

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

ULTRA-MEK, INC.,)	
)	
Plaintiff and)	
Counter-Defendant,)	
)	
v.)	1:18CV281
)	
UNITED FURNITURE INDUSTRIES,)	
INC., OISEYS INTERNATIONAL,)	
INC., MAN WAH HOLDINGS LTD.,)	
JIANGSU YULONG SMART)	
TECHNOLOGY CO., LTD.,)	
REMACRO MACHINERY)	
TECHNOLOGY CO., LTD., TAIZHOU)	
CHENGUANG VEHICLE CO., LTD.,)	
)	
Defendants and)	
Counter-Claimants.))	

MEMORANDUM OPINION AND ORDER

OSTEEN, JR., District Judge

Plaintiff Ultra-Mek, Inc., has sued Defendants for allegedly infringing two patents that cover reclining chairs with reciprocating capability. Defendants have answered the complaint and filed counterclaims: (1) requesting a declaratory judgment that their products do not infringe the subject patents, and (2) alleging that the subject patents are invalid. This court held a Markman hearing on August 14, 2019, and heard argument from the parties regarding construction of the four disputed claim terms in the subject patents. After considering

the arguments of counsel and the parties' claim construction briefs, this court construes the disputed terms as follows.

I. FACTUAL & PROCEDURAL BACKGROUND

Plaintiff Ultra-Mek, Inc. is the assignee and owner of two patents that each describe a reclining chair with reciprocating capability. (First Amended Complaint ("Am. Compl.") (Doc. 31) ¶¶ 22-25.) Both patents were invented by D. Stephen Hoffman and Marcus Murphy. (Id. ¶¶ 23-34) U.S. Patent Number 8,016,348 (the "'348 patent") was filed on July 24, 2009 and issued on September 13, 2011. (See Doc. 31-1.) U.S. Patent Number 8,297,693 (the "'693 patent") was filed on September 9, 2011 and issued on October 30, 2012. (See Doc. 31-2.) The '693 patent is a continuation of the '348 patent, and the parties agree that the patents are generally identical in nature and scope. (See Defs.' Opening Claim Constr. Br. ("Defs.' Opening Br.") (Doc. 92) at 13¹; Pl.'s Corr. Opening Claim Constr. Br. ("Pl.'s Opening Br.") (Doc. 94) at 6.)

Plaintiff alleges that Defendants are producing and selling seating units that infringe the relevant patents without Plaintiff's permission. (Am. Compl. (Doc. 31) ¶ 26.) Plaintiff

¹ All citations in this Memorandum Opinion and Order to documents filed with the court refer to the page numbers located at the bottom right-hand corner of the documents as they appear on CM/ECF.

further alleges that this infringement has continued despite Defendants' knowledge of the patents and that certain Defendants have posted YouTube videos that demonstrate how to construct chairs using patented mechanisms. (Id. ¶¶ 28, 31, 34.) Finally, Plaintiff alleges that certain Defendants violated a permanent injunction issued in a prior case in this district by importing and selling recliners covered by that injunction and breached the settlement agreement in that case. (Id. ¶¶ 41-47, 66-67.) Defendants answered the Amended Complaint, denied that their products infringe the subject patents, and brought counterclaims against Plaintiff. (See generally Docs. 38, 39.)

Plaintiff moved for claim construction of certain disputed terms in the subject patents, (Doc. 91), and the parties submitted a consent motion for a claim construction, or Markman, hearing, (see Doc. 90.) This court held a Markman hearing on August 14, 2019. (See Minute Entry 08/14/2019.)

II. LEGAL FRAMEWORK

In Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996) ("Markman II"), the Supreme Court clarified which issues in a patent trial are properly reserved for the jury, and which are questions of law to be determined by the court. Specifically, the Court held that interpretation of language in patent claims "is an issue for the judge, not the jury[.]" Id.

at 391. The Federal Circuit has provided further guidance on how to interpret patent claims, stating that, in general, courts are to give the words of a claim "their ordinary and customary meaning" as understood by "a person of ordinary skill in the art in question at the time of the invention[.]" Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (citations omitted).

A. Types of Evidence

When construing claim terms, courts are directed to consult several specific types of evidence to discern what a person of ordinary skill in the art would understand the term to mean.

Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to "those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean." Those sources include "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art."

Id. at 1314 (citations omitted).

First, "the claims themselves provide substantial guidance as to the meaning of particular claim terms." Id. (citation omitted). "To begin with, the context in which a term is used in the asserted claim can be highly instructive." Id. Federal Circuit case law "provide[s] numerous . . . examples in which

the use of a term within the claim provides a firm basis for construing the term." Id. (citations omitted).

Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term. Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims. Differences among claims can also be a useful guide in understanding the meaning of particular claim terms. For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.

Id. at 1314-15 (citations omitted). "The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history."

Thorner v. Sony Comput. Entm't Am. LLC, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citation omitted).

The second type of evidence the court should consider is the specification, which "contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention." See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996) ("Markman I"); see also Phillips, 415 F.3d at 1315. "Claims must be read in view of the specification, of which they are a part." Markman I, 52 F.3d at 979 (citations omitted). The claims define the invention, but "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." Phillips, 415 F.3d at 1315 (citation and internal punctuation omitted). "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 I, 52 F.3d at 979 (citation omitted). "[A] patentee is free to be his own lexicographer[, but] . . . any special definition given to a word must be clearly defined in the specification." Id. at 980 (citations omitted). "[C]laims are not to be interpreted by adding limitations appearing only in the specification. . . . [P]articular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." Electro Med. Sys., S.A. v. Cooper Life Scis., Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994) (citations omitted). A limitation from the specification should only be read into the claims when the specification requires that limitation. See id.

The third type of evidence that a court should consider is the patent's prosecution history.² See Phillips, 415 F.3d at 1317; see also Markman I, 52 F.3d at 980; Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). "This undisputed public record of proceedings in the Patent and Trademark Office is of primary significance in understanding the claims." Markman I, 52 F.3d at 980 (citation and internal punctuation omitted). "The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution. Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) (citations omitted).

There are two relevant exceptions to the general rule that claim terms "are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art[.]" Thorner, 669 F.3d at 1365 (citation omitted).

First, the claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed

² Here, the parties have neither referenced nor relied upon the prosecution history of either subject patent in their claim construction briefing. Therefore, this court finds that the prosecution history is not relevant to interpreting the disputed claim terms and will not use the prosecution history in its analysis.

claim term in either the specification or prosecution history. Second, a claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention.

CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366-67 (Fed. Cir. 2002) (citations omitted); see also Thorner, 669 F.3d at 1365.

The redefinition of a claim term must be clear "so as to put one reasonably skilled in the art on notice that the patentee intended to so redefine the claim term." Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001) (citations omitted). However, redefinition need not be explicit. Id. "[T]he specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents." Id. (citation and internal punctuation omitted); see also Trs. of Columbia Univ. v. Symantec Corp., 811 F.3d 1359, 1364 (Fed. Cir. 2016).

"The party seeking to invoke [the] prosecution history disclaimer bears the burden of proving the existence of a clear and unmistakable disclaimer that would have been evident to one skilled in the art." Trivascular, Inc. v. Samuels, 812 F.3d 1056, 1063-64 (Fed. Cir. 2016) (internal punctuation omitted);

see also Omega Eng'g, Inc., v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003) (stating that a disclaimer occurs where the "patentee has unequivocally disavowed a certain meaning to obtain his patent"). The disavowal must be clear and may not be "too vague or ambiguous[.]" Omega Eng'g, 334 F.3d at 1325 (citation omitted).

Evidence from sources other than the claims, the specification, and the prosecution history is extrinsic and generally should be relied upon only when the intrinsic evidence fails to resolve any ambiguity in a disputed term. See Vitronics, 90 F.3d at 1583; see also Phillips, 415 F.3d at 1318-19. Extrinsic evidence is subject to limitations because it is inherently less reliable:

First, extrinsic evidence by definition is not part of the patent and does not have the specification's virtue of being created at the time of patent prosecution for the purpose of explaining the patent's scope and meaning. Second, while claims are construed as they would be understood by a hypothetical person of skill in the art, extrinsic publications may not be written by or for skilled artisans and therefore may not reflect the understanding of a skilled artisan in the field of the patent. Third, extrinsic evidence consisting of expert reports and testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence. . . . Fourth, there is a virtually unbounded universe of potential extrinsic evidence of some marginal relevance that could be brought to bear on any claim construction question. . . . Finally, undue reliance on extrinsic

evidence poses the risk that it will be used to change the meaning of claims in derogation of the "indisputable public records consisting of the claims, the specification and the prosecution history," thereby undermining the public notice function of patents.

Phillips, 415 F.3d at 1318-19 (citations omitted).

Extrinsic evidence includes "expert and inventor testimony, dictionaries, and learned treatises." Markman I, 52 F.3d at 980. A court may use extrinsic evidence to aid its understanding of a patent, but "not for the purpose of varying or contradicting the terms of the claims." Id. at 981 (citations omitted).

Accordingly, the Federal Circuit has stated that:

expert testimony, whether it be of an attorney, a technical expert, or the inventor, on the proper construction of a disputed claim term . . . may only be relied upon if the patent documents, taken as a whole, are insufficient to enable the court to construe disputed claim terms.

Vitronics, 90 F.3d at 1585 (emphasis omitted). In such "rare instances," prior art documents and dictionaries are preferable to expert testimony because they are objective, reliable, and "accessible to the public in advance of litigation." Id.

B. Other Interpretive Issues

1. Lay Terms

While court construction of lay terms might intrude into the province of the jury, see Markman II, 517 U.S. at 384, the Federal Circuit has directed district courts to interpret any

claim term, including a commonly-used lay term, whose meaning is in legitimate dispute. See O2 Micro Int'l v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1362 (Fed. Cir. 2008). When a term has an ordinary, lay meaning that is not legitimately in dispute, no construction is required and the court may submit the claims to a jury. See, e.g., Biotec Biologische Naturverpackungen GmbH & Co. v. Biocorp, Inc., 249 F.3d 1341, 1349 (Fed. Cir. 2001). However, a term may have more than one "ordinary meaning" and, where the parties dispute which "lay" meaning should govern, the court has a duty to construe the disputed term. See Eon Corp. IP Holdings, LLC v. Silver Spring Networks, Inc., 815 F.3d 1314, 1320 (Fed. Cir. 2016), ____ U.S. ____, 137 S. Ct. 640 (2017).

2. Terms of Degree

Terms of degree are problematic because they may be indefinite for failing to "particularly . . . and distinctly" describe the invention. 35 U.S.C. § 112, ¶ 2; see also Seattle Box Co. v. Indus. Crating & Packing, Inc., 731 F.2d 818, 826 (Fed. Cir. 1984). A term is sufficiently definite when it "inform[s] those skilled in the art about the scope of the invention with reasonable certainty." Nautilus, Inc. v. Biosig Instruments, Inc., 572 U.S. 898, 910 (2014). Terms of degree are not "inherently indefinite" and the inventor need not describe a term of degree with "mathematical precision." Sonix Tech. Co. v.

Publ'ns Int'l, Ltd., 844 F.3d 1370, 1377 (Fed. Cir. 2017). "When a word of degree is used the district court must determine whether the patent's specification provides some standard for measuring that degree." Seattle Box, 731 F.2d at 826. The party arguing that a certain claim term is indefinite bears the burden of showing "by clear and convincing evidence" that those skilled in the art would not understand the term's scope. Teva Pharms. USA, Inc., v. Sandoz, Inc., 789 F.3d 1335, 1345 (Fed. Cir. 2015).

For commonplace terms that might be terms of degree, the Federal Circuit has directed courts to look to the intrinsic evidence – the claim terms, specification, and prosecution history – for examples that might give meaning to and define the scope of the terms. Sonix Tech., 844 F.3d at 1377 (finding that a term of degree was not indefinite where "the intrinsic evidence provided guidance as to the scope of the claims, including, inter alia, examples of noninterfering structures and criteria for their selection"); see also One-E-Way, Inc. v. Int'l Trade Comm'n, 859 F.3d 1059, 1063, 1066 (Fed. Cir. 2017); Enzo Biochem, Inc. v. Applera Corp., 599 F.3d 1325, 1334–35 (Fed. Cir. 2010). Terms of degree that fail to provide "an objective baseline through which to interpret the claims" are generally void for indefiniteness. Sonix Tech., 844 F.3d at

1377-78 (describing the Datamize and Interval Licensing decisions, where the Federal Circuit invalidated terms of degree for indefiniteness); Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1350-55 (Fed. Cir. 2005) ("Simply put, the definition of 'aesthetically pleasing' cannot depend on an undefined standard."), abrogated by Nautilus, Inc. v. Biosig Instruments, Inc., 572 U.S. 898, 910 (2014).³

While the Federal Circuit had previously held that any term "amenable to construction" through intrinsic evidence was not indefinite, see, e.g., Honeywell Int'l, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332, 1338 (Fed. Cir. 2003), the Nautilus decision explicitly rejected that standard, see Nautilus, 572 U.S. at 912 & n.9. Rather, "[i]n the face of an allegation of indefiniteness, general principles of claim construction apply." Datamize, 417 F.3d at 1348. The court should not consider the term's amenability to construction on the initial pass; rather, if the court finds the disputed term is not indefinite, it should then construe that term in accordance with its ordinary meaning to a person skilled in the art.

³ Based on Sonix Tech.'s discussion of pre-Nautilus case law, see 844 F.3d at 1377-78, this court concludes that the Supreme Court's decision in Nautilus altered the legal standard for indefiniteness but not the process of determining whether a term is "objectively defined" or limited by intrinsic evidence.

3. Technical Terms

The court must construe any genuinely-disputed technical terms. However, some technical terms have well-established meanings, more akin to a glossary definition, and might not require construction in the same way as non-technical terms. “[A] general dictionary definition is secondary to the specific meaning of a technical term as it is used and understood in a particular technical field.” Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1580 (Fed. Cir. 1996). “[I]n determining the ordinary meaning of a technical term, courts are free to consult scientific dictionaries and technical treatises at any time.” Dow Chem. Co. v. Sumitomo Chem. Co., 257 F.3d 1364, 1373 (Fed. Cir. 2001).

4. Means-Plus-Function Terms

“A means-plus-function limitation recites a function to be performed rather than definite structure or materials for performing that function.” Lockheed Martin Corp. v. Space Sys./Loral, Inc., 324 F.3d 1308, 1318 (Fed. Cir. 2003). A means-plus-function statement in a patent is “construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” 35 U.S.C. § 112, ¶ 6. “Once a court establishes that a means-plus-function limitation is at issue, it must identify and construe that limitation,

thereby determining what the claimed function is, and what structures disclosed in the written description correspond to the 'means' for performing that function." Lockheed Martin, 324 F.3d at 1319.⁴

The first step to the means-plus-function analysis is to determine whether § 112, ¶ 6 applies to the term at issue. When a claim term uses the word "means" to signal a component's function, there is a rebuttable (but not a "strong") presumption that the term is a means-plus-function phrase under § 112, ¶ 6. Williamson v. Citrix Online, LLC, 792 F.3d 1339, 1348-49 (Fed. Cir. 2015). "[T]he presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." Id. (internal quotation marks omitted). The Federal Circuit has explained that "[g]eneric terms such as 'mechanism,' 'element,' 'device,' and other nonce words that reflect nothing more than verbal constructs may be used in a claim in a manner that is tantamount to using the word 'means'

⁴ See also Chi. Bd. Options Exch., Inc. v. Int'l Sec. Exch., LLC, 677 F.3d 1361, 1367 (Fed. Cir. 2012) ("Construction of a means-plus-function limitation involves two steps. First, the court must identify the claimed function. Second, the court must identify the corresponding structure in the specification that performs the recited function.").

. . . and therefore may invoke § 112, para. 6." Id. at 1350.

To determine whether a term qualifies for § 112, ¶ 6, the court must "ask if the claim language, read in light of the specification, recites sufficiently definite structure." Robert Bosch, LLC v. Snap-On Inc., 769 F.3d 1094, 1099 (Fed. Cir. 2014); see also Williamson, 792 F.3d at 1349. While a specification that describes only how a component part interacts with other parts of the invention may be sufficient to impart structure, the specification must limit the claim term to a specific structure or structures. See Inventio AG v. ThyssenKrupp Elevator Ams. Corp., 649 F.3d 1350, 1358-59 (Fed. Cir. 2011) ("The written descriptions also show how the elements are connected together and to the elevator control and computing unit components of the elevator system."), overruled by⁵ Williamson, 792 F.3d 1339 (Fed. Cir. 2015); see also Media Rights Techs., Inc. v. Capital One Fin. Corp., 800 F.3d 1366, 1372-73 (Fed. Cir. 2015) (applying § 112, ¶ 6 when the only structural description in the specification was but one example of the disputed claim term).

⁵ As the Federal Circuit observed in Media Rights, Inventio AG applied the now-defunct "strong" presumption against applying § 112, ¶ 6 when the word "means" is not used. Media Rights, 800 F.3d at 1373.

The rebuttable presumption created when the word "means" is not used in the disputed claim term places the burden on the party invoking § 112, ¶ 6 to demonstrate, through either intrinsic or extrinsic evidence, that the claim term itself (read in light of the specification) fails to recite sufficiently definite structure. See Diebold Nixdorf, Inc. v. Int'l Trade Comm'n, 899 F.3d 1291, 1297-98 (Fed. Cir. 2018) (concluding, based on arguments regarding the claim language itself, that the party invoking § 112, ¶ 6 had demonstrated through intrinsic evidence that it was proper to apply that paragraph); Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d 1311, 1319-20 (Fed. Cir. 2004) ("The district court should have imposed on Maxim, who advocated a construction under § 112 ¶ 6, the burden of overcoming the presumption by demonstrating that the claim fails to recite sufficiently definite structure or recites a function without reciting sufficient structure for performing that function.") (internal quotation marks and citation omitted). If that burden is satisfied, then the claim should be construed as a means-plus-function phrase. See Williamson, 792 F.3d at 1351.

Once the court has determined that § 112, ¶ 6 applies, it next examines "whether the specification discloses sufficient structure that corresponds to the claimed function." Williamson,

792 F.3d at 1351. This is a two-step process: first, “[t]he court must first identify the claimed function[; second,] . . . the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function.” Id. “It is well-established that the specification must be read as a whole to determine the structure capable of performing the claimed function.” Chi. Bd. Options Exch., 677 F.3d at 1367 (internal quotation marks and citations omitted). As the Federal Circuit has explained, an included structure is corresponding “only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.” B. Braun Med., Inc. v. Abbott Labs., 124 F.3d 1419, 1424 (Fed. Cir. 1997).

III. DISPUTED PATENT TERMS

Construction might not be required if there is no genuine dispute about the term, if a non-technical term has a special meaning ascertainable from the patent, if the term was subject to a prior Markman hearing deserving of deference⁶, or if the

⁶ Plaintiff sued one of the Defendants in this matter in a prior case in the Middle District of North Carolina, Case No. 1:16-cv-00041. Plaintiff argued in that case that Defendant Man Wah (USA), Inc., had infringed the '348 and '693 patents, among others, and the parties in that case submitted some of the same terms for claim construction. However, the parties settled that case prior to the claim construction hearing, the claims were dismissed, and no Markman order was issued.

term is not amenable to construction. See Patent Case Mgmt. Judicial Guide (3d ed. 2016) at 5-44. As a preliminary matter, all claim terms appear to be legitimately in dispute.

The following chart sets forth the disputed terms and each party's preferred construction. The parties notified this court prior to the claim construction hearing, and confirmed at the hearing, that they had reached agreement on the term "a near over-center arrangement that locks the ottoman in position." Therefore, the court will not address that term in its analysis.

Term (Claim #s)	Plaintiff's Construction	Defendants' Construction
"locking mechanism" '348 patent: 3 '693 patent: 3	<u>Plain meaning:</u> a mechanism that helps to hold or prevent movement	<u>Means of achieving a specific function</u> (structure implied), <u>see</u> 35 U.S.C. § 112, ¶ 6: <u>Function:</u> allowing the seating unit to reciprocate while in the upright position but preventing reciprocating of the seating unit while in the TV and fully reclined positions <u>Structure:</u> A "drive" link (i.e., a straight link that slopes downwardly and slightly forwardly from a pivot and is pivotally interconnected with a downwardly-extending projection of a hook-shaped locking link at a pivot) and a locking link, as well as equivalents thereof

Term (Claim #s)	Plaintiff's Construction	Defendants' Construction
<p>"longitudinal path"</p> <p>"longitudinally-directed"</p> <p>"longitudinally-directed force"</p> <p>'348 patent: 1, 13</p> <p>'693 patent: 1, 12</p>	<p><u>Plain meaning:</u></p> <p><u>Longitudinal:</u> of or relating to the general dimension of the front to the back of the seating unit</p> <p><u>Longitudinal path:</u> a path extending generally from the front to the back of the seating unit</p> <p><u>Longitudinally-directed:</u> in the direction generally from the front to back of the seating unit</p> <p><u>Longitudinally-directed force:</u> a force directed generally from the front to back of the seating unit</p>	<p><u>Longitudinal:</u> a direction parallel with the underlying floor, extending from the backrest toward the seat and vice versa</p> <p><u>Longitudinal path:</u> a path parallel with the underlying floor, extending from the backrest toward the seat and vice versa</p> <p><u>Longitudinally-directed:</u> a direction parallel with the underlying floor, extending from the front to the back of the seating unit and vice versa</p> <p><u>Longitudinally-directed force:</u> a force in a direction parallel with the underlying floor, extending from the backrest toward the seat and vice versa</p>
<p>"reciprocate"</p> <p>"reciprocating"</p> <p>'348 patent: 1, 3, 13</p> <p>'693 patent: 1, 3, 12, 14</p>	<p><u>Plain meaning:</u> to move back and forth alternately</p>	<p>to move forward and backward alternately</p>

Term (Claim #s)	Plaintiff's Construction	Defendants' Construction
<p>"reciprocating mechanism"</p> <p>'348 patent: 1, 5, 13; '693 patent: 1, 4, 7, 12</p>	<p><u>Plain meaning:</u> a mechanism that moves back and forth alternately</p>	<p>- <u>Indefinite</u> under 35 U.S.C. § 112, ¶ 2, for failing to define a "rocking unit"; OR</p> <p>- <u>Means of achieving a specific function</u> (structure implied), <u>see</u> 35 U.S.C. § 112, ¶ 6:</p> <p><u>Function:</u> "to enable the seat, backrest and reclining mechanism to reciprocate relative to the base unit along a longitudinal path responsive to a longitudinally-directed force"; "to enable the seat, backrest and reclining mechanism to experience a longitudinally-directed reciprocating motion relative to the base unit</p> <p><u>Structure:</u> a "gliding mechanism" (glide foundation plates, a front glide link, and a rear glide link); as well as equivalents thereof</p>
<p>"the backrest and the seat substantially maintain the same relationship as they have in the upright position"</p> <p>'348 patent: 1, 13 '693 patent: 1, 12</p>	<p>in the intermediate TV position, the backrest is still generally vertically disposed or close to it, and the seat is still generally horizontally disposed or close to it</p>	<p>in the intermediate TV position, the backrest is still generally vertically disposed or close to it, and the seat is still generally horizontally disposed or close to it and there is essentially the same angle between the backrest and the seat with the seating unit in the TV position as compared with the seating unit in the upright position</p>

(See Side-by-Side Listing of Proposed Constructions (“Side-by-Side Listing”) (Doc. 93-1).)

IV. CLAIM CONSTRUCTION

A. “locking mechanism”

Plaintiff contends that this term should be given its plain meaning of “a mechanism that helps to hold or prevent movement.” (Side-by-Side Listing (Doc. 93-1) at 2.) Defendants, however, argue that “locking mechanism” is a means-plus-function term that should be construed under 35 U.S.C. § 112, ¶ 6 to cover two specific structures: a drive link and a locking link. (See id.)

Plaintiff’s argument here is simple: because the term “‘locking mechanism’ connotes sufficient structure and is definite to a person of ordinary skill in the art,” it should be construed according to its ordinary meaning and should not be treated as a means-plus-function term. (Pl.’s Opening Br. (Doc. 94) at 21-22.) Specifically, Plaintiff points to the detailed description of the locking mechanism that appears in each patent’s specification. (See, e.g., ‘348 Patent (Doc. 31-1) at 6:33-41.)

Defendants do not dispute the ordinary or plain meaning of “locking mechanism.” Rather, Defendants’ argument proceeds in two parts. First, Defendants contend that the phrase “locking mechanism that allows the seating unit to reciprocate . . .” in

Claim 3 of each patent is a means-plus-function term because it is a nonce phrase expressed in terms of the component's function and fails to specify a sufficiently definite structure that accomplishes that function. (Defs.' Opening Br. (Doc. 92) at 18-19.) Second, Defendants argue that the specification clearly sets forth a corresponding function for the term "locking mechanism," as follows:

A locking mechanism is attached to the reclining mechanism to prevent gliding of the chair when it is in the TV or fully reclined positions. The locking mechanism includes a drive link that is pivotally interconnected at one end to the sequencer plate at a pivot. The drive link is a straight link that slopes downwardly and slightly forwardly from the pivot. The opposite end of the drive link is pivotally interconnected with a downwardly-extending projection of a hook-shaped locking link at a pivot. The locking link is attached to the mounting bracket at the pivot.

(See '348 patent (Doc. 31-1) at 6:31-41.)

First, the court must determine whether "locking mechanism" can properly be construed under 35 U.S.C. § 112, ¶ 6 as a means-plus function term. Plaintiff and Defendants each rely on the Williamson case to argue whether "locking mechanism" should be given means-plus-function treatment. See Williamson, 792 F.3d at 1339. In Williamson, the Federal Circuit held that the standard for whether patent language falls outside the scope of 35 U.S.C. § 112, ¶ 6 is "whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently

definite meaning as the name for structure." Id. at 1349. The court further overruled its own precedent and held that omitting the word "means" establishes only a rebuttable presumption that § 112, ¶ 6 does not apply; "the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." Id. (internal quotation marks omitted) (citing Watts v. XL Sys., Inc., 232 F.3d 877, 880 (Fed. Cir. 2000)).

The Williamson court confronted language very similar to the term "locking mechanism" here. The court looked to the entire claim passage ("distributed learning control module for receiving communications . . .") and made the following findings. First, the court found that "the word 'module' "does not provide any indication of structure because it sets forth the same black box recitation of structure for providing the same specified function as if the term 'means' had been used." See id. at 1350 ("Generic terms such as 'mechanism,' 'element,' 'device,' and other nonce words that reflect nothing more than verbal constructs may be used in a claim in a manner that is tantamount to using the word 'means.'"). Second, the court determined that "distributed learning control" did not by itself

"describe a sufficiently definite structure" to imbue the word "module" with a structural meaning. Id. at 1351. Third and finally, the court rejected expert testimony from the party seeking to use plain meaning, finding that "the fact that one of skill in the art could program a computer to perform the recited functions cannot create structure where none otherwise is disclosed." Id.

During oral argument, Plaintiff's counsel repeatedly asserted that Defendants bore the burden of proving mechanism is a nonce word and that a person of ordinary skill in the art would not understand the phrase mechanism to have a sufficiently definite meaning as the name of structure or a class of structures. (See Minute Entry 08/14/2019.) Plaintiff is correct that, where "means" is not used in the claim itself, the party invoking § 112, ¶ 6 bears the burden of proving that this paragraph should apply. See, e.g., Diebold, 899 F.3d at 1298. However, Plaintiff's counsel proceeded to argue that Defendants had failed to demonstrate application of § 112, ¶ 6 because Defendants did not provide any evidence or declaration or intrinsic evidence. (Minute Entry 08/14/2019.) Plaintiff further invoked the Zeroclick case to argue that Defendants had thus failed to meet their burden on this issue. Zeroclick, LLC v. Apple Inc., 891 F.3d 1003 (Fed. Cir. 2018).

In Zeroclick, the Federal Circuit held that the district court had erred because "the court's analysis removed the terms from their context, which otherwise strongly suggest[ed] the plain and ordinary meaning of the terms," and relied on arguments rather than evidence to find that § 112, ¶ 6 applied. Id. at 1007-08. The Federal Circuit did not, however, impose a requirement that the party invoking § 112, ¶ 6 submit any extrinsic evidence or rely on any evidence other than the words of the claim itself. Indeed, the Zeroclick court cited an earlier Federal Circuit decision for the proposition that the § 112, ¶ 6 "presumption[] can be rebutted if the evidence intrinsic to the patent and any relevant extrinsic evidence so warrant." Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 704 (Fed. Cir. 1998) (emphasis added); Zeroclick, 891 F.3d at 1007. In other words, while the court observed that extrinsic evidence might be helpful to a party invoking § 112, ¶ 6, it is by no means required and the plain language of the claim itself may be enough to invoke that paragraph.

Further, one of the supplementary cases submitted by Plaintiff, MTD Products Inc. v. Iancu, 933 F.3d 1336 (Fed. Cir. 2019), references extrinsic evidence only when introduced to prove that the contested term was in fact understood to have a

specific structural meaning by those skilled in the art. MTD accepts that the invoking party may rebut the § 112, ¶ 6 presumption by relying only upon the claim language itself and that, once the presumption is rebutted, the court moves on to the second step of the analysis and searches the specification for a limiting structural description. This court interprets the Zeroclick and MTD holdings to merely reaffirm that the invoking party may rely entirely on intrinsic evidence to rebut the § 112, ¶ 6 presumption, so long as claim language is read in the context of the specification; therefore, this court finds that Defendants' failure to submit extrinsic evidence is neither determinative of, nor directly relevant to, the means-plus-function inquiry.

The Williamson case supports applying a means-plus-function interpretation to the phrase "locking mechanism." The Federal Circuit expressly listed the word "mechanism" as one that "typically do[es] not connote sufficiently definite structure and therefore may invoke § 112 ¶ 6." Williamson, 792 F.3d at 1350. Further, Plaintiff's supporting case law is inapposite because Plaintiff attempts to rely (in part) on cases where the critical noun was substantially more definite in meaning than the word "mechanism." See Personalized Media, 161 F.3d at 705 (finding that the word "detector" was "not a generic structural

term such as . . . 'device'. . . [because it] had a well-known meaning to those of skill in the electrical arts connotative of structure, including a rectifier or demodulator").

Plaintiff's reliance on Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580 (Fed Cir. 1996), (see Pl.'s Resp. Claim Constr. Br. ("Pl.'s Resp. Br.") (Doc. 98) at 19, 24), is slightly more promising. The Federal Circuit found in that case that the term "detent mechanism" was "simply . . . a shorthand way of referring to each of the key structural elements of the invention" and thus outside the scope of § 112, ¶ 6. Greenberg, 91 F.3d at 1584. Greenberg was decided under a "regular," rebuttable presumption that the lack of the word "means" removes the language from the scope of § 112, ¶ 6, the same standard that now prevails after the Williamson decision. However, Greenberg is different from this case for several reasons.

First, Plaintiff relies solely on Patent No. 8,113,574 ("the '574 patent"),⁷ a patent not directly at issue in this case but incorporated by reference into the relevant patents, to

⁷ Plaintiff states that the '574 patent is "incorporated by reference to its application number." (Pl.'s Resp. Br. (Doc. 98) at 24.) Both the '348 and '693 patents incorporate by reference "U.S. patent application Ser. No. 12/276,559" to describe a "rocking unit" embodiment. (See '348 patent (Doc. 31-1) at 4:48-53; '693 patent (Doc. 31-2) at 4:52-57.) This application number was granted and is now U.S. patent number 8,113,574 (the "'574 patent"). (See Doc. 89-2 at 2.)

argue that the term "locking mechanism" is well-understood in trade usage. Plaintiff contends that, because the '574 patent also uses "locking mechanism" to refer to a similar contraption, this "supports a conclusion that a 'locking mechanism' is a type of device in the motion furniture art with a generally understood meaning." (Pl.'s Resp. Br. (Doc. 98) at 24.) But the '574 patent employs the same exact formulation as the two patents at issue here: it uses "locking mechanism" in the claim and then defines the term in the specification to "include[] a drive link that is pivotally interconnected at one end to the sequencer plate at a pivot" and interacts with a bracing link, wheel, pin and control link to lock the seating unit in place. (See '574 patent (Doc. 101-6) at 6:51-67.) If the term "locking mechanism" was widely understood within the industry to refer to a certain structure, then presumably it would not have been necessary to define the term with such detail in multiple patent specifications.

Second, the '574 patent does not show a general understanding by those skilled in the art. The '574 patent was authored by the same two inventors, suggesting only that these two individuals (rather than those skilled in the art as a group) have a certain understanding of the term "locking mechanism." Rather, the language here is more akin to those

cases where the Federal Circuit has found insufficient structural description and held that a term is subject to § 112, ¶ 6. See, e.g., Diebold, 899 F.3d at 1302 (“[N]either the Commission nor Hyosung point to documentary evidence that the term ‘cheque standby unit’ was used either in ‘common parlance’ or by skilled artisans in the pertinent field to designate structure.”); Advanced Ground Info. Sys., Inc. v. Life360, Inc., 830 F.3d 1341, 1347–48 (Fed. Cir. 2016) (“The term ‘symbol generator’ invokes the application of § 112, ¶ 6 because it fails to describe a sufficient structure and otherwise recites abstract elements ‘for’ causing actions.”).

Third, the Greenberg court placed heavy emphasis on the dictionary definition of “detent” to show a general understanding by those skilled in the art. See Greenberg, 91 F.3d at 1583 (“Dictionary definitions make clear that the noun ‘detent’ denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms.”). A dictionary published at the time the subject patents were approved confirms that “detent” has a specific, structural meaning within the mechanical field. See The American Heritage Dictionary 494 (5th ed. 2011) (defining “detent” as “[a] catch or lever that locks the movement of one part of a mechanism”). However, the same

dictionary defines "lock" and "locking" only in generic, functional terms, with a definition that could apply to many different structures not applicable to a reclining seating unit.⁸ See American Heritage Dictionary 1030 (defining "lock" as "[t]o fix in place so that movement or escape is impossible; hold fast").

Finally, Plaintiff identifies no structural limitation in either the claims or the specifications. This court must read the claim language in light of the specification to determine whether § 112, ¶ 6 applies. While "locking mechanism" is described in purely functional terms in the claim itself, the specification does set forth a structure. (See '348 patent (Doc. 31-1) at 6:31-41.) To avoid application of § 112, ¶ 6, the specifications must include a "structural limitation that might serve to cabin the scope of the functional term." Diebold, 899 F.3d at 1300-01 (emphasis added). But here, Plaintiff concedes

⁸ Plaintiff cites to a dictionary definition as extrinsic evidence to support its preferred construction of "locking mechanism." (See Doc. 89-3 at 5.) First, Plaintiff cites to a dictionary published in 1988. However, the Federal Circuit has endorsed the use of dictionaries "publicly available at the time the patent is issued." Texas Dig. Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202-03 (Fed. Cir. 2002). A dictionary published closer to the time the relevant patents were issued (2011-2012) is a better resource. Second, the definition that Plaintiff provides is insufficient to establish any kind of defined structure and thus cannot bring the claim term outside the scope of § 112, ¶ 6.

at the hearing on August 14 that the term locking mechanism is intended to be broad and that the structure in the specification is but one example of what's meant by locking mechanism. (See Minute Entry 08/14/2019.) Therefore, it is undisputed that the specifications do not include any structural limitation on the term "locking mechanism." A party cannot rely upon a mere illustrative example of one possible structure to avoid § 112, ¶ 6. See Williamson, 792 F.3d at 1347 (stating that Congress' purpose in enacting § 112, ¶ 6 was to "restrict[] the scope of coverage to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof"). When, as here, the patentee concedes that the identified structural description is "narrower" than the scope of the disputed term, the Federal Circuit has instructed that such a description is insufficient to impart structure. See Media Rights, 800 F.3d at 1372-73.

Plaintiff relies entirely on the argument that § 112, ¶ 6 does not apply. Having decided that the term "locking mechanism" should be construed under § 112, ¶ 6, the next step is to determine whether "the specification or prosecution history clearly links or associates that structure to the function

recited in the claim" such that it is corresponding.⁹ B. Braun Med., 124 F.3d at 1424. Defendants point to the structures described in 6:31-41 of the '348 patent specification and 6:34-44 of the '693 patent specification: namely, a drive link and a hook-shaped locking link. (See Docs. 31-1, 31-2.) The function of the "locking mechanism" stated in the claims is to "allow[] the seating unit to reciprocate while in the upright position but prevent[] reciprocating of the seating unit while in the TV and fully reclined positions." (E.g., '348 patent (Doc. 31-1) at 9:63-65.) The function identified in the specifications is "to prevent gliding of the chair when it is in the TV or fully reclined positions." (E.g., id. at 6:32-33.) These functions are substantially the same, because if the chair is prevented from gliding in the TV and fully reclined positions, it must be capable of gliding in its only other position (the upright position). And limiting the term "locking mechanism" to the specifications' stated structure accords with Congress' purpose in enacting § 112, ¶ 6. See Williamson, 792 F.3d at 1347.

⁹ While the specifications in this case do not contain sufficient structural limitations to avoid § 112, ¶ 6, this court still might be able to construe "locking mechanism" in a way that covers only a certain structure or structures (thus limiting its scope). If this is not possible, then the claim term is indefinite. See Robert Bosch, 769 F.3d at 1097-98.

Therefore, this court adopts Defendants' proposed construction and construes "locking mechanism" to mean:

a "drive" link (i.e., a straight link that slopes downwardly and slightly forwardly from a pivot and is pivotally interconnected with a downwardly-extending projection of a hook-shaped locking link at a pivot) and a locking link, as well as equivalents thereof, that accomplish the function of allowing the seating unit to reciprocate while in the upright position but preventing reciprocating of the seating unit while in the TV and fully reclined positions.

B. "reciprocate"; "reciprocating"; "reciprocating mechanism"

For the words "reciprocate" and "reciprocating," the parties dispute only whether these phrases should be defined as "back and forth" (as in, gliding or rocking) or "forward and backward" (as in, only gliding horizontally to the ground). (Side-by-Side Listing (Doc. 93-1) at 3-4.) For "reciprocating mechanism," Plaintiff asserts that the phrase can be interpreted according to its ordinary meaning, but Defendants again urge this court to construe the phrase under § 112, ¶ 6 as a means-plus-function term. (See id.)

1. "reciprocate" and "reciprocating"

Each patent states that it "relates . . . to seating units with rocking capability" and is motivated by a search "for alternatives to rocking chairs that can provide a similarly relaxing or repetitive motion." (See, e.g., '348 patent (Doc. 31-1) at 1:13-15; 1:28-30.) Further, each patent incorporates by

reference the '574 patent, which describes a "rocking unit . . . that provides reciprocating motion along a longitudinal path." (Id. at 4:48-53.)

First, Plaintiff asserts that construing "reciprocate" to cover only movement parallel to the floor "excludes specific embodiments described in the specification . . . [and] is inconsistent with well-established claim construction principles." (Pl.'s Opening Br. (Doc. 94) at 16 (footnote omitted).) Second, Plaintiff argues that, because the background to each patent describes seating units with both gliding and rocking capability and because certain dependent claims are limited by their terms to only gliding embodiments, (see, e.g., '348 patent (Doc. 31-1) at 10:7-8), the independent claims must cover both gliding and rocking. (See Pl.'s Resp. Br. (Doc. 98) at 15.) Defendants focus the majority of their argument on the term "reciprocating mechanism," which will be addressed in the next section. For the word "reciprocate," Defendants simply contend that their proposed construction will eliminate ambiguity and clarify that the patents refer only to a "gliding" motion. (Def.'s Opening Br. (Doc. 92) at 31.)

Patents are "normally [] not interpret[ed] . . . in a way that excludes embodiments disclosed in the specification," unless a specific embodiment is unambiguously disclaimed (either

in the patent itself or through prosecution). Oatey Co. v. IPS Corp., 514 F.3d 1271, 1276 (Fed. Cir. 2008); see also Vitronics, 90 F.3d at 1583 (requiring “highly persuasive evidentiary support” to adopt a construction that excludes a listed embodiment). Generally, limitations that apply to only certain claims in the patent suggest that the other claims are not so limited. See Symantec Corp., 811 F.3d at 1370. “[C]onstruing the independent claim to exclude material covered by the dependent claim would be inconsistent” because it would render the limitation redundant. Id.; see also Phillips, 415 F.3d at 1314-15 (“[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.”).

Here, the reference to “rocking” in both the background and the specification of each patent suggest that “rocking” is a covered embodiment of the invention. Further, the presence of a dependent claim limited to only “gliding” establishes a strong presumption that the other claims cover both gliding and rocking. Defendants have not met their burden of rebutting this presumption. First, there is nothing in the subject claims that suggests the claims specifically exclude a preferred embodiment; rather, the “reciprocating” claim terms appear in claim 1 and

claims 12 and 13 of each patent, which broadly describe the claimed invention by listing all components of the seating unit. If any claims are likely to cover all preferred embodiments, it is these three claims. Second, Defendants rely entirely on the argument that their preferred construction is clearer and eliminates ambiguity because it "us[es] words defined by the patents themselves, such as 'forwardly.'" (Defendants' Opening Br. (Doc. 92) at 31.) But the specification merely uses these words in other sections and never defines "reciprocate" to mean forwardly or backwardly. (See '348 patent (Doc. 31-1) at 2:23-31.) The inventors' decision to omit a specific, limited definition of "reciprocate" suggests that the term should be construed broadly.

It may be true that Defendants' preferred construction is clearer, but that does not mean that it is correct in light of the patent claims and specifications. The court may look only to "the rest of the intrinsic evidence . . . to resolv[e], if possible, the lack of clarity." Interactive Gift Express, Inc. v. CompuServe Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001). Defendants do not identify any intrinsic evidence that the inventors intended to exclude "rocking" from the definition of "reciprocate" or intended to adopt Defendants' preferred definition of the term; rather, Defendants rely on a dictionary

definition from 2003 that defines "reciprocate" as "to move forward and backward alternately." (See Side-by-Side Listing (Doc. 93-3) at 5.) However, at least one contemporaneous dictionary defines "reciprocate" to include all back and forth movement, see American Heritage Dictionary at 1468), and "the intrinsic record must be consulted to determine which of the different possible dictionary meanings is most consistent with the use of the term in question by the inventor." Phillips, 415 F.3d at 1319. Therefore, this court will adopt Plaintiff's preferred construction of "reciprocate" and "reciprocating," and construe these terms to mean "to move back and forth alternately."

2. "reciprocating mechanism"

Plaintiff asserts that "[t]he language of the claims provides sufficient disclosure of how the 'reciprocating mechanism' interacts with the other components of the reclining mechanism to impart structure to the term, including the components to which the reciprocating mechanism is connected." (Pl.'s Opening Br. (Doc. 94) at 18.) Plaintiff points specifically to the following passage, which appears in claim 1 of each patent:

a reciprocating mechanism attached to the base unit and the reclining mechanism, the reciprocating mechanism being configured to enable the seat, backrest and reclining mechanism to reciprocate

relative to the base unit along a longitudinal path responsive to a longitudinally-directed force.

(See, e.g., '348 patent (Doc. 31-1) at 9:26-31.) Plaintiff further identifies the following figure and certain excerpts from the patent specifications, which Plaintiff argues establish a definite structure for the reciprocating mechanism: "the glide foundation plate [24] provides a stable base about which the seating unit may reciprocate via glide links [20] and [25], which are suspended from the foundation plate by pivots [21 and [26]." (Pl.'s Opening Br. (Doc. 94) at 17-18.)

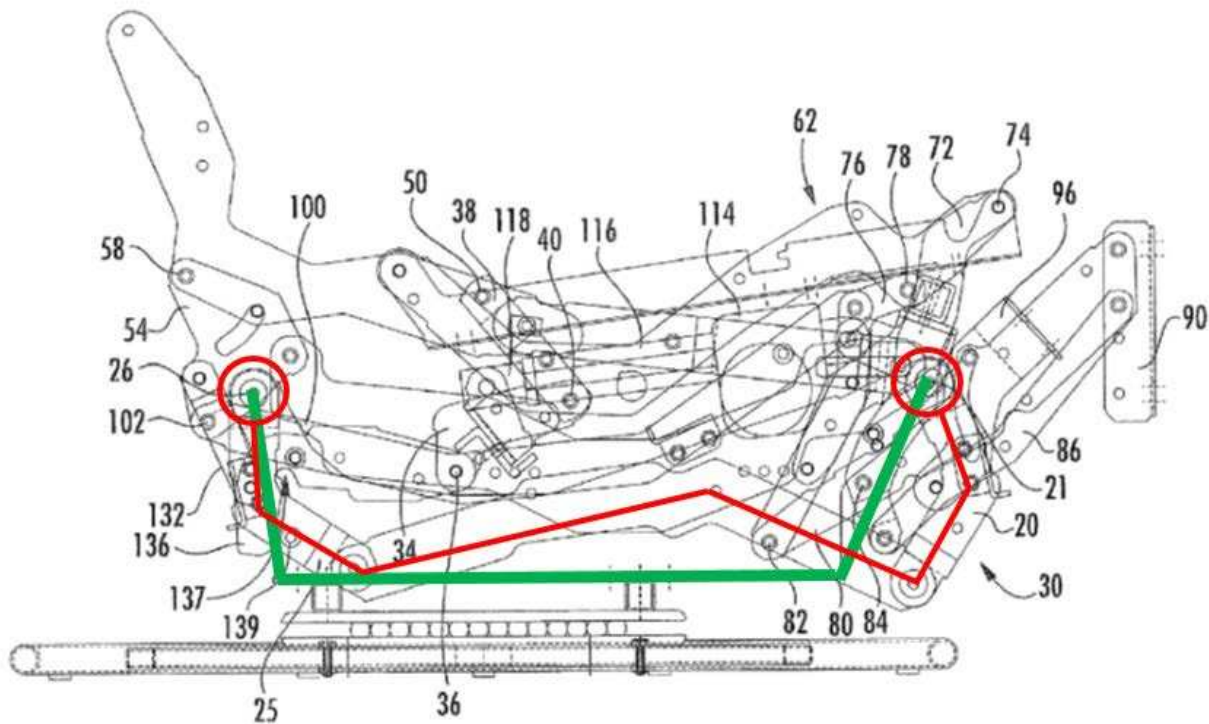


FIG. 2

Plaintiff argues the patents themselves demonstrate that the reciprocating mechanism's structure is clearly understood by

anyone skilled in the art of furniture-making, as evidenced by incorporated and related patents. (See Pl.'s Resp. Br. (Doc. 98) at 19.) Plaintiff contends that, even if the court construes the term under § 112, ¶ 6, Defendants' construction is improper because it does not account for the rocking-unit structure described in the specification. (Id. at 18-19.) In sum, Plaintiff urges this court to adopt a plain-meaning construction of the term.

Defendants argue, similar to the above argument regarding the term "locking mechanism," that the court should adopt a means-plus-function construction pursuant to 35 U.S.C. § 112, ¶ 6. Defendants first assert that the use of "reciprocating mechanism" in the patent specification is "in traditional means-plus-function format: a nonce word ('mechanism') followed by a function ('to enable the seat, backrest and reclining mechanism to reciprocate relative to the base unit along a longitudinal path responsive to a longitudinally-directed force')." (Defs.' Opening Br. (Doc. 92) at 29.) Then, Defendants argue that Plaintiff's attempt to incorporate by reference a rocking-specific patent to clarify the structure used by the "reciprocating mechanism" fails because (a) it simply "replaces one nonce word with another," and (b) "a patentee cannot incorporate corresponding structure by reference." (Id. at

30-31.) In their responsive brief, Defendants largely re-emphasize these same arguments; further, Defendants contend that the patent fails to define a sufficiently-specific structure and that, if the term "'rocking unit' were generally known in the art, there would be no need for the Asserted Patents to incorporate by reference." (Defs.' Resp. Claim Constr. Br. ("Defs.' Resp. Br.") (Doc. 100) at 22.)

Turning again to the Williamson decision, the Federal Circuit emphasized that:

[i]n making the assessment of whether the limitation in question is a means-plus-function term . . . the essential inquiry is not merely the presence or absence of the word "means" but whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.

Williamson, 792 F.3d at 1348. When the word "means" is not used, this creates a rebuttable presumption that § 112, ¶ 6 does not apply; "if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function [by preponderance of the evidence], this presumption may be rebutted." Advanced Ground Info. Sys., 830 F.3d at 1347 (quoting Williamson, 792 F.3d at 1348).

As previously discussed, "mechanism" is a generic descriptor term. "Reciprocating," by itself, fails to "impart

structure into the term." See Williamson, 792 F.3d at 1350-51. This term falls closer on the spectrum to Williamson and Diebold than to Greenberg. While "detent mechanism" apparently invoked a specific type of structure, such as a lock, clamp or screwdriver, "reciprocating mechanism" appears far more amorphous as it could potentially include anything that induces back and forth movement. Further, as noted above in the discussion of "locking mechanism," the Federal Circuit in Greenberg relied heavily on dictionary definitions to conclude that "detent" had a specific, generally-understood structural meaning in the industry. See Greenberg, 91 F.3d at 1583. But a 2011 dictionary (that contains a similarly specific structural definition of "detent") defines "reciprocate" as "[t]o move back and forth alternately." American Heritage Dictionary at 1468. That definition is so broad that it could apply to thousands of different structural components and fails to give the term a definite meaning.¹⁰

The claim itself speaks only in terms of function (i.e., what the mechanism does rather than the parts that combine to achieve that outcome) and fails to describe the structure of the mechanism to any extent. While this court has a duty to read the

¹⁰ The dictionary definition offered by Plaintiff is similarly too generic to impart structure to the claim term. (See Doc. 89-1 at 4.)

claim in light of the corresponding portions of the specification, the specification must set forth a structural limitation in order to take the dispute outside of § 112, ¶ 6. See Diebold, 899 F.3d at 1300-01; Media Rights, 800 F.3d at 1372-73. Here, although the specifications describe the structure of a "gliding mechanism," (see, e.g., (Doc. 31-2) '693 patent at 5:28-35), they also explicitly state that any structure set forth in the specification is but one example of a structure that could be a reciprocating mechanism, (see id.) And Plaintiff's counsel conceded at the hearing on August 14 that, in the same way as "locking mechanism," the specification's structural description is but one example of a "reciprocating mechanism." (See Minute Entry 08/14/2019.) For the reasons previously discussed, a specification description narrower in scope than the claim term is insufficient to impart a definite structural limitation to the claim term.

Additionally, Plaintiff's external evidence fails to demonstrate broad knowledge of those skilled in the art. For example, Plaintiff refers to U.S. Patent No. 4,536,029 as evidence that "reciprocating mechanism" is well-understood in the art to mean a mechanism with definite structure that produces rocking movement. (See Pl.'s Resp. Br. (Doc. 98) at 19.) However, while the '029 patent does describe a mechanism

producing rocking movement, the section that Plaintiff cites does not specifically define this mechanism as a "reciprocating mechanism." (See Doc. 99-1.) For the threshold inquiry of whether a claim term is a means-plus-function term, it is not sufficient that Plaintiff merely identifies other patents describing mechanisms that could be reciprocating mechanisms. Rather, Plaintiff must show that the phrase has a well-defined structural meaning to those skilled in the art. Because Plaintiff fails to do so, § 112 ¶ 6 applies to the term "reciprocating mechanism."

The next step of the analysis is to search the specifications for a corresponding structure. Both parties appear to agree that the relevant structure for a gliding mechanism is described in the specification for each patent. (See Pl.'s Opening Br. (Doc. 94) at 17; '348 patent (Doc. 31-1) at 5:20-31.) This description accords with the function set forth in the claim, because the "gliding motion" described in the specification is the same reciprocating movement described in the claim.

Defendants argue, however, that the term "reciprocating mechanism" "is [nevertheless] indefinite under 35 U.S.C. § 112, ¶ 2, for failing to define a 'rocking unit.'" (Defs.' Opening Br. (Doc. 92) at 28.) The definiteness requirement mandates

"that a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty." Nautilus, 572 U.S. at 910; see also Interval Licensing LLC v. AOL, Inc., 766 F.3d 1364, 1371 (Fed. Cir. 2014) ("The claims, when read in light of the specification and the prosecution history, must provide objective boundaries for those of skill in the art."). Here, the specification provides specific structural guidance regarding a rocking-type "reciprocating mechanism." (See '348 patent (Doc. 31-1) 4:48-53 (referring to "a rocking unit like that discussed in co-assigned and U.S. patent application Ser. No. 12/276,559, the disclosure of which is hereby incorporated herein in its entirety").) Application number 12/276,559, now the '574 patent, provides a detailed structural definition of a "rocker mechanism" in its specification: "[t]he rocker cams [20], the rocker spring assemblies [22], and the components to which they are attached form a rocker mechanism [21]." ('574 patent (Doc. 89-2) at 5:45-47.)

Other patents that are incorporated by reference into the claim-construction patent "are highly relevant to one of ordinary skill in the art for ascertaining the breadth of the claim term." AquaTex Indus., Inc. v. Techniche Sols., 419 F.3d 1374, 1381 (Fed. Cir. 2005.) This is especially true where the

inventor incorporates an outside patent by reference for the primary purpose of defining a specific term. See id. Here, the patents each incorporate the '574 patent as an example of "another mechanism that provides reciprocating motion." While this incorporation is not specific enough to bring the claim term outside of § 112, ¶ 6, it clearly signals a corresponding structure for the "reciprocating" function.

This court disagrees with Defendants' statement that "a patentee cannot incorporate corresponding structure by reference." (Defs.' Opening Br. (Doc. 92) at 30 (citing Atmel Corp. v. Info. Storage Devices, Inc., 198 F.3d 1374, 1381 (Fed. Cir. 1999).) This court reads Atmel to require a close initial reading of the specification itself to discern any disclosed structure. However, if the specification itself refers to a structure that is described more fully in an incorporated patent, Atmel does not prohibit a court from referring to that incorporated patent to construe the claim term. Therefore, the term "reciprocating mechanism" is not indefinite under § 112, ¶ 2, and the incorporated '574 patent imparts structure to a "reciprocating mechanism" that produces rocking motion.

This court therefore adopts Defendants' proposed construction, in part, and construes "reciprocating mechanism" under § 112, ¶ 6, in accordance with its corresponding function.

Specifically, "reciprocating mechanism" means either (1) a gliding mechanism, as described in 5:20-31 of the '348 patent specification and 5:24-35 of the '693 patent, or (2) a rocking mechanism, as described in 5:32-53 of the incorporated '574 patent specification; in each case to enable the seat, backrest and reclining mechanism to reciprocate relative to the base unit along a longitudinal path responsive to a longitudinally-directed force.

C. **"the backrest and the seat substantially maintain the same relationship as they have in the upright position"**

This language appears in claims 1 and 13 of the '348 patent and claims 1 and 12 of the '693 patent. The phrase describes the seating unit's "intermediate TV position." The parties dispute whether this claim can be construed according to its plain meaning, but the two competing constructions differ only slightly. (See Side-by-Side Listing (Doc. 93-1) at 5.)

Plaintiff argues that the plain meaning of the claim language is that "in the intermediate TV position, the backrest is still generally vertically disposed or close to it, and the seat is still generally horizontally disposed or close to it." (Pl.'s Opening Br. (Doc. 94) at 23.) Specifically, because "[n]either the claims, specification, nor prosecution history of the patents at issue impose any angular limitations," Plaintiff

asserts that the "extraneous limitation[]" of a certain angular relationship is incorrect. (Id. at 24.) Plaintiff further argues that the presence of angular language in the description of the "fully-reclined" position is evidence that the patentee explicitly declined to impose such a limitation on the intermediate TV position. (Pl.'s Resp. Br. (Doc. 98) at 26-27.)

Defendants' argument is largely based on the plain language of the claims as well: Defendants argue that the use of "generally vertical" and "generally horizontal" to describe the upright position and the reference to an "increasing angle" between the backrest and the seat in the fully-reclined position both suggest that the relationship in the intermediate TV position is properly described in angular terms. (Defs.' Opening Br. (Doc. 92) at 32-33.) Additionally, Defendants contend that the specification "shows that the angle between the seat and the backrest does not change until moving from the TV position to the fully reclined position" - i.e., that the angle remains the same in the upright and TV positions. (Id. at 33-34.) Finally, Defendants assert that Plaintiff's preferred construction would create a nonsensical result in which "significant variations" in the angle between the backrest and the seat would be considered "substantially the same" because there is no bright-line cutoff. (Defs.' Resp. Br. (Doc. 100) at 26-27.)

The phrase "substantially maintain the same relationship" is a term of degree and invokes special rules of claim construction and definiteness. See, e.g., Enzo Biochem, 599 F.3d at 1335 ("Because the intrinsic evidence here provides . . . examples sufficient to enable a person of ordinary skill in the art to determine the scope of the claims, the claims are not indefinite even though the construction of the term 'not interfering substantially' defines the term without reference to a precise numerical measurement." (punctuation marks omitted)); Seattle Box, 731 F.2d at 826 ("Definiteness problems often arise when words of degree are used in a claim"; evaluating for definiteness claim language stating that a certain component should have "a height substantially equal to the thickness of the tier of pipe lengths.").

As the Federal Circuit has observed, the word "substantially" can mean different things in different contexts. See Deering Precision Instruments, L.L.C. v. Vector Distrib. Sys., Inc., 347 F.3d 1314, 1322-23 (Fed. Cir. 2003) (explaining "the dual ordinary meaning of this term as connoting a term of approximation or a term of magnitude"). Here, the context in which "substantially" is used in the claim suggests a term of approximation and the court will adopt that meaning. However, even when interpreted as a term of approximation, the term is

not limited by reference to any specific measurement in the claim itself. When faced with a term of degree that is not clearly defined, a court must discern whether the term, "viewed in light of the specification and prosecution history, inform[s] those skilled in the art about the scope of the invention with reasonable certainty." Nautilus, 572 U.S. at 910. If so, the court should construe the term according to the guidance contained in the specification as someone skilled in the art would interpret it. Datamize, 417 F.3d at 1348. If not, the term is void for indefiniteness.

Plaintiff's argument here essentially reduces to accepting a certain amount of vagueness. But Federal Circuit case law instructs that when, as here, the claim itself uses a term of degree but fails to limit that term, the court must consider whether "the intrinsic evidence provide[s] guidance as to the scope of the claims, including, inter alia, examples." Sonix Tech., 844 F.3d at 1377. Albeit under the old pre-Nautilus legal standards, the Federal Circuit has clearly held that phrases including the word "substantially" (with no direct reference to numerical magnitude or degree in the subject claim) are sufficiently ambiguous to trigger the examination of intrinsic evidence to determine the exact scope of the patent holder's

right to exclude. See Enzo Biochem, 599 F.3d at 1334-35; Deering Precision, 347 F.3d at 1323-24.

This court will therefore look to the specification for examples that might define and limit the claim term. Defendants, in addition to the language in the claim itself that describes the angular relationship for positions other than the intermediate TV position, point to the following passage from the specification:

Thus, as the rod continues to extend from the sleeve when the chair is in the TV position, the motor unit cannot move forward relative to the base unit any farther, so the rear end of the rod overcomes the resistance provided by the occupant's weight and the geometry of the actuating mechanism and the lower and upper swing links, and begins to move rearwardly relative to the base unit, resulting in counterclockwise rotation of the lower swing link about the pivot.

(See '348 patent (Doc. 31-1) at 8:16-24.) The specification also contains the following statement, which describes the ultimate effect of moving the seating unit into the fully-reclined position: "[i]n this position, the backrest has reclined relative to the seat at a greater angle than in the upright and TV positions." (Id. at 8:37-38 (emphasis added).) While there is no corresponding reference to angle where the specification describes moving from the upright position into the intermediate TV position, that makes sense because the angle apparently remains unchanged during that transition.

Based on the above passage from the specification, this court finds that a person of ordinary skill in the art would use the angle between the seat and backrest to determine whether the two "substantially maintain the same" relationship. See, e.g., Sonix Tech., 844 F.3d at 1377 ("This guidance [in the intrinsic evidence] allowed a skilled artisan to compare a potentially infringing product with the examples in the specification to determine whether interference is substantial.") (internal punctuation omitted); Young v. Lumenis, Inc., 492 F.3d 1336, 1346 (Fed. Cir. 2007) (construing the term "near" based on the specification in a similar context).

However, this court finds no basis for Defendants' proposed substitution of the word "essentially" for the word "substantially." Referring to the angle between the backrest and the seat provides important and relevant context for the term of degree "substantially." But the word "substantially" is used directly in the disputed claim phrase and a jury is capable of applying a construction that uses "substantially the same angle"; indeed, it is not clear to this court why the use of "essentially" adds any clarity at all. Therefore, this court will adopt Defendants' proposed construction with the above minor modification and will construe "the backrest and the seat

substantially maintain the same relationship as they have in the upright position" to mean:

in the intermediate TV position, the backrest is still generally vertically disposed or close to it, and the seat is still generally horizontally disposed or close to it and there is substantially the same angle between the backrest and the seat with the seating unit in the TV position as compared with the seating unit in the upright position.

D. "longitudinal path," "longitudinally-directed," and "longitudinally-directed force"

The parties appear to agree on the plain meaning of longitudinal: "the direction from the front to back of the seating unit." (See Pl.'s Opening Br. (Doc. 94) at 13; Defs.' Resp. Br. (Doc. 100) at 11.) However, Plaintiff urges that "longitudinal" means any "front-to-back movement," while Defendants prefer a construction that includes only movement "parallel with the underlying floor." (See Side-by-Side Listing (Doc. 93-1) at 2-3.)

The analysis of these disputed terms is similar to the above analysis of the "reciprocating" claim terms. This court finds that it should adopt a construction of the "longitudinal" terms than aligns with its chosen construction of the "reciprocating" terms – i.e., that it should adopt the same party's preferred construction for both. The central issue for both of these disputes is whether the patents cover rocking, as well as gliding, chairs. It would be inconsistent to adopt a

construction of "reciprocate" that suggests one ultimate result and a construction of "longitudinal" that suggests the opposite result. Therefore, this court will adopt Plaintiff's preferred construction for the "longitudinal" terms and construe these terms to refer to "front-to-back movement" generally rather than movement parallel to the ground. The court will briefly explain its analysis of these claim terms.

The claim construction analysis begins with the way the disputed term is used in the claim itself. The "longitudinal" terms are used to describe the reciprocating mechanism, which "enable[s] the seat, backrest and reclining mechanism to reciprocate relative to the base unit along a longitudinal path responsive to a longitudinally-directed force." ('348 patent (Doc. 31-1) at 9:28-31.) Defendants suggest that the plain meaning of "longitudinal" encompasses only straight-line (rather than curved) motion and that Plaintiff is improperly concerned with the design of the potentially-infringing products. (Defs.' Resp. Br. (Doc. 100) at 12.) However, as the term is used in the claims, there is also nothing that supports limiting the term to only movement parallel to the floor. Therefore, the next step for this court is to look to the specification and any other intrinsic evidence to construe the term.

Here, Defendants face a major obstacle: the specification expressly links "motion along a longitudinal path" to a "rocking unit." (See '348 patent (Doc. 31-1) at 4:48-53.) The passage reads as follows:

In other embodiments, another mechanism that provides reciprocating motion along a longitudinal path, such as a rocking unit like that discussed in co-assigned and U.S. patent application Ser. No. 12/276,559¹¹, the disclosure of which is hereby incorporated herein in its entirety, may also be employed.

(See '348 (Doc. 31-1) patent at 4:48-53 (emphasis added).)

Defendant's preferred construction would, apparently, exclude any rocking embodiment because the motion of a rocking chair is not solely horizontal but also slightly up-and-down. Defendants concede as much but then argue that "claims need not cover all embodiments of the specification when inventors, like those here, choose terms that limit the scope of the claims to only certain embodiments." (Defs.' Resp. Br. (Doc. 100) at 15.) Defendants further argued, at the claim construction hearing, that the above quotation simply means that the rocking unit in the incorporated '574 patent could be modified to move along a horizontal, "longitudinal" path; not that the rocking unit in

¹¹ This application, which is now the '574 patent, describes "[a] rocking and reclining seating unit" that employs "a longitudinally-directed rocking motion relative to the base unit." ('574 patent (Doc. 89-2) at 1:58-59; 2:1-3.)

its unmodified state moves longitudinally. (See Minute Entry 08/14/2019.)

First, a court should only find that listed embodiments are excluded "when the claim language is clearly limited to one or more embodiments." TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1375 (Fed. Cir. 2008). But Defendants argue only that the claim language is "ambiguous" and does not affirmatively require a "rocking" embodiment. Defendants never contend that the relevant claims clearly exclude a "rocking" embodiment. (See Defs.' Opening Br. (Doc. 92) at 22-23.) Second, Defendants' reliance on language from other claims in the '348 and '693 patents is improper insofar as Defendants attempt to elevate this evidence in importance over the specifications or other intrinsic evidence. See Markman I, 52 F.3d at 1003 (listing "the meaning of terms in the claim, the specification, other claims, or prosecution history" in that order) (quoting Perini Am., Inc. v. Paper Converting Mach. Co., 832 F.3d 581, 584 (Fed. Cir. 1987)). Rather, the relevant portion of the specifications should be given at least equal weight as the language of other claims, and the specifications provide persuasive evidence that a rocking embodiment is not disclaimed in the relevant claims.

Third, this court is also not convinced by Defendants' argument that the patent drafter intended "longitudinal" to be a more precise term than "generally horizontal" or "generally parallel." (Defs.' Resp. Br. (Doc. 100) at 12-13.) Rather, the court finds that "longitudinal" was intended to be broader than the other two terms. Defendants provide merely speculation, rather than any concrete intrinsic evidence, to support this argument. Further, the mere fact that the allegedly-infringing products employ a rocking motion does not prevent the court from identifying any specified embodiments and ensuring that the court's construction does not improperly exclude those embodiments. (Cf. id.) Plaintiff's argument is simple and can be justified without looking beyond the four corners of the patent: the disputed terms should be construed in a manner that permits an embodiment set forth in the specification and not excluded by the relevant claim.

Fourth, the incorporated '574 patent is powerful evidence that the "longitudinal" terms would be understood by someone skilled in the art to cover a rocking motion. Specifically, the '574 patent refers in multiple places to a "longitudinally-directed rocking motion." (See '574 patent (Doc 89-2) at 2:1-5; 9:44-48.) This intrinsic evidence suggests that, contrary to Defendants' preferred construction, longitudinal is understood

in the art to describe both gliding and rocking motions. This court simply cannot accept Defendants' argument that the specification's reference to and incorporation of the '574 patent was intended merely to suggest that the rocking unit in that patent could be modified to move in a horizontal, gliding motion. That passage makes no reference to modifying the unit's structure or function, and it strains credulity to believe that the inventors incorporated another patent by reference merely to observe that a mechanism in that patent could be modified to produce the same kind of movement as their invention. Interpreting the passage in that way renders it entirely superfluous. The modified rocker would not really be a "different embodiment" at all. Rather, it would be a rocker modified to look and function exactly as the gliding chair described in the patents.

Fifth, Defendants cite to extrinsic evidence to support their preferred construction of "longitudinal." Namely, Defendants point to at least three patents written by one or both of the same inventors that define "forward" and "rearward" in terms of "a vector that extends from the seat toward the backrest parallel to the underlying surface" and then state that "[t]he forward and rearward directions together comprise the 'longitudinal' directions relative to the chair." (See Docs. 92-

3, 92-4 & 92-5; e.g., U.S. Patent 6,540,291 patent (Doc. 92-3) at 4:35-45.) The express omission of "longitudinal" from the definition section of both the '348 and '693 patents suggests that the inventors intended "longitudinal" to have a broader meaning here than in other related patents. Further, as Defendants' counsel stated during the claim construction hearing, these patents are extrinsic evidence. (See Minute Entry 08/14/2019.) It is improper to use extrinsic evidence to vary the meaning of a claim term when the intrinsic evidence provides a clear answer. See, e.g., Innovative Commc'ns Techs., Inc. v. Vivox, Inc., Nos. 2:12cv7, 2:12cv9, 2012 WL 5331573, at *9 (E.D. Va. Oct. 26, 2012).

A rocking unit is a potential embodiment of the invention not clearly excluded by the claim language (and, importantly, not excluded by the specific claims that contain the "longitudinal" terms). When an embodiment is set forth in the specification, claims should almost always be construed in a manner that covers that embodiment. See Nobel Biocare Servs. AG v. Intradent USA, Inc., 903 F.3d 1365, 1381 (Fed. Cir. 2018); On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH, 386 F.3d 1133, 1138 (Fed. Cir. 2004); Globetrotter Software, Inc. v. Elan Comput. Grp., Inc., 362 F.3d 1367, 1381 (Fed. Cir. 2004) ("A claim interpretation that excludes a preferred embodiment from

the scope of the claim is rarely, if ever, correct.”) (quoting Vitronics, 90 F.3d at 1583).

This court finds that Defendants have failed to effectively rebut the strong presumption that the claim should be interpreted to include an embodiment listed in the specification and not disclaimed. Therefore, this court will adopt Plaintiff’s preferred construction and construe “longitudinal” and related claim terms to mean “of or relating to the general dimension of the front to the back of the seating unit.”

V. SUMMARY OF THE COURT’S CLAIM CONSTRUCTION

On the following page is a chart outlining the parties’ proposed construction of claim terms in dispute and the court’s chosen construction for each term. The court’s construction of each disputed term is highlighted in green.

Term (Claim #s)	Plaintiff's Construction (generally)	Defendants' Construction (generally)	<u>Court's Construction</u>
Locking mechanism	A mechanism that helps to hold or prevent movement	Means-plus-function term, <u>see</u> 35 U.S.C. § 112, ¶ 6	A "drive" link (i.e., a straight link that slopes downwardly and slightly forwardly from a pivot and is pivotally interconnected with a downwardly-extending projection of a hook-shaped locking link at a pivot) and a locking link, as well as equivalents thereof, that accomplish the function of allowing the seating unit to reciprocate while in the upright position but preventing reciprocating of the seating unit while in the TV and fully reclined positions.
Longitudinal, longitudinal path, longitudinally-directed, longitudinally-directed force	Of or relating to the general dimension of the front to the back of the seating unit	A direction parallel with the underlying floor, extending from the backrest toward the seat and <u>vice versa</u>	Of or relating to the general dimension of the front to the back of the seating unit

Term (Claim #s)	Plaintiff's Construction (generally)	Defendants' Construction (generally)	<u>Court's Construction</u>
Reciprocate, reciprocating	To move back and forth alternately	To move forward and backward alternately	To move back and forth alternately
Reciprocating mechanism	A mechanism that moves back and forth alternately	Indefinite under 35 U.S.C. § 112, ¶ 2, for failing to define a "rocking unit"; OR Means-plus-function term, see 35 U.S.C. § 112, ¶ 6	Either (1) a gliding mechanism, as described in 5:20-31 of the '348 patent specification, or (2) a rocking mechanism, as described in 5:32-53 of the incorporated '574 patent specification, in each case to enable the seat, backrest and reclining mechanism to reciprocate relative to the base unit along a longitudinal path responsive to a longitudinally-directed force.

Term (Claim #s)	Plaintiff's Construction (generally)	Defendants' Construction (generally)	<u>Court's Construction</u>
The backrest and the seat substantially maintain the same relationship as they have in the upright position	In the intermediate TV position, the backrest is still generally vertically disposed or close to it, and the seat is still generally horizontally disposed or close to it	In the intermediate TV position, the backrest is still generally vertically disposed or close to it, and the seat is still generally horizontally disposed or close to it and there is essentially the same angle between the backrest and the seat with the seating unit in the TV position as compared with the seating unit in the upright position	In the intermediate TV position, the backrest is still generally vertically disposed or close to it, and the seat is still generally horizontally disposed or close to it and there is <u>substantially</u> the same angle between the backrest and the seat with the seating unit in the TV position as compared with the seating unit in the upright position

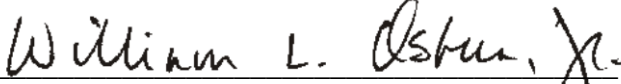
VI. CONCLUSION

For the reasons set forth herein, this court construes the four sets of disputed claim terms as described above.

IT IS SO ORDERED.

IT IS FURTHER ORDERED that the parties' Joint Motion for Hearing on Claim Construction, (Doc. 90), is **DENIED AS MOOT.**

This the 26th day of September, 2019.


United States District Judge