

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

MOSKOWITZ FAMILY, LLC,

Plaintiff,

V.

NUVASIVE, LLC, and
NUVASIVE, INC.,

Defendants.

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Civil Action No. 25-711 (WCB)

CLAIM CONSTRUCTION ORDER

In this medical device patent infringement case, plaintiff Moskowitz Family, LLC (“Moskowitz”) asserted ten patents against defendants NuVasive, LLC and NuVasive, Inc. (collectively, “NuVasive”): U.S. Patent No. 7,972,363 (“the ’363 patent”); U.S. Patent No. 9,005,293 (“the ’293 patent”); U.S. Patent No. 9,301,854 (“the ’854 patent”), U.S. Patent No. 9,924,940 (“the ’940 patent”), U.S. Patent No. 10,016,284 (“the ’284 patent”), U.S. Patent No. 10,925,753 (“the ’753 patent”), U.S. Patent No. 11,376,136 (“the ’136 patent”), U.S. Patent No. 11,771,567 (“the ’567 patent”), U.S. Patent No. 12,144,743 (“the ’743 patent”), and U.S. Patent No. 12,491,088 (“the ’088 patent”). D.I. 37 at ¶ 14. The patents generally relate to implantable devices and associated methods used in spinal fusion surgery.

The parties disagree about the proper construction of eight claim terms across the asserted patents, and NuVasive contends that four other claim terms are indefinite. Moskowitz filed an opening brief, D.I. 46, and NuVasive filed an answering brief, D.I. 54. Moskowitz filed a reply brief, D.I. 58, and NuVasive filed a sur-reply brief, D.I. 62.

The parties agreed on corrections to two of the claims. The parties agreed that the court could make those corrections, because the corrections are “evident on the face of the patents and not subject to reasonable debate.” D.I. 46 at 18; *see Canatex Completion Sols., Inc. v. Wellmatics, LLC*, 159 F.3d 39, 45 (Fed Cir. 2025) (“Governing precedent recognizes the propriety of judicial correction of erroneous wording of a claim as a matter of claim construction when a very demanding standard is met.”); *CBT Flint Partners, LLC v. Return Patah, Inc.*, 654 F.3d 1353, 1358 (Fed. Cir. 2011) (A court may change claim language if there is “an obvious and correctable error in the claim, the construction of which is not subject to reasonable debate.”). In the ’363 patent, the term “second screw” in claim 1 should be followed by the word “member.” ’363 patent, col. 15, ll. 28–29 (“that prevents the first screw member and/or the second screw [member] from pulling-out”). In the ’753 patent, claim 31 should include the word “the” in the phrase “a second portion of top wall.” ’753 patent, col. 22, ll. 5–6 (“between at least a second portion of [the] top wall”).

I agree with parties on the two undisputed corrections described above, and I will direct that those changes be made. Next, I turn to the parties’ disputed terms and resolve the parties’ disagreements regarding indefinite terms as discussed and for the reasons provided below.

I. Disputed Terms

The parties ask the court to construe a number of disputed claim terms across the patents at issue in this case. Those terms are: “screw locking mechanism” (’363 patent), “screw lock” (’753 patent), “self-actuated locking mechanism” (’743 patent), “turning mechanism” (’940

patent), “universal” (’293 patent), “shell” (’940 patent), “coupled” (’088 patent), and interconnected (’284 patent).¹

“The construction of a patent, including terms of art within its claim, is not for a jury but exclusively for the court to determine.” *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. at 321 (2015) (citation modified) (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. at 372 (1996)). “Words of a claim are generally given their ordinary and customary meaning, which is the meaning a term would have to a person of ordinary skill in the art after reviewing the intrinsic record at the time of the invention.” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc)). The claims “are part of a fully written instrument consisting principally of a specification,” which “is the single best guide to the meaning of the disputed term.” *Phillips*, 415 F.3d at 1315 (citation modified) (citations omitted). While the court may look to extrinsic evidence, such evidence must be “considered in the context of the intrinsic evidence.” *Phillips*, 415 F.3d at 1319. “When the parties present a fundamental dispute regarding the scope of a claim term, it is the court’s duty to resolve it.” *O2 Micro Int’l Ltd.*, 521 F.3d at 1362.

A. “screw locking mechanism,” “screw lock,” and “self-actuated locking mechanism”

The parties dispute the construction of the terms “screw locking mechanism” (’363 patent, col. 15, ll. 28, 32, 35; col. 16, ll. 51, 54; col. 17, line 5), “screw lock” (’753 patent, col. 18, line 14; col. 19, line 1), and “self-actuated locking mechanism” (’743 patent, col. 19, line 50). Moskowitz contends that all three should be construed according to their plain and ordinary meaning because they represent a “concrete, well-understood class of structural locking devices

¹ The parties present several of the disputed claim terms in groups. For this order, I address the disputed terms in the groups as presented by the parties.

used in spinal implant design to prevent back-out or pull-out.” D.I. 46 at 2–4. NuVasive, on the other hand, argues that none of the three terms define a particular structure, and that they are subject to the statutory limitations imposed on “means-plus-function” claiming by 35 U.S.C. § 112(f). As a consequence, NuVasive asserts, those terms are limited to the structures disclosed in the respective specifications and the equivalents of those structures. D.I. 54 at 9–12.

“Section 112 ¶ 6 [now 35 U.S.C. § 112(f)] offers patent applicants two options: (1) recite, in the claim, a function without reciting structure for performing the function and limit the claims to the structure, materials, or acts disclosed in the specification (or their equivalents), in which case § 112 ¶ 6 applies, or (2) recite both a function and the structure for performing that function in the claim, in which case § 112 ¶ 6 is inapplicable.” *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1365 (Fed. Cir. 2022) (citing *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc in relevant part)).

When a claim or element of a claim does not contain the word “means,” there is a rebuttable presumption that the claim or element is not to be treated as a means-plus-function claim or element, and that the restrictions imposed by 35 U.S.C. § 112(f) do not apply. *Williamson*, 792 F.3d at 1348. That presumption can be overcome “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.* at 1348 (quoting *Watts v. XL Sys., Inc.*, 282 F.3d 877, 880 (Fed. Cir. 2000)). “The standard 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.* (citing *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996)). If the claim or limitation is deemed to be directed to a means for performing a particular function, then the claim or limitation is limited to only those structures described in the

specification that perform that function and the equivalents of those structures. *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

(1) “screw locking mechanism”

The parties point to the use of the term “screw locking mechanism” in claims 1, 21, and 26 of the ’363 patent. That mechanism, according to claim 1, prevents the screws from pulling out of the screw guides and is located between the intervertebral cage, which maintains disc height, and the “underside of the screw head . . . when the first screw locking mechanism is in a locked state.” ’363 patent, col. 15, ll. 19, 28–36. Claim 21 depends on claim 1 and requires the screw locking mechanism to be located between the intervertebral cage and the underside of the screw head “when the first screw locking mechanism is in an un-locked state.” *Id.* at col. 16, ll. 50–54. Claim 26, which also depends from claim 1, calls for the mechanism to be “reusable for a limited number of cycles.” *Id.* at col. 17, ll. 4–6.

Whether the term “screw locking mechanism” is subject to the restrictions of section 112(f) turns on whether a person of ordinary skill in the art would understand the claims’ use of the term to refer to a particular structure or merely to describe any mechanism that can perform the recited function. The claim does not use the term “means,” which indicates that the “means-plus-function” provisions of section 112(f) are presumed to be inapplicable. For the reasons discussed below, however, I find that the term “screw locking mechanism” recites a function without sufficiently definite accompanying structure, and I therefore conclude that the limitation is subject to the restrictions imposed by section 112(f).

“Mechanism” is a term that has often been addressed in claim construction. The term has frequently been regarded as equivalent to the term “means” for purposes of determining whether the claim language in question is subject to the constraints of section 112(f). For example, in

Media Rights Technologies, Inc. v. Capital One Financial Corp., 800 F.3d 1366, 1373 (Fed. Cir. 2015), the Federal Circuit noted that “[w]e have never found the term ‘mechanism’—without more—connotes an identifiable structure” for purposes of applying section 112(f). Adding a functional adjective to the word “mechanism” has not made a difference.

In *Williamson*, the Federal Circuit explained that “[g]eneric terms such as ‘mechanism,’ . . . 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’ because they ‘typically do not connote sufficiently definite structure’ and therefore may invoke § 112, para. 6 [now § 112(f)].” 792 F.3d at 1350 (citations omitted). Recently, in *Abiomed Inc. v. Maquet Cardiovascular LLC*, No. 2024-1062, 2026 WL 346501 (Fed. Cir. Feb. 9, 2026), the Federal Circuit applied that principle and determined that the word “guide” in the term “guide mechanism” was not sufficient to describe a particular structure, but instead served merely as a functional modifier of the nonce term “mechanism.” As a result, the court concluded that the term “guide mechanism” was equivalent to the phrase “means for guiding” and was therefore subject to the restrictions imposed by section 112(f). 2026 WL 346501 at *6. As the Federal Circuit has further noted, however, additional language in a claim that would otherwise be viewed as functional “can sometimes add sufficient structure to avoid 112 ¶ 6.” *Mass. Inst. of Tech. & Elecs. For Imaging, Inc. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006).

In this case, as in *Abiomed*, adding the purely functional term “screw locking” does not add sufficient structure to the term “mechanism” to save the claim language from being subject to the restrictions of section 112(f). Claim 1 uses the term “screw locking mechanism” to describe a function—preventing screw pull-out or back-out. The claim then identifies a location for the screw-locking mechanism—between the intervertebral cage and the underside of the first screw

head when the screw locking mechanism is engaged. '363 patent, col. 15, ll. 28–36. When “screw locking mechanism” is mentioned in other claims, the surrounding language tends to modify the function, location, or interaction with other parts of the apparatus. *See, e.g.*, '363 patent, claim 9, col. 15, ll. 61–63 (“wherein the first screw locking mechanism is press-fit into a surface”); claim 18, col. 17, ll. 35–40 (“wherein the intervertebral cage includes . . . a second screw locking mechanism that prevents the third screw member from pulling out of the fourth internal screw guide”). In *Media Rights Technologies*, however, the Federal Circuit found such additional features insufficient to describe structure. 800 F.3d at 1373. The court concluded that the written description’s “function and interaction with the other parts in the system” were insufficient to avoid characterizing the language as invoking section 112(f). *Id.*

The same analysis applies here. The specification of the '363 patent describes several structures that can serve the function of a “screw locking mechanism.” For example, one embodiment describes a “mechanically indenting” locking mechanism. *Id.* at col. 7, ll. 39–43; *see id.* at Fig. 1A–B. Elsewhere, the specification describes how one or two screw-locking mechanisms can be press-fit to the top of the intervertebral cage. *Id.* at col. 8, ll. 10–30; *see id.* at Fig. 2F–G. But those non-limiting disclosures of embodiments and descriptions of how screw-locking mechanisms can interact with other parts of the invention are not different in kind from the disclosures in *Media Rights Technologies, Inc.*, which the Federal Circuit held to contain insufficient structure to avoid characterizing the language as invoking section 112(f).

Moskowitz argues that the “screw locking mechanism” in this case, like the “detent mechanism” in the *Greenberg* case should be considered one of “a known class of mechanical structures,” and therefore not subject to means-plus-function analysis. D.I. 46 at 2 (citing *Greenberg*, 91 F.3d at 1583). In *Greenberg*, the court concluded that the term “detent,” like the

term “screwdriver,” has a “generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms.” 91 F.3d at 1583. But Moskowitz has not shown that the term “screw locking mechanism” has a specific meaning in the art, unlike in *Greenberg*, where the court observed that the term “detent” has a specific meaning. A “detent” calls to mind a specific type of structure. A “screw locking mechanism” does not. Instead, even as limited to spinal fusion surgery, the term merely calls to mind any one of a number of structures that could perform the function of inhibiting a bone screw from pulling out or backing out of a bone. A term that refers to any device that serves the function of preventing screw pull-out or back-out is not a term that is “structural” within the meaning of *Greenberg* or other means-plus-function cases.

Moskowitz cites a declaration from its expert, Ken Gall, in support of the proposition that the term “screw locking mechanism” would have “conveyed to a person of ordinary skill a class of well-known structural components used in spinal implant systems to prevent screw back-out or pull-out.” D.I. 47 ¶ 33. Dr. Gall added the following by way of elaboration:

In the field of spinal fixation and intervertebral devices, ‘screw locking mechanism,’ ‘screw locks,’ and ‘locking mechanisms’ are well-established structural features and have been for decades. Designers of intervertebral cage and plate-and-screw systems routinely incorporate structural elements—such as tabs, clips, springs, wedges, press-fit inserts, threaded features, ratcheting heads, or other mechanical interference components—that physically engage a screw head or shaft to resist reverse rotation or axial withdrawal. A person of ordinary skill in the art would understand the phrases “screw locking mechanism” and “screw lock” to refer to this recognized category of physical structures that secure a screw relating to a cage or guide.

Id. at ¶ 34.

The problem with Dr. Gall’s statement is that it merely states that persons of skill in the art would refer to any device that could be used to secure screws in place as “screw locking mechanisms.” By his own admission, the term is used to refer to any structures that can perform that function, not to a particular structure or specific set of structures defined by anything other

than function. It is of course likely that persons of skill in the art would refer to devices that lock screws in place by using terms such as “screw locking mechanisms” and the like. But that merely proves the point that the term “screw locking mechanism” is a functional term that does not identify any specific structural device that can be employed to perform that function.

The embodiments discussed in the specification bring the term closer to describing the structure that would be required to avoid section 112(f). However, “[t]hat the specification discloses a structure corresponding to an asserted means-plus-function claim term does not necessarily mean that the claim term is understood by persons of ordinary skill in the art to connote a specific structure or class of structures.” *MTD Prods. Inc. v. Iancu*, 933 F.3d 1336, 1344 (Fed. Cir. 2019) (finding, among other factors, that the specification did not provide sufficiently definite structure for the term “mechanical control assembly”). The specification discusses several embodiments that perform the function of preventing screws from backing out or pulling out. But a person of ordinary skill in the art would be unable to envisage what structure is meant by the term “screw locking mechanism,” even taking into account the discussion of those embodiments in the specification.

Moskowitz makes two additional arguments as to why the term “screw locking mechanism” should not be construed as a means-plus-function claim. D.I. 46 at 4, 58 at 1. First, Moskowitz points to *Globus Medical, Inc. v. Deputy Synthes Products, LLC*, No. 13-854, 2015 WL 4886050, at *3–4 (D. Del. Aug. 14, 2015), which construed “locking mechanism” to have its plain and ordinary meaning in two patents owned by Globus Medical, Inc., a predecessor of NuVasive.² As NuVasive notes, the defendant in that case did not argue that the term “locking

² In that case, the court construed the term “locking mechanism” as used in U.S. Patent Nos. 8,328,872 and 8,641,768.

mechanism” was subject to means-plus-function claiming, and there is no indication that the court in that case considered whether “locking mechanism” was subject to means-plus-function construction when it construed the term. D.I. 62 at 5. Beyond that, the common specification of the two patents at issue in that case described the screw locking mechanism in some detail. That specification provided as follows: “A locking mechanism 38 is provided on the plate portion 34 to capture the sides of both of the at least two screws 36 and 37 with a 90-degree turn preventing the titanium screws 36 and 37 from backing out.” U.S. Patent No. 8,328,872, col. 4, ll. 45-48; U.S. Patent No. 8,641,768, col. 4, ll. 53–56. Given the definitional language in the common specification of those patents, the reference to “locking mechanism” in those two patents was plainly directed to specific structures rather than to any non-specific structure that could perform the recited function. No such definitional language appears in the specification of the ’363 patent.³

Second, Moskowitz argues that principles of claim differentiation prevent the court from construing the term as subject to means-plus-function analysis. While the ’363 patent includes many claims that depend from claim 1, it is unclear how construing the term as a means-plus-function term would exclude the specific implementations recited in those dependent claims. Limiting “screw locking mechanism” to the embodiments disclosed in the specification and their

³ Moskowitz cites two other district court cases in which the courts addressed the term “locking mechanism” and construed that term not to invoke section 112(f): *Unverferth Manufacturing Co. v. Meridian Manufacturing, Inc.*, No. C19-4005, 2020 WL 1919922 (N.D. Iowa Apr. 20, 2020), and *Integrity Worldwide, LLC v. Rapid-EPS Ltd.*, No. 3:17-CV-55, 2018 WL 3609430 (N.D. Tex. May 29, 2018). In both of those cases, the courts relied on the Federal Circuit’s decision in *Greenberg*, in which the court noted that it is common for particular items to be named for the function the items perform, such as filter, brake, clamp, screwdriver, or lock. 91 F.3d at 1583. From that reference to the term “lock,” the court drew the conclusion that the use of the term “locking mechanism” should not be considered a functional term falling within section 112(f). That, however, is a flawed reading of *Greenberg*. The term “lock” may denote a particular type of device when used in a particular context. But the term “locking mechanism” is purely functional and is therefore potentially subject to analysis under section 112(f).

equivalents does not prevent that mechanism from being “press-fit into a surface of the intervertebral cage” as required by claim 8, because a “press-fit” embodiment is disclosed in the specification. *See* ’363 patent, col. 7, ll. 32–33. In any event, the Federal Circuit has held that “the stringencies of a means-plus-function limitation are not to be avoided by the mere addition of a dependent claim that recites the corresponding structure disclosed in the specification.” *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1234 (Fed. Cir. 2001) (citing *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991)). Even if claim 8 or another dependent claim disclosed sufficient structure for the “screw locking mechanism” to avoid section 112(f) for that claim, that alone would be insufficient to establish that claim 1 contains sufficient structure to render section 112(f) inapplicable.

I therefore construe the term “screw locking mechanism” in the ’363 patent to be subject to section 112(f). As such, the term is limited to the function of “prevent[ing] screw pull-out or back-out.” ’363 patent, col. 2, ll. 44–45; col. 7, ll. 42–43. And the structures encompassed by that term are those disclosed in the specification and their equivalents.

(2) “screw lock”

The term “screw lock” appears in claims 1 and 11 of the ’753 patent. Claim 1 recites the following with respect to the “screw lock” device:

[A] screw lock [is] positioned in the intervertebral spacer at a location between at least a portion of the intervertebral spacer and each of the first and second screws, wherein the screw lock is configured to deform when the first and second screws are screwed into the intervertebral spacer and tightened so as to inhibit removal of the first and second screws.

’753 patent, col. 18, ll. 14–20.

Claim 11 of the ’753 patent depends from claim 1 and requires the screw lock to be made of titanium. *Id.* at col. 19, ll. 1–2. As with “screw locking mechanism,” determining whether the

term invokes section 112(f) depends on whether the claims recite “a sufficiently definite meaning as the name for structure” to a person of ordinary skill. *See Williamson*, 792 F.3d at 1349. And as with the term “screw locking mechanism,” the claims do not use the term “means,” so it is presumed that the means-plus-function limitations do not apply.

For the disputed term “screw lock,” I find that the claim language of the ’753 patent provides a sufficiently definite structure to avoid the limitations of means-plus-function claiming. As in the case of “screw locking mechanism,” the claim begins by describing the location of the screw lock, which is placed between the “intervertebral spacer and each of the first and second screws.” ’753 patent, col. 18, ll. 14–16. And as in the case of the screw locking mechanism, the claim refers to a functional step: “to inhibit removal of the first and second screws.” *Id.* at col. 18, ll. 19–20. But unlike the “screw locking mechanism” limitation of the ’363 patent, claim 11 of the ’753 patent contains additional language explaining how the “screw lock” is configured. The specification explains that the screw lock “is configured to deform when the first and second screws are screwed into the intervertebral spacer and tightened.” *Id.* at col. 18, ll. 17–19. To a person of ordinary skill in the art, that claim language would evoke a definite structure similar to a nylon-insert lock nut, i.e., a nut with a nylon attachment that deforms as the nut engages with the screw, resulting in pressure that keeps the nut from moving vis-à-vis the screw. The claim’s limitation providing that the screw lock must be “configured to deform” would also exclude other ways of locking the screw, such as by the use of a safety wire or by the application of a locking substance to the screw threads.

Other claims provide additional structural details, such as describing the lock as “having a curvature configured to wrap at least partially around the first and second screws,” *id.* at col. 19,

ll. 61–63, “sized and shaped to rest in the first internal screw guide,” *id.* at col. 20, ll. 56–57, and “substantially c shaped,” *id.* at col. 22, line 19.

Although the specification uses the language of a “screw locking mechanism” (and not “screw lock”), the examples provide additional structure that would assist a person of ordinary skill in the art in interpreting the term “screw lock.” For example, an embodiment in the specification of the ’753 patent describes screws that “lock by mechanically indenting the screw locking mechanism” or where “the screw head directly engages the cage’s novel indentations.” ’753 patent, col. 12, ll. 6–7, 9–10. The specification further describes a surgeon locking the screws “into their final positions by the last several turns which embed them into the novel surrounding cage indentations.” *Id.* at col. 13, ll. 50–52. I find that in that description the specification contains enough structure to provide a person of ordinary skill in the art with a specific understanding of the meaning of the term “screw lock.”

Accordingly, I construe the term “screw lock” in the ’753 patent to mean “a device that inhibits the removal of a screw by deformation.” The term is sufficiently limited by the requirement in the claim that it be “configured to deform,” and therefore I find that it is not subject to section 112(f). *See* ’753 patent, col. 18, line 17.

(3) “self-actuated locking mechanism”

Claim 8 of the ’743 patent contains the term “self-actuated locking mechanism.” Claim 8 depends from claim 1, which recites a screw head and a wall “wherein the abutment of the first screw head and the first surface exerts a force against the first screw head and inhibits backout of the first screw from the first internal screw guide.” ’743 patent, col. 19, ll. 22–25. Claim 8 further provides that the abutment of the first surface and the first screw head forms a “self-actuated locking mechanism.” *Id.* at col. 19, ll. 48–50. Four other claims depend from claim 8 in nested

fashion. Claim 9 depends from claim 8 and adds that the “first surface engages an edge surface of the first screw head”; claim 10 depends from claim 9 and adds that “the first surface extends from a wall within the first bore”; claim 11 depends from claim 10 and adds that “the first surface is formed as a leaf spring”; and claim 12 depends from claim 11 and adds that “the first screw head has a ratcheted edge to interface with the leaf spring.” *Id.* at col. 19, ll. 51–59.

As in the case of the previous two terms, Moskowitz argues that the term “self-actuated locking mechanism” should be given its plain and ordinary meaning, presumably covering any locking mechanism that satisfies the abutment limitation of claim 1 and forms a self-actuated locking mechanism of some undefined nature. NuVasive, on the other hand, contends that the term should be construed to be in means-plus-function form and thus should be understood to cover only those self-actuated locking mechanisms described in the specification and their equivalents.

The specification of the ’743 patent describes the claimed screw locking mechanism in detail. As explained in the Abstract, the “novel screw locking mechanism” of the ’743 patent

consists of leaf springs which mechanically interact with [bi-directional fixating transvertebral] screws which have ratcheted screw heads. The small leaf springs allow the ratchet teeth of the screw heads to rotate only in the penetrating direction. Due to the geometric orientation of the ratchet teeth vis-a-vis the adjacent spring leaf, rotation of the screw head in the opposite direction is prevented by the insertion of the string [sic: spring] leaf in the space between the ratchet teeth (trough) of its final rotation. The uni-rotational interaction between the screw head-ratchet teeth/troughs and adjacent leaf spring is the mechanical basis for this novel locking mechanism.

’743 patent, Abstract.

The specification also provides significant detail about the how the “self-actuated locking mechanism” works. The summary of the invention describes the operation of the leaf springs as follows:

The present application provides an advanced and novel bi-directional fixating transvertebral (BDFT) screw/cage apparatus with a modified novel cage which has indentations on the upper aspect of the screw box adjacent to the internalized angled screw guides. These indentations have leaf springs which are press fit into these indentations. The leaf springs function as screw locking mechanisms in conjunction with specialized BDFT screws that are designed with ratcheted screw heads. The small leaf springs which are perpendicularly aligned with the screw head ratchet spiked teeth and troughs allow the ratchet teeth of the screw heads to rotate only in the penetrating direction. Due to the geometric orientation of the ratchet teeth and troughs vis-à-vis the spring leaf, rotation of the screw head in the opposite direction is prevented. The spring leaf engages the space between the ratchet teeth (troughs) upon its final allowed turn, and prevents any rotation in the position direction thereby locking the screw into its final position. The interaction between the adjacent leaf springs and the screws['] ratcheted teeth and troughs which only allow screw rotation in the penetrating direction is the mechanical basis for this novel locking mechanism.

'743 patent, col. 2, line 67, through col. 3, line 21. The same structure is described repeatedly throughout the specification. *See* col. 4, ll. 41–52; col. 4, line 57, through col. 5, line 3; col. 5, ll. 28–34; col. 7, line 63, through col. 8, line 4; col. 8, line 56, through col. 9, line 8; col. 9, ll. 14, 51–65; col. 11, ll. 7–10, 52–67; col. 12, line 55, through col. 13, line 3; col. 14, ll. 52–60; col. 15, line 63, through col. 16, line 4. All of the descriptions of the claimed screw locking mechanism in the specification refer to the same structure.

The specification contrasts what it refers to as the “exemplary embodiments” of the invention, i.e., devices claimed under the patent, with “conventional devices,” i.e., other screw locking mechanisms not claimed under the patent. *See id.* at col. 10, ll. 25–54; col. 11, ll. 7–11 (“Furthermore, the exemplary screw locking mechanism, which is press-fit to the cage, is unique and differs substantially from the conventional approach of matching screw/cage threads or spiral springs.”). The specification makes clear that those “conventional devices” are not embodiments of the patented invention.

As in the case of the two previous claim construction issues, the first question presented by the “self-actuated locking mechanism” claim limitation is whether a person of ordinary skill in

the art would understand the modifier “self-actuated locking mechanism” in claim 8 to refer to a particular structure, or whether that language would be understood merely to describe a function performed by an unspecified structure. As in the case of the previous two terms, the claim language does not use the term “means,” so the means-plus-function limitations of section 112(f) are presumed not to apply. But as in the case of the term “screw locking mechanism,” the term “mechanism” is a nonce word that the Federal Circuit has characterized as being equivalent in some instances to the term “means” for purposes of determining whether the claim or element in question invokes section 112(f). Although it is a close question, I am persuaded for the following reasons that the term “self-actuated locking mechanism,” as used in the ’743 patent, should not be interpreted as subject to section 112(f).

The ’743 patent uses the term “self-actuated locking mechanism” only once—in claim 8. The patent therefore provides no definitional scope for that term. The claims that depend from claim 8—in particular claim 12—indicate that a mechanism in which the screw head has a ratcheted edge that can interface with a leaf spring is at least one type of self-actuated locking mechanism. The only other devices referred to in the specification that might qualify as “self-actuated locking mechanisms” are what the patent calls “conventional devices,” which the patent characterizes as prior art devices that are not within the scope of the invention. *See* ’743 patent, col. 11, line 12, through col. 11, line 10.

As noted, what the specification describes as “the exemplary embodiments,” i.e., the embodiments of the claimed invention, all have similar features. As the specification explains, in the devices covered by the invention, a “leaf spring prevents screw back out or pull out by engaging and locking the space between the ratchet teeth (troughs) of the screw head when the screws are in the final resting positions.” ’743 patent, col. 5, ll. 31–34. As a result, “the geometric orientation

of the ratchet teeth on the screwhead . . . allow[s] the screws to rotate only in the penetrating direction.” *Id.* at col. 4, ll. 62–65. The self-actuated locking mechanism thus prevents “back out . . . because the leaf spring engages the space in between the ratchet teeth (troughs) preventing this opposite rotation and hence locking it.” *Id.* at col. 4, line 66, through col. 5, line 1. Several figures in the specification, such as Figures 1A, 1E, 2A, 2E, and 2G, depict the leaf spring and ratchet teeth on the screw head.

Moskowitz argues that the ’743 patent identifies “alternative structural embodiments within the broader category of locking mechanisms.” D.I. 46 at 3 (citing ’743 patent, col. 10, ll. 52–54, which states, “The disclosed screw locking mechanism may be a screw with an external thread matching the internal borehole thread, or spiral springs.”). But the portion of the specification to which Moskowitz refers is not a description of the invention (i.e., the “exemplary embodiments”). Instead, it is a description of the “conventional devices” that the specification took pains to distinguish from the inventive structures. *See* ’743 patent, col. 10, ll. 25–26 (“In comparison, the exemplary embodiments differ in many substantial ways from the conventional devices.”); *id.* at col. 11, ll. 7–10 (“[T]he exemplary screw locking mechanism, which is press-fit to the cage, is unique and differs substantially from the conventional approach of matching screw/cage threads or spiral springs.”).

There are two reasonable ways to interpret the term “self-actuated locking mechanism” as it is used in claim 8 of the ’743 patent. First, it could be understood to be a reference to the specific structures described throughout the specification as the subject of the patented invention. Second, it could be viewed as a more general term covering any structure that could be characterized as self-actuated and could serve the locking function. Following either analytical approach, the result would be the same. Under the first approach, the scope of claim 8 would be limited, as a matter

of claim construction, to the specific structures described in the specification as the patented invention. Any claim of infringement would be limited to the structures described in the specification, together with any similar structures falling within the doctrine of equivalents. Under the second approach, the scope of claim 8 would be limited, by operation of section 112(f), to the structures described in the specification plus their equivalents.

It is not entirely clear which of the two approaches outlined above is correct. What is clear, however, is that Moskowitz's proposal—to assign the term “self-actuated locking mechanism” its “plain and ordinary meaning”—would be erroneous, as it would simply serve to postpone the need to determine the “plain and ordinary meaning” of that term. The specification of the '743 patent makes clear that “conventional” mechanisms for locking screws, whether “self-actuated” or not, are not within the scope of claim 8. Thus, a person of ordinary skill in the art reading the claims would understand that the “self-actuated locking mechanism” recited in claim 8 of the '743 patent refers to the specific structure depicted and described in the patent.

Claims 9 through 12, which are nested dependent claims, all depend from claim 8, and each subsequent dependent claim depends from the immediately preceding claim. Those dependent claims provide further confirmation that the self-actuated locking structure is the structure that is described in the specification. As in *Retractable Technologies, Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011), the potential for a claim differentiation problem between the independent and dependent claims here is overcome by the specification. In *Retractable Technologies*, even though a dependent claim potentially suggested a broader construction for the term “body” in the independent claim, the specification's description of the invention, including figures and embodiments, and its discussion distinguishing the invention from prior art required a narrower construction of the term. *Id.* Likewise here, a narrow construction of the term “self-

actuated locking mechanism” is “required to tether the claims to what the specification[] indicate[s] the inventor actually invented.” *Id.*⁴

At the end of the day, I conclude that the term “self-actuated locking mechanism,” in the context in which it appears in the ’743 patent, is best understood to be limited to the structure described in the patent as a matter of claim construction, and not because that term invokes section 112(f). Importantly, however, I conclude that electing a narrow claim construction for claim 8, rather than invoking the limitations imposed by section 112(f), is likely to have no practical effect on the scope of the claim. As noted, construing the language of claim 8 narrowly would limit the scope of the claim to subject matter that is fairly within what the specification describes as the invention, together with any subject matter that may be encompassed within the doctrine of equivalents. On the other hand, if the scope of the term “self-actuated locking mechanism” were limited by section 112(f), Moskowitz’s claims would be limited to the structures disclosed in the specification and their equivalents. In both cases, the claim would be limited to the leaf spring and ratchet structures described in the specification and equivalents thereof.

B. “turning mechanism”

The parties next ask the court to construe the term “turning mechanism,” as used in claim 22 of the ’940 patent. Claim 22 is an apparatus claim reciting an “artificial expansile disc having first and second shells” and “an expansion mechanism positioned between the first and second

⁴ Even if I were to conclude that the term “self-actuated locking mechanism” is subject to section 112(f), dependent claims 9–12 do not present an insurmountable claim differentiation problem. As in *Nomos Corp. v. Brainlab USA, Inc.*, 357 F.3d 1364, 1368 (Fed. Cir. 2004), the patent here describes only one embodiment of the “self-actuated locking mechanism.” My “interpretation of the corresponding structure comes from the written description, not from dependent claim[s] [9–12] and, therefore, the ‘prohibition against reading limitations from a dependent claim into the independent claim is not violated.’” *Id.* (quoting *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991)).

shells and configured to expand the artificial expansible disc.” ’940 patent, col. 12, ll. 9–12. The expansion mechanism “comprises a turning mechanism configured to drive expansion between the first shell and the second shell in response to turning the turning mechanism.” *Id.* at col. 12, ll. 13–15. The claim further recites “a tool engagement portion positioned and configured to be engaged by a tool extending along a direction of insertion for rotating the turning mechanism.” *Id.* at col. 12, ll. 20–22. The specification of the ’940 patent does not refer to the term “turning mechanism,” but it does refer to “turning one or two pinions which then turns one or two central gears which in turn simultaneously controls expansive movement of right and left-handed bidirectional screws.” *Id.* at col 3, ll. 9–12. The specification further describes “the turning of a midline drive screw 100/pinion 104,” which results in the rotation of the pinion and the outward movement of two screws in opposite directions within the intervertebral disc space. *Id.* at col. 5, ll. 50–61.

NuVasive argues that the term “turning mechanism” is subject to the constraints of means-plus-function claiming because the description of the location, interaction, and operation of the “turning mechanism” is insufficient to denote a particular structure, and because the term “does not have any understood meaning in the art.” D.I. 54 at 12–13. Moskowitz disagrees, contending that the term “turning mechanism” denotes structure, not function. Moskowitz argues that the pertinent claim language describes the location, interaction, and operation of the turning mechanism in various embodiments of the claimed invention, and that those details provide “structural context.” D.I. 46 at 4–5. Therefore, according to Moskowitz, the term “turning mechanism,” in the context of the ’940 patent, refers to “a class of mechanical components that convert rotational input into movement. D.I. 58 at 2

As with the previous constructions, claim 22 of the '940 patent does not use the word “means,” so section 112(f) is presumed not to apply. While the term “mechanism” is broad and qualifies as a “nonce” word, the context in which the term “turning mechanism” is used imparts considerable specificity to the structure of the “turning mechanism” and the manner in which it interacts with the other elements of the device. As Moskowitz points out, claim 22 of the '940 patent describes the “turning mechanism” as a portion of the expansion mechanism, which is located between the two shells and creates increasing space between the shells “in response to turning” or “rotating the turning mechanism.” *See* '940 patent, col. 12, ll. 12–22. The claim also describes the “tool engagement portion,” which enables the user to insert a tool “extending along a direction of insertion for rotating” that allows the “turning mechanism” to be rotated, thereby causing the shells of the device to move in a manner facilitating engagement with the “vertebral endplate of the opposing vertebral bodies to hold the artificial expansile disc in place.” *Id.* at col. 12, ll. 23–36.

The various features recited in claim 22, when viewed together, provide a detailed description of how the claimed expansion mechanism operates. Viewed as a whole, claim 22 (and in particular the “turning mechanism” element) is not purely functional in nature, but describes structure that is largely defined by the detailed description of the manner in which the expansion mechanism operates and the role of the “turning mechanism” in that process. The user inserts a tool into the “tool engagement portion” of the “turning mechanism.” The rotation of the turning mechanism causes the expansion mechanism to expand or retract. As a result, the use of the term “turning mechanism” describes a sufficiently specific mechanical operation that it does not run afoul of the prohibition against purely functional claiming that is the concern underlying section 112(f).

Moskowitz points to two cases in which courts have found the terms “rotation mechanism” or “rotating mechanism” to have sufficient structure to avoid characterization as means-plus-function limitations. In the first case, *Accuhale, LLC v. AstraZeneca, LP*, No. 6:11-CV-707, 2013 WL 4045904, at *8 (E.D. Tex. Aug. 7, 2013), the court found that a person of ordinary skill in the art would understand the term “rotation mechanism” in the context of that case to describe “a class of structures that translate movement in one direction along an axis of a device into a rotational movement within a plane that is perpendicular to that axis.” The court therefore concluded that the term was not subject to section 112(f). In the second case, *Unicorn Global Inc. v. Golabs, Inc.* No. 3:19-CV-0754-N, 2020 WL 2745692, at *5–6 (N.D. Tex. May 26, 2020), the court also found that the term “rotating mechanism” should not be construed as a means-plus-function element. While the claim language in each of those cases is somewhat different from the language in this case, the parties’ arguments were similar to the argument in this case, and the courts’ analysis in each case, rejecting the application of section 112(f), was similar to the analysis I have employed in this case.

Accordingly, based on the language of claim 22, I construe the term “turning mechanism” to refer to a device that, when rotated, drives the expansion of a first shell with respect to a second shell.

C. “universal”

The term “universal” appears in a portion of the preamble to claim 1 of the ’293 patent. The preamble recites “[a] universal, intervertebral combination internal screw guide and fixation apparatus configured to be inserted into a disc space between a first vertebral body and a second vertebral body and to provide fusion of the first vertebral body to the second vertebral body via biological bone fusion and screw fusion.” ’293 patent, col. 12, ll. 42–44.

Moskowitz argues that the term “universal” in the preamble does not have the effect of limiting the claim, because the preamble as a whole should be treated as non-limiting. In support of that argument, Moskowitz relies on the principle that for a preamble to be limiting, it must provide essential structure or be “necessary to give life and meaning to the claim.” D.I. 46 at 6 (citing *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002)).

In the alternative, Moskowitz asserts that if the court concludes that the preamble is limiting, the term “universal” should be understood to refer to a device having the dual functionality of a “spacer” and “a screw-based fixation apparatus.” D.I. 46 at 7.

NuVasive contends that the term “universal” in the preamble is limiting because it discloses a feature of the apparatus and “provides antecedent basis for the rest of the claim.” D.I. 54 at 2 (quoting *Catalina Mktg. Int’l, Inc.*, 289 F.3d at 808). According to NuVasive, “the inventors contemplated using the same purported invention in different spinal regions and with different approaches,” and that the term “universal” was intended to convey that meaning. *Id.* at 2–4.

As both parties point out, the court in *Moskowitz Family LLC v. Globus Medical, Inc.*, No. CV 20-3271, 2021 WL 3784243, at *3 (E.D. Pa. Aug. 25, 2021), construed the term “universal” in a case involving patents related to the ones in this case.⁵ D.I. 46 at 6 n.4.; D.I. 54 at 1. In *Globus*, the parties made essentially the same arguments that the parties have presented here. In that case, Moskowitz argued in favor of defining the term “universal” according to its plain and ordinary meaning. According to Moskowitz, that meaning related to the device’s dual

⁵ The *Globus* court construed the term as it appeared in U.S. Patent Nos. 8,353,913 and 9,889,022. Those patents claim priority to the same application as the ’293 patent. See *Globus*, 2021 WL 3784243, at *1. The *Globus* case is currently pending on appeal before the Federal Circuit. At the claim construction hearing, the parties agreed that the Federal Circuit’s review of the district court’s construction of “universal” is relevant to this case. To the extent that the Federal Circuit’s decision in that case sheds light on claim construction or other issues in this case, I will adjust my analysis accordingly.

functionality as a spacer and a screw apparatus. The defendants in that case asserted that the term referred to the capacity to be modified to fit various spinal regions. *Globus Med., Inc.*, 2021 WL 3784243, at *4.

The *Globus* court first found the preamble to be limiting because: (1) it provided an antecedent basis for the term “the intervertebral cage” and for the terms “the first integral screw drive” and “the second integral screw guide”; (2) the preamble’s detailed description was “necessary to define the structure of the claimed device”; and (3) relatedly, the preamble contained the only claim language capturing the unique universal bidirectional screw system for the spine, such that “[a]bsent the limitations provided by the preamble, the body of the claims fails to capture a fundamental characteristic of the claimed invention.” *Moskowitz Fam. LLC v. Globus Med., Inc.*, No. CV 20-3271, 2022 WL 17876699, at *6–9 (E.D. Pa. Dec. 22, 2022).

The *Globus* court then construed the term “universal” to mean “an intervertebral bone fusion spacer designed to be inserted between [vertebrae/vertebral bodies] in any region of the spine, *i.e.*, cervical, thoracic, or lumbar, using any approach, *e.g.*, posterior, anterior, or lateral.” *Globus*, 2021 WL 3784243, at *4. In adopting that construction, the court pointed to multiple passages in the specification that “reflect the inventor’s intent that a universal invention is one that can be modified for use in any spinal region and via multiple surgical approaches.” *Id.*

The *Globus* court’s analysis is persuasive, and I adopt that court’s approach here. As to the limiting nature of the preamble in claim 1 of the ’293 patent, I find that the preamble recites essential structural features of the claim, thus giving meaning to the rest of the claim, and it provides an antecedent basis for the term “biological bone fusion,” which appears in the body of the claim. *See Catalina Mktg. Int’l, Inc.*, 289 F.3d at 808 (quoting *Pitney Bowes, Inc. v. Hewlett-*

Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999)) (“a preamble limits the invention if it recites essential structure or steps, or if it is ‘necessary to give life, meaning, and vitality’ to the claim”).

The Federal Circuit has held that the preamble to a claim is typically not limiting if the claim employs the preamble “only to state a purpose or intended use for the invention.” *Catalina*, 320 F.3d at 808. By contrast, the court has held that a preamble is limiting if it sets forth the “essence” or the “fundamental characteristic of the claimed invention,” *Vizio, Inc. v. Int’l Trade Comm’n*, 605 F.3d 1330, 1340 (Fed. Cir. 2010), or if it “recites essential elements of the invention,” *Eli Lilly & Co. v. Teva Pharms. Int’l GmbH*, 8 F.4th 1331, 1341 (Fed. Cir. 2021); *see also In re Xencor, Inc.*, 130 F.4th 1350, 1358 (Fed. Cir. 2025); *Poly-Amer., L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1310 (Fed. Cir. 2004). Similarly, the preamble is regarded as limiting if the claim drafter “chooses to use *both* the preamble and body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects.” *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006) (quoting *Bell Commc’ns Rsch., Inc. v. Vitalink Commc’ns Corp.*, 55 F.3 615, 620 (Fed. Cir. 1995)).

In this case, the preamble to claim 1 of the ’293 patent does more than simply state the purpose or intended use for the invention. It contains a physical description of the inventive device and the means by which the device achieves the objective of the invention. The preamble thus sets forth the “essence” or the “fundamental characteristic of the claimed invention.” *Vizio*, 605 F.3d at 1340. Without the preamble, the claim describes only an “intervertebral cage” consisting of four walls defining an open space and an internal screw guide. The preamble gives meaning to the cage by explaining that the device is to be implanted to provide fusion of the vertebral bodies by way of “biological bone fusion and screw fusion.” ’293 patent, col. 12, ll. 44–47.

The reference to “biological bone fusion” in the preamble also provides an antecedent basis for the use of that term when it is used in describing the “open space capable of receiving bone filling for the biological bone fusion.” *Id.* at col. 12, ll. 50–51. For that reason as well, I regard the preamble to claim 1 of the ’293 patent as limiting. *See Pacing Techs., LLC v. Garmin Int’l, Inc.*, 778 F.3d 1021, 1024 (Fed. Cir. 2015) (When “limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention.”) (quoting *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2015)). Thus “dependence on a particular disputed preamble phrase for antecedent basis may limit claim scope because it indicates a reliance on both the preamble and claim body to define the claimed invention.” *Catalina*, 289 F.3d at 808.

The *Globus* court provided an extensive analysis of the limiting nature of the preamble. *See Globus Med., Inc.*, 2022 WL 17876699, at *4–10.⁶ For the reasons given above and in the *Globus* case, I adopt that court’s reasoning with respect to the limiting nature of the preamble.

As for the proper construction of the term “universal” in the ’293 patent, the claim specifically recites an “intervertebral combination internal screw guide and fixation apparatus.” That description is immediately preceded by the disputed term “universal.” ’293 patent, col. 12, ll. 42–43. To adopt Moskowitz’s proposed alternative construction of that term would result in

⁶ While it is possible that only a portion of the preamble may be limiting in some cases, *see TomTom, Inc. v. Adolph*, 790 F.3d 1315, 1323–24 (Fed. Cir. 2015), that is not the case for the term “universal.” Even if the portion of the preamble reciting “[a] universal, intervertebral combination internal screw guide and fixation apparatus,” ’293 patent, col. 12, ll. 42–43, were considered separately from the remainder of the preamble, the “universal” part of the preamble does not “simply recite a method for an intended use or purpose” for the invention. *See Bio-Rad Lab’ys, Inc. v. 10X Genomics Inc.*, 967 F.3d 1353, 1371 (Fed. Cir. 2020). To the contrary, the full preamble to the ’293 patent’s claim 1 “provides a *raison d’être* for the claim.” *See In re Xencor, Inc.*, 130 F.4th 1350, 1359 (Fed. Cir. 2025). I find that “universal” is a limiting term that should not be “read separately from the remainder of the preamble.” *Bio-Rad Lab’ys, Inc.*, 967 F.3d at 1371.

the term “universal” effectively repeating the combined screw guide and fixation apparatus that follows: “A [dual functionality intervertebral spacer and transvertebral bone fusion screw apparatus], intervertebral combination internal screw guide and fixation apparatus configured to be inserted into a disc space.” *Id.* at col. 12, ll. 41–44; *see* D.I. 46 at 6. It seems unlikely that the claim drafter would have intended such redundancy.

The specification provides additional guidance as to the proper construction of claim 1, which also points away from Moskowitz’s proposed construction. As NuVasive observes, the patent at issue here shares the same specification as the patents at issue in *Globus*. D.I. 54 at 1. The ’293 patent discusses how the device can be used in the lumbosacral and thoracic spine both posteriorly and anteriorly. ’293 patent, col. 1, ll. 35–43; col. 3, ll. 50–52. The specification also notes how the designs are “easily modifiable” and can be “enlarged and modified to be suitable for cervical, thoracic and lumbar vertebral body replacements.” *Id.* at col. 3, ll. 39–43. The summary of the invention describes the use of “screws which can be strategically inserted via anterior or posterior surgical spinal approaches into the anterior and middle columns of the intervertebral disc space.” *Id.* at col. 2, ll. 32–37. I find the specification persuasive in determining what the inventors intended by “universal.”

Moskowitz argues that the term “universal” cannot mean a “one-size-fits-all device,” because that would “require a single device to accommodate materially different spinal anatomies, including variations in intervertebral spacing, lordotic angles, and endplate geometry.” D.I. 58 at 3–4. But construing the term to mean a device that is capable of use in different regions with different methods of insertion does not necessarily mean that a single version of the device must be “one-size-fits-all.” Also, the device recited in independent claim 1 must be broad enough to include the dependent claims. And dependent claims 13, 14, and 16 point to different spinal

regions where the device could be placed. *See* '293 patent, col. 13, ll. 35–40, 44–48 (describing cervical, lumbar, and thoracic placement). The dependent claims thus serve to reinforce that the term “universal” should be construed to refer to a device’s suitability to be used in multiple spinal regions.

Like the court in *Globus*, I find that the term “universal” was intended to refer to a device that can be used in various spinal regions with various surgical methods of inserting the device. Accordingly, I adopt the construction advanced by NuVasive and employed by the *Globus* court. I construe the term “universal” to mean “an intervertebral bone fusion spacer designed to be inserted between [vertebrae /vertebral bodies] in any region of the spine, *i.e.*, cervical, thoracic, or lumbar, using any approach, *e.g.*, posterior, anterior, or lateral.”

D. “shell”

The term “shell” appears in claims 22, 25, and 29 of the '940 patent. Claim 22 describes the “artificial expansile disc” as having “an expansion mechanism” between “first and second shells.” '940 patent, col. 12, ll. 9–12. That claim recites that the “shells engag[e] opposing vertebral bodies when inserted into the intervertebral space” and that each shell has “engagement features” that extend from it to “hold the artificial expansile disc in place.” *Id.* at col. 12, ll. 17–20, 23–31. Claims 25 and 29, both of which depend from claim 22, add a directional limitation to the engagement features and provide that the engagement features extend from holes in the shells in the case of claim 29. *See id.* at col. 12, ll. 47–50, 60–67.

Moskowitz argues that the term “shell” simply describes “the exterior structure of the artificial expansile disc.” D.I. 46 at 9. NuVasive argues that the shell must be capable of moving in at least two directions because the specification defines the term “shell” with its reference to PCT Patent Application PCT/US2005/016493, which required such movement. D.I. 54 at 5; *see*

id. at col. 7, ll. 33–35. These are substantially the same positions taken by Moskowitz and the defendants in the *Globus* case. *See Globus*, 2021 WL 3784243, at *8. The *Globus* court agreed with Moskowitz’s construction because the reference to the PCT application indicated “an intent to incorporate the Application’s prior disclosure and not to define ‘shell.’” *Id.* (citation omitted). Additionally, the court found it improper to read the movement limitations proposed by the defendants from the specification into the claims. *Id.*

I agree with the *Globus* court. I am unconvinced that the reference to the PCT application in the specification conveyed an intent to define the term “shell” by incorporating movement limitations. While it is true that the specification explains that the shell is designed to move, that is not sufficient to justify adding the requirement of capacity to move to the definition of the simple term “shell.” To justify using the specification to define a term in a manner that goes beyond the term’s ordinary meaning, the specification must “clearly set forth a definition of the disputed claim term” and “the patentee must clearly express an intent to redefine the term.” *Thorner v. Sony Computer Ent. Am. LLC*, 669 F.3d 1362, 1365–66 (Fed. Cir. 2012) (citation modified) (citations omitted). I do not find those conditions to be present here. I agree with Moskowitz that NuVasive is asking the court to read a movement limitation into claim 22 from the specification, and that doing so creates two problems.

First, claim 27 depends from claim 22 and requires the disc to “expand geometrically in two dimensions,” which would mean that the shells also expand in those two dimensions. Construing the term “shell” to require movement in two directions would effectively make dependent claim 27 identical to claim 22, which would be contrary to principles of claim differentiation.

Second, requiring the shell to move in two directions would exclude Embodiment II, which is described in the specification and is shown in Figures 2A–G of the patent. ’940 patent, col. 6, ll. 8–20; *see Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1276 (Fed. Cir. 2008) (citing cases) (“We normally do not interpret claim terms in a way that excludes embodiments disclosed in the specification.”). The “outer shells” are depicted as numeral 212 in Figure 2A, and those “shells” do not appear to move with the “bidirectional movement” associated with the driving pinion, gears, and screws. ’940 patent, col. 6, ll. 10–13. Thus, the shells do not move in two directions, and adopting NuVasive’s proposed construction would exclude that embodiment from the scope of the claim. At the claim construction hearing, NuVasive argued that the embodiments that would be excluded are not covered by the claims that are at issue in this case. But that point is irrelevant. Absent specific redefinition, a claim term must be construed consistently across the patent as a whole, not just across those claims that happen to be asserted in a particular case.

Accordingly, I adopt the construction proposed by Moskowitz, which is similar to the *Globus* court’s construction. *See Globus*, 2021 WL 3784243, at *8 (“an exterior structure of the artificial expansile spinal implant.”). I construe the disputed term “shell” to mean “an exterior structure of the artificial expansile disc.”

E. “coupled” and “interconnected”

The final two terms that the parties ask to be construed are the term “coupled,” which appears in claims 4, 5, 14, and 15 of the ’088 patent, and the term “interconnected,” which appears in claim 14 of the ’284 patent.

In the ’088 patent, claims 4 and 5 are dependent claims that describe how the first and second bodies of the expandable spinal spacer device are “coupled” by one or two pins. ’088 patent, col. 14, ll. 42–46. Claim 14 is an independent claim in which the coupled first and second

bodies move relative to each other, allowing the device to transition from a compressed to an expanded configuration. *Id.* at col. 15, ll. 16–20. Claim 15 depends from claim 14 and requires the bodies to be “coupled” with two pins. *Id.* at col. 16, ll. 18–19.

In the ’284 patent, claim 14 describes two housings of an “expandable interbody device” that are “hingedly interconnected such that the first housing can pivot with respect to the second housing.” *Id.* at col. 16, ll. 52–58.

Moskowitz contends that these terms should be given their plain and ordinary meaning. D.I. 46 at 11. If the claims are construed more specifically, Moskowitz argues that the terms should be construed to include both direct and indirect connections, for two reasons: first, because the patents use the terms “coupled” and “attached” interchangeably, and second because the patents describe the connections to include connections with pins or linkage arms, which are indirect connections. *Id.* at 12. NuVasive responds that the terms should be construed to be limited to direct connections because the connections described by the patent have “no intervening component that creates an offset between the connection points,” even in the case of connections with pins or through a linkage. D.I. 54 at 6–9.

In the claims of the ’088 patent, the term “coupled” refers to connecting two bodies in such a way that they are “movable relative to one another,” which may include the use of pins. *See* ’088 patent, col. 14, ll. 5–12 (claim 1, from which claims 2 and 4 depend); col. 14, ll. 42–46; col. 15, ll. 14–20. The proper construction of “coupled” must therefore be broad enough to include that way of connecting the two bodies.

The specification also provides descriptions of embodiments in which the housings are “coupled or attached by one or more pins” that allow the top and bottom housings to rotate “relative to each other about the axis of the pins.” *Id.* at col. 8, ll. 9–13; *e.g., id.* at col. 7, ll. 50–54; col. 8,

ll. 40–44; *see also id.* at col. 6, ll. 51–54 (coupled by a “diagonal dovetail interface”). In one embodiment discussed in the specification, an internal linkage arm and two external linkage arms connect the top and bottom housings. *Id.* at col. 7, ll. 20–25. The claims and the specification of the ’088 patent point toward a broad interpretation of the term “coupled” that includes pins and linkage arms that are used to connect the bodies but that allow the bodies to move relative to each other.

In claim 14 of the ’284 patent, the first housing and the second housing are “hingedly interconnected” such that the first housing can pivot with respect to the second housing. ’284 patent, col. 16, ll. 53–56. Claim 15 further recites that the two housings “are hingedly interconnected via at least two pins.” *Id.* at col. 17, ll. 27–29. Even claim 17, which recites a “means for attaching” the housing and depends from claim 14, requires that the connection be effected by a hinge. *Id.* at col. 17, ll. 27–29, 34–35. The specification of the ’284 patent provides descriptions of embodiments in which the housings are “coupled or attached by one or more pins” that allow the top and bottom housings to rotate “relative to each other about the axis of the pins.” *Id.* at col. 8, ll. 54–58; *see e.g., id.*, col. 8, ll. 28–32; col. 9, ll. 18–22.

The specification of the ’284 patent further includes, as an exemplary embodiment, a “ZP-EIS device” in which internal and external linkage arms create a “scissor jack expansion mechanism.” *Id.* at col. 7, ll. 65–67; col. 8, ll. 1–3. According to Moskowitz, that type of connection is an indirect connection, and construing “interconnected” to require a direct connection would exclude that embodiment. D.I. 46 at 12. NuVasive responds that the ZP-EIS device is not an embodiment of the asserted claims, because all the claims that Moskowitz has asserted are “wedge driven.” D.I. 54 at 8. But that argument is based on a false premise. Regardless of the claims that the plaintiff has chosen to assert, the disputed terms must be

construed consistently with the patent as a whole. Construing the term “interconnected” to require a direct connection, which would exclude disclosed embodiments having “linkage arms,” would appear to be contrary to the construction intended by the drafter. *See Oatey Co.*, 514 F.3d at 1276 (citing cases).⁷

The court must answer whether the use of hinges and pins requires a narrow construction of “interconnected” and “coupled” that would exclude indirect connections by requiring that any such interconnection be “directly connected.” I cannot agree that the use of hinges and pins has that effect. Imposing that requirement via claim construction would mean that the court would have to decide whether the use of hinges, pins, or other methods of joining components falls within the category of a “direct” or “indirect” connection. I find that drawing that distinction is unnecessary. For both the terms “coupled” and “interconnected,” construing the disputed terms to require a “direct” connection imposes a limitation that is unsupported by the claims or specifications of the patents at issue.

In reviewing a district court’s construction of the term “joined,” as used in a patent involving DNA sequences, the Federal Circuit held that “[t]o be joined or connected does not necessitate a *direct* joining or connection.” *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed. Cir. 1997). In that case, there was no indication that the joined nucleotides had to be directly connected, which meant that the term “joined” was broad enough to include sequences in which there were intervening nucleotides between the two “joined” nucleotides. *Id.* Although the technology in that case was quite different from the technology in this case, the concept of being “joined” applies in the same manner in both settings. Applying similar analysis, I find that there

⁷ The principle set forth in the *Oatey* case and others applies unless probative evidence indicates otherwise, *see SIMO Holdings Inc. v. Hong Kong uCloudlink Network Tech. Ltd.*, 983 F.3d 1367, 1378–79 (Fed. Cir. 2021), which is not the case here.

is no requirement to restrict the terms “coupled” or “interconnected,” as used in the ’088 or ’284 patents, to require a direct connection between two elements. Giving the terms “coupled” and “interconnected” their ordinary meaning, I construe those terms to include both direct and indirect joining.

In summary, I construe “screw locking mechanism” (in the ’363 patent) to be a means-plus-function limitation. I construe “screw lock” (in the ’753 patent), “self-actuated locking mechanism” (in the ’743 patent), and “turning mechanism” (in the ’940 patent) not to be means-plus-function limitations. I construe the disputed terms “universal” (in the ’293 patent) and “shell” (in the ’940 patent) consistently with the previous constructions of those terms by the district court in *Globus*. Finally, I construe the terms “coupled” (in the ’088 patent) and “interconnected” (in the ’284 patent) to include joining that is either direct or indirect.

II. Indefiniteness

In addition to the disputed terms, the parties disagree about whether four terms among the asserted patents are indefinite. The four terms that NuVasive contends are indefinite are: “reusable for a limited number of cycles” (’363 patent), “greater flexibility” (’743 patent), “bendable and reusable” (’753 patent), and “screw fusion” (’293 patent).

“[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). “Indefiniteness must be proven by clear and convincing evidence.” *Sonix Tech. Co. v. Publications Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017) (citing *Teva Pharms. USA, Inc.*, 789 F.3d at 1345).

A. “reusable for a limited number of cycles”

The term “reusable for a limited number of cycles” appears in claim 26 of the ’363 patent. That claim depends from claim 1 and requires that the first screw-locking mechanism “is reusable for a limited number of cycles.” ’363 patent, col. 17, ll. 4–6. NuVasive argues that the phrase “reusable for a limited number of cycles” is indefinite because the patent does not provide “objective bounds” defining the number of cycles for which the device is reusable. D.I. 54 at 14–15. NuVasive does not argue that a precise number of cycles is required, but it contends that some measure beyond “several,” as recited in the specification, is needed for a person of ordinary skill to understand the scope of the invention. *Id.*; see ’363 patent, col. 12, ll. 37–39. According to Moskowitz, the term is not indefinite but simply means that the locking mechanism is designed to be “actuated more than once, but not indefinitely.” D.I. 46 at 15.

“Claim language employing terms of degree has long been found definite where it provided enough certainty to one of skill in the art when read in the context of the invention.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014). For indefiniteness, only a “reasonable certainty . . . about the scope of the invention” is required. *Nautilus*, 572 U.S. at 901.

The specification of the ’363 patent provides additional context from which to understand the phrase “limited number of cycles” in claim 26. The specification explains that after locking the screws, a surgeon could “change [] his mind intra-operatively,” or the device could need to be removed at a later date. ’363 patent, col. 12, ll. 35–37. The specification then suggests that “[t]he locking mechanism has several cycles of use, and thus screws once backed out, can be re-screwed and re-locked.” *Id.* at col. 12, ll. 37–39. Read in the context provided by the specification, the phrase a “limited number of cycles” is not indefinite.

Claim 26 employs the term “reusable” to refer to the claimed screw-locking mechanism. “Reusable” simply means that the screw locking mechanism can be used more than once. The specification’s “several cycles of use” provides sufficient guidance to a person of ordinary skill to form the upper limit, especially considering the surgical nature of the implant device. A person of ordinary skill in the art would understand with reasonable certainty that the claim term must mean more than one cycle of use, but not hundreds. The limited circumstances under which the screw could be unlocked and relocked during a surgical procedure, as suggested by the specification, also makes clear that there is a limit to the number of such cycles. *See Ironburg Inventions Ltd. v. Valve Corp.*, 64 F.4th 1274, 1290–91 (Fed. Cir. 2023) (affirming claims as not indefinite because “reasonable certainty as to claim scope” to a skilled artisan was supported by the specification and the “need to meet the purpose of the invention”).

The drafter could have omitted the phrase “for a limited number of cycles” and achieved the same result by simply claiming a reusable screw locking mechanism. In light of the specification, the references to “reusable for a limited number of cycles” clearly means reusable for several cycles, but not for an unlimited number. As such the claim language is not fatally indefinite.

B. “greater flexibility”

The parties also disagree about whether the term “greater flexibility,” as used in claim 3 of the ’743 patent, is indefinite. Claim 3 depends from claims 1 and 2 and requires that “the first surface has a greater flexibility than the first screw head.” ’743 patent, col. 19, ll. 31–32.

Moskowitz argues that the term simply means that the first surface is more flexible than the first screw head. D.I. 46 at 16. NuVasive contends that the term “greater flexibility” is indefinite because (1) it fails to specify the type of deformation that is intended, i.e. whether

“plastic” or “elastic” deformation is intended; (2) a person of ordinary skill in the art would not know the extent of the prescribed flexibility; and (3) under Moskowitz’s definition of the term “greater flexibility,” claim 3 would violate the principle of claim differentiation, because claim 3 would have the same scope as claim 2, which refers to the first surface engaging the first screw head when the first screw head is forced past the first surface. D.I. 54 at 17. According to NuVasive, the limitation in claim 2 that the first screw head is forced past the first surface already sets forth the requirement of “greater flexibility.” *Id.* Moskowitz responds that the term is not indefinite and that it means that “one component flexes more than the other under load.” D.I. 46 at 16.

I agree with Moskowitz. The term “greater flexibility” offers a straightforward comparison between two materials. The type of deformation of the first surface is irrelevant, whether it is plastic or elastic deformation, as is the degree of the difference in flexibility. As for the distinction between claim 2 and claim 3, claim 2 requires the first surface to engage the first screw head when “forced past the first surface.” ’743 patent, col. 19, ll. 28–30. Claim 3, which depends from claim 2, adds the limitation that the first surface must be more flexible than the first screw head when the screw head is forced past the first surface. Claim 3 is thus clearly more restrictive than claim 2. If both the first screw and the first surface are made of the same material, for example, the first screw could be forced past the first surface even though the two were equally flexible. The claim differentiation argument presented by NuVasive is therefore unpersuasive. In sum, I find that the term “greater flexibility” is not indefinite, and I construe the term to refer to a direct comparison in which the first surface is “more flexible” than the first screw head.

C. “bendable and reusable”

Similarly, the parties disagree as to whether the phrase “bendable and reusable” in claim 33 of the ’753 patent is indefinite. Claim 33 depends from claim 31, which describes “curved metal” screw locks around at least part of the screw; claim 33 adds the limitation that the screw locks are “bendable and reusable.” ’753 patent, col. 21, ll. 60–67; col. 22, ll. 1–17, 23–24. According to NuVasive, the terms “bendable and reusable” are indefinite, or in the alternative should be construed to mean “configured to deform and return to its original configuration to enable reuse.” D.I. 54 at 17–19. NuVasive says the patent does not specify the conditions or type of deformation, and that claim 1’s “configured to deform” requirement creates a claim construction problem by equating the term with “bendable.” *Id.* at 18; ’753 patent, col. 18, line 17. Moskowitz argues that the terms “bendable and reusable” are not indefinite. D.I. 46 at 17. According to Moskowitz, “bendable” refers to “the lock’s ability to bend as part of its intended operation,” and “reusable” means “capable of being used more than once without structural failure.” *Id.*

As the Federal Circuit has held with respect to the terms “resilient” and “pliable,” I find the terms “bendable” and “reusable” may be “broad, but they are not uncertain.” *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1349 (Fed. Cir. 2022) (finding the terms “not purely subjective” based on in the intrinsic record). The specification discusses an embodiment that includes a screw-locking mechanism that can be “manufactured from a variety of materials, such as titanium.” ’753 patent, col. 9, ll. 17–19. Additionally, the screws “lock by mechanically indenting the screw locking mechanism,” which “can be reused for a limited number of cycles.” *Id.* at col. 9, ll. 19–23. The description of a screw lock that has the quality of being bendable or capable of more than one use is not indefinite.

NuVasive’s claim construction in support of its argument is unconvincing. The term “bendable and reusable” is found in claim 33, which depends from independent claim 31; claim 33 does not contain the same “configured to deform” language as claim 1. The claim drafter was free to use different terms in the different claims, especially when considered in light of the different independent claims from which the different dependent claims depend.

Accordingly, I find the term “bendable and reusable” not to be indefinite. I construe those terms, based on their plain and ordinary meaning, to denote “able to bend and to be capable for being used more than once under normal circumstances.”

D. “screw fusion”

The final term in dispute is “screw fusion,” which appears in claims 1 and 43 of the ’293 patent; claim 1 of the ’854 patent, claims 1 and 31 of the ’753 patent, and claim 1 of the ’743 patent. The term “screw fusion” is used across those patents to refer to the fusion of the first vertebral body to the second vertebral body by biological bone fusion, which is facilitated by screw fixation of the separate bone components. ’293 patent, col. 12, ll. 44–47, and col. 16, ll. 42–43; ’854 patent, col. 12, ll. 61–63; ’753 patent, col. 17, ll. 45–46; col. 21, ll. 21–23; ’743 patent, col. 18, ll. 62–64. The term appears in the preambles of each of the claims at issue except for the ’854 patent, where the term appears in the body of claim 12.

NuVasive argues that the term “screw fusion” is indefinite. While acknowledging that the term “bone fusion” is a term of art, NuVasive argues that the term “screw fusion” is not. NuVasive adds that “Moskowitz misleadingly conflates bone fusion with screw fixation,” and that “screw fusion” is indefinite. D.I. 54 at 15. Under principles of claim construction, NuVasive argues, the term screw fusion “must mean something different from screw fixation.” *Id.* at 16. NuVasive further contends that the term “screw fusion” as used in the various claim preambles is limiting,

and it argues that the term should be construed to mean “fusion between two adjacent intervertebral bodies based on the use of screws having a predetermined, fixed trajectory.” *Id.*

Moskowitz asserts that the term “screw fusion” is not indefinite. According to Moskowitz, the term means “fusion facilitated by mechanical stabilization of bones using one or more screws.” In the patents in which the term appears in the preamble, Moskowitz argues that the term should not be treated as limiting. D.I. 46 at 13–15.

As an initial matter, I agree with NuVasive that the preambles are limiting for the claims at issue in the ’293 patent, the ’753 patent, and the ’743 patent, the claims in which that term appears in the preamble. First, the preamble in claim 1 of the ’293 patent provides an antecedent basis for the term “biological bone fusion,” and the preamble in claim 43 of that patent provides an antecedent basis for the term “intervertebral cage.” ’293 patent, col. 12, ll. 46, 50–51; col. 16, ll. 40, 51–52.⁸ Next, in both claims 1 and 31 of the ’753 patent, the preamble describes “a first vertebral body and a second vertebral body,” a description that provides a structural basis for the directional limitations that follow, such as “a first vertebral body facing surface.” ’753 patent, col. 17, ll. 44, 51–52; col. 21, ll. 19–20, 26–27; *see Bicon, Inc.*, 441 F.3d at 953 (the preamble was limiting because “the claim . . . refers back to the features of the [structure of the abutment]

⁸ The Federal Circuit has expressed a “disinclination to splice a preamble into limiting and non-limiting parts.” *In re Xencor, Inc.*, 130 F.4th at 1358 (citation modified) (citation omitted). In the ’293 patent, the term “screw fusion” appears in the part of the preamble describing “fusion . . . via biological bone fusion and screw fusion.” *See* ’293 patent, col. 12, ll. 46–47, 50–51; col. 16, ll. 43, 55. The part of the preamble containing the term “screw fusion” in those cases would be limiting because the terms “biological bone” provides an antecedent basis for its use later in the claims. *See Bio-Rad Lab’s, Inc.*, 967 F.3d at 1371 (“Based on the antecedent relationship, it is clear the claim drafters intended to limit the claimed methods . . . using both the preamble and the body of the claim to define the claimed invention.”). The ’743 patent’s use of “intervertebral implant” in the preamble of claim 1 is similar. *See* ’743 patent, col. 18, ll. 63–64, col. 19, line 5. In both patents, the part of the preamble containing the term “screw fusion” is limiting, at least because it provides an antecedent basis for terms found in the bodies of the respective claims.

described in the preamble”). Finally, for claim 3 of the ’743 patent, the preamble provides an antecedent basis for the term “intervertebral implant.” ’743 patent, col. 18, line 64; col. 19, line 5.

I also find that the preambles are necessary to give meaning to the claims. *See Catalina Mktg. Int’l, Inc.*, 289 F.3d at 808 (Fed. Cir. 2002) (quoting *Pitney Bowes, Inc.*, 182 F.3d at 1305). For example, the preamble of claim 1 of the ’753 patent explains that the apparatus is “to be inserted into a disc space” to provide for the fusion of two vertebral bodies. ’753 patent, col. 17, ll. 43–46. Without that explanation, the subsequently claimed spacer, surfaces, open space, screw guides, screws, and screw locks have little meaning or purpose beyond what can be inferred from the discussion of biological bone fusion and vertebral bodies in relation to the claimed elements. *See id.* at col. 17, ll. 51–57.⁹ To varying degrees, the other claims at issue follow the same pattern in giving meaning to the claims. Thus, I find the preambles to be limiting.

With regard to indefiniteness, the specification of the ’293 patent describes how the device “functions as both an intervertebral bone fusion spacer and bi-directional transvertebral screw fusion device.” ’293 patent, col. 7, ll. 65–67. The specification later describes how the holes and hollow spaces of the screw box “allow[] packing of bone to achieve biological fusion.” *Id.* at col. 8, ll. 20–21. After discussing biological fusion with bone filler material, the specification states: “The combined effect of one superior oriented and one inferior oriented screw fuses the superior and inferior vertebral bodies with small constructs.” *Id.* at col. 8, ll. 22–24.

⁹ If I were to split the preamble in the ’753 patent, the section containing “screw fusion” would have to be regarded as limiting, because it explains how the apparatus “provide[s] fusion,” *i.e.*, “via biological bone fusion and screw fusion.” *See* ’753 patent, col. 17, ll. 45–47; col. 21, ll. 20–22. That term thus “gives life” to the entire claim and is more than “a mere statement of purpose or a statement of intended result that does not affect the performance of the claimed method.” *See In re Xencor, Inc.*, 130 F.4th at 1359 (citation omitted). For that reason, even looking only at the part of the preamble containing the term “screw fusion” still results in that part of the preamble being limiting.

I am persuaded that a person of ordinary skill in the art would understand with reasonable certainty the meaning of the term “screw fusion.” In the specification of the ’293 patent, the description of how screws in specific orientations can help fuse the vertebral bodies follows a discussion of “biological fusion.” *See* ’293 patent, col. 8, ll. 22–24. NuVasive argues that Moskowitz’s patents use the term “screw fixation” and that the term “screw fusion” must mean something different from “screw fixation.” Accordingly, NuVasive contends that the term “screw fusion” is indefinite. *See* D.I. 54 at 16. But that does not follow.

Pointing to a line in the specification about the screw guide’s prescribed angles, NuVasive also argues for a construction that includes the “use of screws having a predetermined, fixed trajectory.” *Id.* at 15–17; *see* ’293 patent, col. 3, ll. 21–25 (“The novelty of this design is the built-in prescribed angles of the integral screw guides which allow the posterior transvertebral penetration into the vertebral bodies.”). There are clear indications in the patent, however, that “screw fusion” should not be construed in such a limited way. Claim 4 in the ’293 patent, for example, adds the requirement that the screw guide permit “only a predetermined angled trajectory of a screw member.” ’293 patent, col. 12, ll. 65–67. Including a predetermined trajectory in the construction of “screw fusion,” as NuVasive contends, would import a limitation from the specification into the claim, creating a claim differentiation problem by rendering dependent claim 4 unnecessary.

As a matter of claim construction, I agree with Moskowitz that “bone fusion” and “screw fusion” are “compl[e]mentary aspects of the same clinical objective.” D.I. 58 at 6. While it is possible that bones may biologically fuse without screws, the purpose of the screws is to provide “mechanical stabilization that enables [bone] fusion.” *Id.* The term “screw fusion” describes the stabilization function performed by the screws that enhances the process of bone fusion between

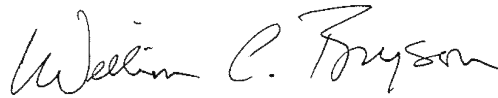
vertebral bodies. Accordingly, I construe the term “screw fusion” to refer to “bone fusion facilitated by screw-based stabilization.” As such, I conclude that the term is not indefinite.

III. Conclusion

I have considered the other arguments raised by the parties, which do not affect my conclusions regarding claim construction. For the reasons discussed, I construe the disputed terms to have the meanings provided above, and I find that none of the challenged claim terms are indefinite.

IT IS SO ORDERED.

SIGNED this 29th day of June, 2026.

A handwritten signature in black ink, reading "William C. Bryson". The signature is fluid and cursive, with the first name "William" and last name "Bryson" clearly distinguishable.

WILLIAM C. BRYSON
UNITED STATES CIRCUIT JUDGE