child must be present for the operation of the seat, and as a result, inclusion of the "to form part of a fully contoured adult seat when said child is not located in said child safety seat," reads the presence of a child into the patent specification. (See Pl.'s Claim Const. Br. at 12) In support of their position, Lugus contends that a "claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct." *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007) (quoting *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1138 (Fed.

Cir. 2004)). However, in *MBO Laboratories*, the Federal Circuit clearly discerned a conflict between the construed term at issue in that case and the figures included in the patents in that case.<sup>5</sup> *MBO Labs.*, 474 F.3d at 1333. Here, the absence of a picture of a child in the figures included with the patent does not create a similar conflict; Figure 3 manifests the downward pressure of a child (denoted by the letter P) and demonstrates that the prepositional phrase concerning the child's presence (an embodiment of that pressure) is not inconsistent with the embodiment of the child seat shown in the patent.<sup>6</sup> See '926 Patent fig. 3. Thus, adopting the entire phrase as the means-plus-function term is consistent with the patent language. As a result, the Court finds that the functional language is:

"automatically retracting said child safety seat into a portion

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<sup>5</sup> In *MBO Laboratories*, the Court was able to discern two different preferred embodiments in two different figures of two patents at issue. See *MBO Labs.*, 474 F.3d at 1333. More specifically, the term "adjacent" was construed by the district court as "contiguous or connected," but upon review, the Federal Circuit looked to two figures in the patents at issue that "clearly show the blocking flange resting somewhat in front of the front surface and not in any way 'contiguous or connected' with it." *Id.* As a result, the district court's claim interpretation excluded a preferred embodiment from the scope of the claim. *Id.* As described *supra*, the Court's construction of this function is in accordance with the claimed language and figures within the '926 patent, avoiding the conflict described in *MBO Laboratories*.

<sup>6</sup> Differently stated, *Lugus* argues that "[w]hether or not a child is present is not dispositive of whether the seat wants to retract. What is dispositive is whether the T-shaped handle 52 is, or is not, pulled." (Pl.'s Claim Const. Br. at 12-13) This overlooks the downward force of the child included in Figure 3 - an adult user might pull the T-shaped handle and the seat might then try to retract, but until the child (and the child's downward pressure) is removed from the seat, the seat *cannot* retract, as reflected in the language of the limitation.

of said adult seat to form part of a fully contoured adult seat when said child is not located in said child safety seat.”

**2.**

By resolving the dispute regarding the inclusion of the limitation in the means-plus-function language in accordance with *Cardiac Pacemakers*, the Court has identified the functional language of the means-plus-function term requiring claim construction. The parties’ briefing raises three terms within the functional language potentially requiring claim construction: (1) automatically, (2) into a portion of said adult seat to form part of a fully contoured adult seat, and (3) when. The Court addresses each of these in turn.

**a.**

In highlighting the term “automatically,” the parties initially agree that the term does not require construction, but also enclose a proposed definition depending on whether the Court adopts functional language that requires construction.<sup>7</sup> The Court has already adopted the following functional language:

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<sup>7</sup> The parties focus their briefing of the term “automatically” on matters of Volvo’s alleged infringement. The Court focuses solely on whether the term requires construction, and in doing so, need not parse the parties’ briefing concerning infringement. In addition, the Court reaches its conclusion herein disregarding Volvo’s video demonstration at oral argument, and therefore does not address whether such video should have been included in any pre-*Markman* discovery by the parties.

"retracting means for automatically retracting said child safety seat into a portion of said adult seat to form part of a fully contoured adult seat when said child is not located in said child safety seat." In adopting this language, the Court will construe the term "automatically" to give the term its plain meaning, as directed by the Federal Circuit.

The purpose of claim construction is to "determin[e] the meaning and scope of the patent claims asserted to be infringed." *Markman*, 52 F.3d at 976. There is a heavy presumption that a claim term conveys its ordinary and customary meaning, which "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips*, 415 F.3d at 1313. A court should only look to extrinsic evidence if a term at issue remains unclear or ambiguous after examining the intrinsic evidence. *Pall Corp.*, 66 F.3d at 1216.

Here, there is no indication that the Court must look past the ordinary and customary meaning of "automatically," as used in the claim language. In view of the function adopted for the broader term - "retracting means for automatically retracting said child safety seat into a portion of said adult seat to form part of a fully contoured adult seat when said child is not located in said child safety seat" - there is no indication that the term "automatically" should mean anything besides its

commonly understood definition. Throughout the '926 patent, the specification repeatedly describes automatic conversion. For example, the summary of the invention clearly describes how the adult seat automatically converts from the child safety seat into a seat for adult use when not occupied by a child. See, e.g., '926 Patent col.1, 1.65-67; *Id.* col.2, 1.1-22. This automatic conversion is in contrast to various manual tasks, like the manual pulling of pivoting back portion **18** to bring the adult seat back down into position for the child safety seat. *Id.* col.4, 1.4-10. In short, there is no indication that the patent gives the term "automatically" any other meaning, nor is there any ambiguity as to its meaning. As the parties consented in their briefing and at oral argument, the term is generally understood as some kind of "self-acting or self-regulating mechanism that performs a required act at a predetermined point in an operation."<sup>8</sup> WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 148 (1993). As a result, the Court adopts the plain meaning of the term, in accordance with the dictionary definition.

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<sup>8</sup> The Federal Circuit previously looked to relevant dictionary definitions to clarify how the term "automatically" would be generally understood. See *Space Systems/Loral, Inc. v. Lockheed Martin Corp.*, Nos. 99-1255, 99-1289, 2000 WL 1025154, at \*4-5 (Fed. Cir. Aug. 23, 2000). Here, the parties consent that if the Court were to construe "automatically," it should adopt the dictionary definition: "having a self-acting or self-regulating mechanism that performs a required act at a predetermined point in an operation." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 148 (1993). Given that the term is unambiguous in its usage throughout the '926 patent, the Court looks to the dictionary definition only to demonstrate that the general understanding of the term is consistent with the "self-acting or self-regulating mechanism" that the parties consent to in their briefing.

**b.**

Following briefing and oral argument, the parties' central dispute concerning this term, "into a portion of said adult seat to form part of a fully contoured adult seat," concerns the impact of this limitation on the identified function in the § 112(f) means-plus-function term. However, the Court already addressed this dispute *supra*, determining that this limitation language is a limitation included as part of the function in this means-plus-function term. Indeed, Lugus concedes that it does not dispute Volvo's proposed plain language interpretation of "portion" or "part of," as Lugus explains that "Lugus is of the position that 'portion' means portion." (Pl.'s Resp. Claim Const. Br. at 7) Any dispute between the parties concerning the construction of this term actually concerns whether this limitation should be included in the functional language of the means-plus-function term. Having concluded that the term must be included, and in light of the parties' agreement that plain meaning of these terms is appropriate, the Court need not further address construction of the term.

**c.**

Finally, the parties dispute the proper construction of the term "when," as part of the limitation: "to form part of a fully contoured adult seat *when* said child is not located in said

child safety seat." '926 Patent, col.4, l.41-42 (emphasis added). When a term "has more than one 'ordinary' meaning or when reliance on a term's 'ordinary meaning' does not resolve the parties' dispute," the Court must more fully construe the term at issue. *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008).

Here, Volvo asserts that the term "when" should be given its plain meaning, consistent with the term's use in the specification, construed as "just after the moment that," and "in the event that." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 2602 (1993). Lugus also asserts that the term should be given its plain meaning, but contends that this plain meaning is defined as "at or on which," in light of the fact that the presence of a child is irrelevant to the seat's operation. As a result, failure to construe this term would not resolve Lugus and Volvo's dispute over its construction.

The Court first looks to intrinsic evidence to determine the proper construction of the term "when." The claim language in the '926 patent explains that the retracting means function includes "automatically retracting said child safety seat . . . when said child is not located in said child safety seat." '926 Patent col.4, l. 39-42. As Volvo points out, the summary of the invention describes this automatic process, explaining:

It is an object of the invention to provide a convertible vehicle child safety seat that automatically converts to a seat for adult use when it is not occupied by a child through retraction of the child seat portion into the back portion of the main seat that is accomplished by a piston assembly with a piston that decompresses or retracts when the child is removed from the seat.

*Id.* col.2, 1.15-21. Furthermore, the patent specification explains that the seat "pivot[s] into its upward position as illustrated for the seat **14** when the handle **52** is pulled outward and the child is removed from the seat back portion **18**." *Id.* col.3, 1.27-30 (emphasis added). Importantly, removing the child causes this retraction because "[t]he weight of the child (indicated by the letter P [best shown in Figure 3]) holds the pivoting back portion **18** in its downward position as indicated in FIG. 1 for the seat **12**." *Id.* col.4, 1.10-12. In this context, Volvo argues that its proposed dictionary definition of "in the event that" properly reflects the fact that automatic retraction actually occurs at the time that the child is not located in the seat; otherwise stated as: "[In the event that] said child is not located in said child safety seat."

In view of this intrinsic evidence, the Court must reject Lugus's alternate proposed construction. In Lugus's view, the presence of the child is irrelevant to the operation of the automatic retraction, and thus Volvo's proposed temporal construction of "when" is misplaced. However, Lugus overlooks

the role of the pressure of the child that appears throughout the '926 patent, described above. In essence, though the piston assembly may "want" to automatically retract, it may only automatically retract at the time that the pressure from the child is removed. As a result, the Court will adopt Volvo's proposed construction because it comports with the description contained in the '926 patent. Thus, the term "when" will be construed as "in the event that," consistent with the intrinsic evidence contained in the specification.

### 3.

Finally, in accordance with § 112(f), the Court must determine the corresponding structure in this means-plus-function term. *Noah Sys., Inc.*, 675 F.3d at 1311. The Court must only identify structure in the specification or prosecution history that is clearly linked to the claimed function. *Texas Digital Sys.*, 308 F.3d at 1208.

Here, the full function including all of the relevant limitation terms is: "automatically retracting said child safety seat into a portion of said adult seat to form part of a fully contoured adult seat when said child is not located in said child safety seat." Volvo proposes the following corresponding structure, broken into five portions: (1) contracting piston **56**, including the forward portion **58**, rear portion **60**, and piston

rod **62**; (2) pivoting back portion **18**, including rear portion **64**, bushing **84**, bolt **86**, downward projection **88**, bushing **90**, and bolt **92**; (3) seat frame **94**; (4) bushing **96**; and (5) bolt **98**, such that the bottom surface of the pivoting back portion **18** forms a fully contoured adult seat in the raised position and the top surface of the pivoting back portion **18** can form a seat portion of a child safety seat. In contrast, Lugus only identifies contrasting piston **56**, connected to the seat to cause the seat to pivot in a direction of retraction after being released by handle **52**, spring **50**, and fastener **40**.

To properly define the relevant structure that effects retraction, the Court must adopt Volvo's proposed structure. Lugus essentially contends that pulling T-shaped handle **52** disengages fastener **40**, which permits the force from the contracting piston **56** to bias the child safety seat into the adult seat. See '926 Patent col.4, l.21-28. However, this overlooks the specification, which details how contracting piston **56** contracts the piston rod **62** when pressure is not applied to seat back portion **18**. *Id.* col.3, l.59-60. The contraction of the piston rod **62** pulls the rear portion **64** of the pivoting seatback portion **18** into an upright position. *Id.* col.3, l. 61-65. As Volvo points out, Figure 3 shows that the downward projection **88** of the pivoting seatback portion **18** contracts the contracting piston **56** to the point that seatback

portion **18** may pivot back "into a portion of said adult seat to form part of a fully contoured adult seat," as required by the claim. *Id.* col.4, l.40-42. Figure 3 also demonstrates how bushings **84** and **90**, and bolts **86** and **92** hold the contracting piston in place (thereby permitting the retraction to occur), and bushing **96** and bolt **98** pivotally connect the seat back portion to the frame to aid the retraction. *Id.* fig. 3. In short, the specification directly corresponds with this structural definition in order to accomplish the claimed function.<sup>9</sup>

Summary

Term	Function	Structure
"retracting means for automatically retracting said child safety seat into a portion of said adult seat to form part of a fully contoured adult seat when said child is not located in said child safety seat."	"automatically retracting said child safety seat into a portion of said adult seat to form part of a fully contoured adult seat when said child is not located in said child safety seat."	Contracting piston <b>56</b> , including the forward portion <b>58</b> , rear portion <b>60</b> , and piston rod <b>62</b> ; pivoting back portion <b>18</b> , including rear portion <b>64</b> , bushing <b>84</b> , bolt <b>86</b> , downward projection

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<sup>9</sup> Lugus's proposed structure includes contracting piston **52** like Volvo, but Lugus contends that the contracting piston is activated after being released by handle **52**, spring **50**, and fastener **40**. Adopting this proposed construction overlooks the actual function of the retracting means. As described at oral argument, the following hypothetical demonstrates the inadequacy of this proposed structure: Picture an adult user biasing seatback **18** into the child seat position, but without placing the child in the seat, elected to not use the child seat setting. As a result, the adult user would not have engaged fastener **40**, and spring **50**. Upon removing the pressure of the adult user's hand, the seat would pivot back into a portion of said adult seat, without the adult user ever engaging T-shaped handle **52**. Given that the Court must only include structure that directly corresponds with the stated function, the inclusion of T-shaped handle **52** would be inapposite in this § 112(f) construction.

	<p>-“automatically” is construed as having its plain and ordinary meaning</p> <p>-“when” is construed as “in the event that”</p>	<p><b>88</b>, bushing <b>90</b>, and bolt <b>92</b>; seat frame <b>94</b>; bushing <b>96</b>; and bolt <b>98</b>, such that the bottom surface of the pivoting back portion <b>18</b> forms a fully contoured adult seat in the raised position and the top surface of the pivoting back portion <b>18</b> can form a seat portion of a child safety seat.</p>
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**C. “Extension means for permitting the child safety seat to be extended to be used by a child.”**

The parties agree that this term, a portion of the first dependent claim, is also subject to the means-plus-function structure of § 112(f), and the Court agrees. *See Rembrandt Data Techs.*, 641 F.3d at 1340-41 (applying presumption that claim limitation containing the word “means” and reciting function is drafted in accordance with § 112(f)). In their briefing, Lugas and Volvo propose the same functional language, but identify disparate structures in their proposed constructions of this means-plus-function term.<sup>10</sup> The Court reviews the proposed function before determining the corresponding structure.

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<sup>10</sup> The Court acknowledges that Lugas’s Claim Construction Brief initially contained proposed functional language with reference to seat belts. As Lugas highlighted in their responsive brief, reference to seat belts in the proposed functional language was in error, and the Court disregards any dispute regarding the functional language related to Lugas’s original inclusion of the seat belt language.

The Court will adopt the parties' proposed function: "for permitting the child safety seat to be extended to be used by a child." This construction follows directly from the claim language, which reads in full: "extension means for permitting the child safety seat to be extended to be used by a child." '926 patent col.4, l.46-48. Because the function is explicitly recited in the claim language, the Court will adopt the parties' proposed language. See *Micro Chem.*, 194 F.3d at 1258 ("The statute [§ 112(f)] does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim.").

Volvo and Lugus directly dispute the corresponding structure of this function. Volvo's proposed structure includes the pivoting back portion **18**, seat frame **94**, bushing **96**, and bolt **98**. In Volvo's view, these structures are necessary for extending the child seat from its undeployed position (as an adult seat) to its deployed position for child use. Volvo contends that the '926 patent explains that this extension process is a manual operation; specifically, "[t]he seat **12** or **14** has a pivoting back portion **18** that, as illustrated for the seat **12**, can be manually pulled forward and downward . . . ." '926 Patent col.2, l.60-63. In other words, the extension process requires the back portion **18** because this structure is the actual extension referred to by the '926 patent. In

addition, seat frame **94** is "pivotally connected" to the seat back portion **18**, permitting it to undertake the extension described in the function. *Id.* col.2, l.57-59. Finally, bushing **96** and bolt **98** are necessary structures because, as the '926 patent explains, "[t]he seat back portion **18** is pivotally connected to the seat frame **94** through a bushing **96** and an associated bolt **98**." *Id.*

Lugus proposes an entirely different structure corresponding to the functional language. Lugus asserts that the necessary structure to accomplish the extension means includes just slot **38**, and lower end portions **34** and **36** that allow the child safety seat to be used by the child. Lugus asserts this position is borne out in the '926 patent, which explains: "As also illustrated in FIG. 1, the lower end portions **34** and **36** of the belts **24** and **26** slide through a slot **38** if a fastener **40**. This fastener **40** fits into a slot **42** in the seat back portion **18** when the seat back portion is in its downward rotational position." *Id.* col.2, l.9-11. In other words, Lugus's corresponding structure focuses on the extension of the safety belts. Lugus maintains that Volvo's structure, if adopted, would be repetitive of the corresponding structure in independent Claim 1, and that the dependent claim focuses instead on the extension of the safety belt.

Here, the Court finds that Volvo's proposed structure, though covering some of the same structural elements identified in claim 1, directly corresponds with the functional language identified by the parties. Dependent claim 2 explicitly states that "said child safety seat also has extension means for permitting the child safety seat to be extended to be used by a child." *Id.* col.4, l.45-47. However, the structure that accomplishes this extension is not related to the seat belt - rather, the structure must be related to the child safety seat, given the claim language quoted above. See *Texas Digital Sys., Inc.*, 308 F.3d at 1208 (quoting *Braun*, 124 F.3d at 1424) ("Structure disclosed in the specification is 'corresponding' structure only if the specification . . . clearly links or associates that structure to the function recited in the claim."). The structures that correspond to the child safety seat, and its extension so as to be extended for use by a child, are the pivoting back portion **18**, seat frame **94**, bushing **96**, and bolt **98**. The Court therefore adopts Volvo's proposed structure.

Summary

Term	Function	Structure
"extension means for permitting the child safety seat to be extended to be used by a child."	"for permitting the child safety seat to be extended to be used by a child."	Pivoting back portion <b>18</b> , seat frame <b>94</b> , bushing <b>96</b> , and bolt <b>98</b> .

**D. "Latch means associated with said safety straps for securing a child in said child safety seat."**

The parties agree that this term, a portion of a dependent claim, is also subject to the means-plus-function structure of § 112(f), and the Court agrees. *See Rembrandt Data Techs.*, 641 F.3d at 1340-41. Following briefing and oral argument, Lugus consents to adoption of Volvo's proposed function for claim construction purposes, leaving just the corresponding structure in dispute. The Court first reviews the agreed-upon function before adjudicating the parties' dispute over its corresponding structure.

The Court adopts Volvo's proposed construction of the function: latching the safety straps for securing a child in said child safety seat. The claim language recites a claim for "latch means associated with said safety straps for securing a child in said safety seat." '926 Patent col.4, l.53-54. The construction of the functional language therefore incorporates the claim language by clarifying this claim language; specifically, the latch means physically latch the safety straps and secure a child in the safety seat, a construction that comports with the quoted claim language above.

In view of this function, the Court turns to identifying the corresponding structure that links to the function recited in the claim. *Texas Digital Sys.*, 308 F.3d at 1208. Lugus

contends that this structure simply includes the fastener marked **40**, most easily identified in Figure 2 of the '926 patent. Lugus further asserts that the operating mechanisms of the spring-loaded plunger **48** and the operating structure visible in Figure 2 are not part of the function of the latch. Lugus points to the Federal Circuit's directive that "[s]tructure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Texas Digital Sys.*, 308 F.3d at 1208 (quoting *Braun*, 124 F.3d at 1424). In addition, a district court "may not import functional limitations that are not recited in the claim, or structural limitations from the written description that are unnecessary to perform the claimed function." *Welker Bearing Co. v. PHD, Inc.*, 550 F.3d 1090, 1098 (Fed. Cir. 2008) (quoting *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001)). As a result, Lugus contends that simply the fastener is linked directly to the identified function, and no additional pieces are required to accomplish the latching the safety straps for securing a child in said child safety seat.

Volvo rejects Lugus's contention that the corresponding structure consists of only fastener **40**. In Volvo's view, the fastener alone simply holds two ends of the safety harness together, a point borne out in the '926 patent language. See

'926 Patent col.3, l.9-11 ("[T]he lower end portions **34** and **36** of the belts **24** and **26** slide through a slot **38** in fastener **40**.").

Instead, Volvo proposes that the necessary structure for securing a child in said safety seat requires the fastener **40**, as well as the other structures that allow the belt to actually latch so as to accomplish the identified function. These associated structures include the slot **44** that the fastener is placed into, as well as the spring-loaded plunger **48** and its projecting end portion **46**, in addition to the compressed coil spring **50**, tubular housing **78**, and circular collar **82**. Specifically, Figure 2 demonstrates that fastener **40** and the projecting end **46** are necessary because they create the interlock that latches the child safety belts to the child safety seat. In addition, the projecting end portion **46** must be included because it causes the spring-loaded plunger **48** to retract and compress the spring coil **50** when the fastener **40** exerts downward pressure on it. *Id.* col.3, l.41-45. Once fastener **40** is fully inserted, the compressed spring coil **50** and spring-loaded plunger **48** are necessary because they decompress. *Id.* col.3, l.41-50. Decompression of these two parts forces the projecting end **46** through slot **44** in the fastener, which is necessary to receive and lock the projecting end portion **46**. *Id.* col.3, l. 45-50. Tubular housing **78** and circular housing **82**

are also necessary to contain the spring coil **50**, controlling its motion when decompressing to force the end portion **46** into slot **44**. *Id.* col.3, 1.46-52.

Here, the Court must adopt Volvo's proposed structure. Though cognizant that the Court may not import functional limitations not included in the claim, adopting Lugus's proposed function would ignore necessary structure included in the '926 patent language that corresponds with the function. To secure a child in said child safety seat, the fastener must actually secure into the child safety seat, which the fastener **40** alone cannot do. Instead, the interlocking structure that Volvo identifies directly corresponds with the functional language concerning securing the child in the child safety seat. Though Lugus rejects that these interlocking portions have any relation to the function of the latch, such a view overlooks the full nature of the identified function, which requires actually securing the child in the seat, a task that cannot be accomplished without locking the latch into place.

Taking the full function into view, such interlocking is essential in order to accomplish actually securing the child in the child safety seat. Thus, the Court adopts Volvo's proposed structure: the fastener **40**, slot **44**, projecting end portion **46**, spring loaded plunger **48**, compressed coil spring **50**, tubular housing **78**, and circular collar **82**.

Summary

Term	Function	Structure
"latch means associated with said safety straps for securing a child in said child safety seat."	"latching the safety straps for securing a child in said child safety seat."	Fastener <b>40</b> , slot <b>44</b> , projecting end portion <b>46</b> , spring loaded plunger <b>48</b> , compressed coil spring <b>50</b> , tubular housing <b>78</b> , and circular collar <b>82</b>

**E. "Releasing means"**

The parties agree that the term "releasing means," a portion of a dependent claim, is also subject to the means-plus-function structure of § 112(f). As explained at oral argument and in briefing, Lugus consents to Volvo's proposed construction of both the function and structure of releasing means. The Court briefly recounts this function and structure.

As described in Volvo's brief, the term releasing means describes a function of "releasing the latch means." This is an appropriate articulation of the function in light of the '926 patent's language and the claim itself, which explains that "said latching means has associated releasing means." '926 Patent col.4, l.57-58. In other words, the language of the claim describes a function that disengages the latching means.

Though the parties initially contested the precise structure of this function, Lugus consented to Volvo's proposed structure in its responsive brief and again at oral argument.

To accomplish the function of releasing the latch means, the Court finds that both the T-shaped handle **52** and plunger **48** are required structures. As the patent explains, "The plunger **48** has a generally T-shaped handle **52** on its outer end that projects outward from the forward portion **54** of the seat and this permits the fastener **40** to be released when it is pulled manually outward to further compress the coil spring **50**." *Id.* col. 3, 1.17-21. The plunger must be compressed in order to compress the coil spring, which is part of the release as described above. As a result, both the T-shaped handle and the plunger are required structures to actually release the latch means and accomplish the function.

Summary

Term	Function	Structure
"releasing means"	"releasing the latch means"	T-shaped handle <b>52</b> , and plunger <b>48</b> .

**IV.**

For the reasons set forth above, the disputed claim terms will be construed as indicated. The Court provides a brief summary table on the next page for the convenience of the parties. An appropriate Order accompanies this Opinion.

Date: 5-20-14

s/ Joseph E. Irenas  
**JOSEPH E. IRENAS, S.U.S.D.J.**

Term	Function	Structure
<p>"retracting means for automatically retracting said child safety seat into a portion of said adult seat to form part of a fully contoured adult seat when said child is not located in said child safety seat."</p>	<p>"automatically retracting said child safety seat into a portion of said adult seat to form part of a fully contoured adult seat when said child is not located in said child safety seat."</p> <p>- "automatically" is construed as having its plain and ordinary meaning</p> <p>- "when" is construed as "in the event that"</p>	<p>Contracting piston <b>56</b>, including the forward portion <b>58</b>, rear portion <b>60</b>, and piston rod <b>62</b>;  pivoting back portion <b>18</b>, including rear portion <b>64</b>, bushing <b>84</b>, bolt <b>86</b>, downward projection <b>88</b>, bushing <b>90</b>, and bolt <b>92</b>;  seat frame <b>94</b>; bushing <b>96</b>; and bolt <b>98</b>, such that the bottom surface of the pivoting back portion <b>18</b> forms a fully contoured adult seat in the raised position and the top surface of the pivoting back portion <b>18</b> can form a seat portion of a child safety seat.</p>
<p>"extension means for permitting the child safety seat to be extended to be used by a child."</p>	<p>"for permitting the child safety seat to be extended to be used by a child."</p>	<p>Pivoting back portion <b>18</b>, seat frame <b>94</b>, bushing <b>96</b>, and bolt <b>98</b>.</p>
<p>"latch means associated with said safety straps for securing a child in said child safety seat."</p>	<p>"latching the safety straps for securing a child in said child safety seat."</p>	<p>Fastener <b>40</b>, slot <b>44</b>, projecting end portion <b>46</b>, spring loaded plunger <b>48</b>, compressed coil spring <b>50</b>, tubular housing <b>78</b>, and circular collar <b>82</b></p>
<p>"releasing means"</p>	<p>"releasing the latch means"</p>	<p>T-shaped handle <b>52</b>, and plunger <b>48</b>.</p>