

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

STRAUMANN USA, LLC,
Petitioner,

v.

SMART DENTURE CONVERSIONS, LLC,
Patent Owner.

Case No. PGR2025-00054

U.S. Patent No. 12,156,781

PETITIONER'S REPLY

TABLE OF CONTENTS

TABLE OF AUTHORITIES.....	iii
UPDATED EXHIBIT LIST	v
I. Straumann’s POSA Definition Is Correct.....	1
II. Ground 1	3
A. Claim 6	3
B. Claims 10-16	3
III. Ground 2	5
A. Different-Thread Limitations Shorthand.....	6
B. Different-Thread Limitations Are Not Supported.....	9
1. Asymmetric Threads	9
2. Symmetric Threads With Slot	12
3. Interference Fit.....	14
C. Release Limitations Are Not Supported.....	15
1. Asymmetric Threads Without Slot.....	15
2. Interference Fit.....	18
D. SDC’s Cases Are Distinguishable	18
E. Brunski Did Not Use Different POSAs.....	19
F. No Support “At Least For” Figure 75	19
G. No “Implicit” Construction	20
H. Dependent Claims Are Not Supported.....	21
I. “Securing the Coping” Limitation.....	21
J. “Does Not Engage Continuously” Limitation.....	22

K.	“Deform” Limitations	22
L.	“Configured To Release” Limitation.....	23
M.	“Maximal Width” Limitation	24
N.	Enablement	25
IV.	Grounds 3 and 4.....	25
A.	Combinations Meet Different-Thread Limitations	25
B.	Motivation to Combine	26
C.	No Teaching Away.....	28
V.	Conclusion	29

TABLE OF AUTHORITIES

Cases

<i>Ariad Pharms., Inc. v. Eli Lilly & Co.</i> , 598 F.3d 1336 (Fed. Cir. 2010).....	9, 19
<i>Chef Am., Inc. v. Lamb-Weston, Inc.</i> , 358 F.3d 1371 (Fed. Cir. 2004).....	21
<i>D Three Enters., LLC v. SunModo Corp.</i> , 890 F.3d 1042 (Fed. Cir. 2018).....	10, 14
<i>DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.</i> , 567 F.3d 1314 (Fed. Cir. 2009).....	29
<i>Durr Sys., Inc. v. EFC Sys., Inc.</i> , 2026 U.S. App. LEXIS 8239 (Fed. Cir. Mar. 20, 2026).....	2
<i>Ex Parte Miyazaki</i> , 2008 WL 5105055 (B.P.A.I. Nov. 19, 2008)	24
<i>Ex Parte Wang</i> , 2014 WL 1005328 (P.T.A.B. Jan. 9, 2014).....	24
<i>Flash-Control, LLC v. Intel Corp.</i> , 2021 U.S. App. LEXIS 20790 (Fed. Cir. July 14, 2021).....	13
<i>Gillette & Co. LLC v. Sphere USA, LLC</i> , 2023 Pat. App. LEXIS 3126 (P.T.A.B. Sept. 19, 2023).....	18, 19
<i>ICU Med., Inc. v. Alaris Medical Sys., Inc.</i> , 558 F.3d 1368 (Fed. Cir. 2009).....	20
<i>Intel Corp. v. PACT XPP Schweiz AG</i> , 61 F.4th 1373 (Fed. Cir. 2025).....	28
<i>LizardTech, Inc. v. Earth Res. Mapping, Inc.</i> , 424 F.3d 1336 (Fed. Cir. 2005).....	25
<i>Lockwood v. American Airlines, Inc.</i> , 107 F.3d 1565 (Fed. Cir. 1997).....	passim

<i>Maxell, Ltd. v. Amperex Tech. Ltd.</i> , 2025 U.S. App. LEXIS 1442 (Fed. Cir. Jan. 23, 2025)	28
<i>Medtronic, Inc. v. Teleflex Innovations, S.A.R.L.</i> , 69 F.4th 1341 (Fed. Cir. 2023)	18, 19
<i>Novozymes A/S v. DuPont Nutrition Biosciences APS</i> , 723 F.3d 1336 (Fed. Cir. 2013)	13, 18, 22
<i>Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.</i> , 707 F.2d 1376 (Fed. Cir. 1983)	2
<i>Palo Alto Networks, Inc. v. Centripetal Networks, LLC</i> , 122 F.4th 1378 (Fed. Cir. 2024)	25
<i>PGS Geophysical AS v. Iancu</i> , 891 F.3d 1354 (Fed. Cir. 2018)	28
<i>Tronzo v. Biomet, Inc.</i> , 156 F.3d 1154 (Fed. Cir. 1998)	19

UPDATED EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 12,156,781
1002	Expert Declaration of John B. Brunski, Ph.D.
1003	U.S. Patent Application Pub. No. US 2017/0202649 A1 (Bernhard)
1004	U.S. Patent No. 6,283,752 (Kumar)
1005	U.S. Patent Application Pub. No. US 2016/0045290 A1 (Poovey)
1006	A. Gracco et al., “Effects of Thread Shape on the Pullout Strength of Miniscrews,” 142 Amer. J. Orthodontics & Dentofacial Orthopedics, 186–90 (2012) (Gracco)
1007	Declaration of Lindsay Allen re Gracco
1008	PCT Patent Application No. WO 2013/030839 A1 (Derey)
1009	U.S. Provisional Patent Application No. 62/742,942
1010	U.S. Provisional Patent Application No. 62/774,402
1011	U.S. Provisional Patent Application No. 62/818,082
1012	U.S. Patent Application No. 16/596,361
1013	U.S. Patent No. 11,311,354 (Kofford)
1014	Smart Denture Conversions Webpage – Separable Fastener
1015	Prosecution History of U.S. Patent Application No. 18/328,730
1016	Smart Denture Conversions – Technique Guide
1017	Complaint, D.I. 1 (April 23, 2024), Smart Denture Conversions, LLC v. Straumann USA, LLC, No. 1:24-cv-00507-JCB (D. Del.)
1018	U.S. Patent Application No. 17/691,108

1019	NeoConvert Brochure
1020	Prosecution History of U.S. Patent Application No. 18/424,696
1021	Supplemental Complaint, D.I. 34 (Feb. 4, 2025), Smart Denture Conversions, LLC v. Straumann USA, LLC, No. 1:24-cv-00507-JCB (D. Del.)
1022	Declaration of Georg C. Reitboeck in Support of Notice of Intent to Designate a Provisionally Recognized PTAB Attorney
1023	Declaration of Mark A. Chapman in Support of Notice of Intent to Designate a Provisionally Recognized PTAB Attorney
1024	Declaration of Christopher F. Gosselin in Support of Notice of Intent to Designate a Provisionally Recognized PTAB Attorney
1025	Declaration of George Koskinas re NeoConvert system
1026	U.S. Patent App. Pub. 2002/0094255 A1 (Neuhengen)
1027	Straumann's Motion For a Conditional Stay, dated July 18, 2025
1028	Straumann's Opening Brief In Support of Its Motion For a Conditional Stay, dated July 18, 2025 (public version) (without exhibits)
1029	Straumann's Reply Brief In Support of Its Motion For a Conditional Stay, dated August 8, 2025
1030	District of Delaware Stay Motion Statistics (January 1, 2019 to September 16, 2025)
1031	Median Time-to-Trial Statistics (January 1, 2020 to March 31, 2025)
1032	Order (Doc. 102) dated December 4, 2025 in Smart Denture Conversions, LLC v. Straumann USA, LLC, No. 1:24-cv-00507 (D. Del.)
1033	Transcript of the Deposition of Karl Leinsing (May 20, 2026)

I. Straumann's POSA Definition Is Correct

SDC attacks Straumann's POSA definition, which requires experience with dental implants and prostheses, by arguing that its "scope of the relevant art is too narrow," "the invention is part of a broader field, mechanical engineering," and "a POSA need not have dentistry-specific experience." Response (Paper 29) at 17-20.

SDC's arguments should be rejected because Straumann's POSA definition tracks the field of the '781 patent, which is the design of dental implants and prostheses. Ex. 1002, ¶¶ 43-49, 127-28. The specification describes procedures used by dentists to attach dental prostheses to dental implants in a dentistry-specific clinical setting (in a patient's jaw) or dental lab (including dentistry-specific impression protocols). It also explains that the patent is directed to systems that temporarily align specific dental components, namely, copings in a dental prosthesis with abutments in a dental implant. Ex. 1001, Abstract, 1:34-4:37, 4:41-5:12, 6:3-10, 6:45-49, 14:44-15:2, Figs. 5-9. Moreover, the key prior art—Bernhard, Poovey, Gracco and Derey—relates to dental prostheses and implants. Ex. 1002, ¶¶ 57, 71, 74, 82.

SDC and Leinsing's definition ignores all that and instead vaguely refers to "experience in the field, such as experience with the design of bone implants, anchors, and/or screws." Ex. 2021, ¶ 53. But Leinsing did not coherently explain which experience is within "the field." Ex. 1033, 67:19-81:11. Aside from "bone

implants, anchors, and/or screws,” he added “material science and things like that” (70:7-9, 74:1), “polymer science” (70:19, 73:3), “mechanical connections” (70:18-20), and “adhesives” (74:1), but stated “you could list a lot of different things but only those experiences that would be related to the ’781 and ’992 patent” (70:18-22). He also said an “orthopedic surgeon with the consultation to a technical person” could be a POSA (72:1-3, 74:6-18) – but that is not part of his definition because “we don’t have [a surgeon] as an expert here in the case, we only have Mr. Breunski [sic – Brunski] and myself” (78:19-80:7). SDC’s definition is not only wrong because it ignores the field of the ’781 patent, but also because it is indeterminate and unworkable.

SDC’s argument that Brunski’s lack of experience with denture conversions means “dentistry-specific experience” is not required (Response at 18-19) makes no sense because neither POSA definition requires denture conversion experience. Ex. 1002, ¶ 127; Ex. 2021, ¶ 53.

SDC’s argument that Straumann’s definition is incorrect because it “disqualif[ies] both inventors ... as POSAs” (Response at 16-18) should be rejected. The inventor’s “educational level” is merely one factor that may be considered but is “by no means conclusive.” *See Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1382 (Fed. Cir. 1983); *Durr Sys., Inc. v. EFC Sys., Inc.*, 2026 U.S. App. LEXIS 8239, *16-17 (Fed. Cir. Mar. 20, 2026) (non-

precedential). Moreover, the two inventors do not meet SDC's own definition: Kofford does not have an engineering degree, and nothing in the record indicates that Rudisill had experience "in the field." Ex. 2021, ¶¶ 49-64.

II. Ground 1

A. Claim 6

Claim 6 is indefinite because it recites only function without structure at the alleged point of novelty, i.e. limitation 6(i), which recites that the temporary fastener is pulled out without being unscrewed. Petition (Paper 2) at xii, 32-35.

SDC does not argue claim 6 is a means-plus-function claim. Decision at 34. Instead, SDC argues claim 6 is definite because of other structural limitations: limitations 6(c), 6(d), 6(g), 6(h) and 6(j). Response at 28-29; Petition at xi-xii. However, these limitations do not relate to the ability of the temporary fastener to be pulled out. Instead, they require: (1) the abutment, definitive screw and temporary fastener to have threads (6(c), 6(d), 6(g)); (2) the temporary fastener to be screwed into the abutment to hold the coping (6(g), 6(h)); and (3) the temporary fastener threads to not continuously engage the abutment threads. These unrelated limitations do not render claim 6 definite.

B. Claims 10-16

Claims 10-16 are indefinite because it is unclear which temporary fastener and abutment thread features must vary by 10% (per the specification's definition of "essentially") to meet the "does not essentially match" limitation. Petition at 35-40.

Incredibly, SDC ignores the specification's 10% definition. Response at 29-35.

Instead, SDC asserts the Figure 75 fastener threads do not “essentially match” the Figure 9 abutment threads. *Id.* at 30. However, the specification does not say whether these threads do not “essentially match” or otherwise explain which feature(s) must vary by 10%. Petition at 35-37.

SDC relies on the examiner's conclusion that Berrevoets's threads do not “essentially match.” Response at 31-33. However, the examiner did not address the 10% definition, did not explain which feature(s) must vary by 10%, and did not explain why slot 29 in Berrevoets means the threads do not “essentially match.”¹ Petition at 38-39.

SDC cites prior art with threads that “match.” Response at 33-34; Exs. 2023, 2024, 2025. However, these references say nothing about threads that “essentially match,” much less apply the 10% definition.

Leinsing—but not SDC—argues this limitation is an “acceptable dimensional tolerance[]” that requires “any one or all of” the major and minor thread diameters,

¹ The “open space” identified by the examiner as slot 29 did not also include 25 (Response at 32-33) which is Berrevoets's projecting boss. Ex. 1020 at 934, 938; Ex. 2016, 2:63-65.

thread angles, crest and root radii, thread areas, pitch diameters and/or pitch circumferences to vary by 10%. Ex. 2021, ¶¶ 138, 140-41, 146-47.²

SDC did not adopt Leinsing’s argument for good reason: the specification does not indicate which features must vary by 10%, much less identify any of Leinsing’s enumerated features. Thus, as the Board correctly concluded, this limitation is indefinite because “it might mean several different things [but] no informed and confident choice is available among the contending definitions.” Decision at 36.³

III. Ground 2

SDC argues the specification describes three “species” that support the claims. Response at 28-63. As explained below, none of SDC’s “species” support the claims because these “species” are not described and/or do not embody the claimed temporary fastener.

² The required 10% variance is not a “tolerance” because it is not a range of permitted variation.

³ Contrary to SDC’s argument (Response at 34-35), Straumann’s obviousness ground assumed this limitation is definite. Petition at 77-78 & n.7; Ex. 1002, ¶ 253 & n.5.

A. Different-Thread Limitations Shorthand

In the petition, Straumann used the shorthand “different thread pattern limitations” (or synonyms) to refer to the various limitations that require the temporary fastener threads to have a different thread geometry than the matching, symmetric threads of the definitive screw and implant abutment, i.e. the “contact area,” “volume” and “does not essentially match” limitations.

Straumann expressly tied this shorthand to these limitations. Specifically, Straumann explained that each independent claim encompassed different thread patterns because of these limitations:

[T]hese [independent] claims encompass any thread pattern that is different than the definitive screw and implant abutment threads. Claim 1 requires the temporary fastener to have a “threading contact area” with the implant abutment that is “less than” the “threading contact area” of the definitive screw with the abutment. Claim 8 requires the definitive screw to have a “volume” of “post material” that is “greater than” a “volume” of “shaft material” of the temporary fastener. Claim 10 requires the temporary fastener to have a “shaft threading contour” that “does not essentially match” the “implant abutment threads contour.” Finally, claim 6 does not include any limitation that requires the thread pattern of the temporary fastener to be different or not different than the definitive screw and implant abutment thread pattern, and therefore the claim encompasses all different thread patterns.

Petition at 29-30 (emphasis added) (citations omitted); *id.* at 40-41 (using same shorthand in discussing these limitations); *id.* at 50-51.

Straumann's shorthand was consistent with SDC's prosecution arguments, which expressly tied the "contact area," "volume" and "not essentially match" limitations to the different asymmetric threads of the Figure 75 temporary fastener. SDC argued that because of the smaller proximal angle of the "different" thread "profile" and "shape" of asymmetric threads 40 in Figure 75, threads 40 do not "fill" abutment threads 18 but instead leave "open space," which results in "less surface area contact" with, and "less material volume within the engagement depth" of, threads 18. Ex. 1015 at 297-99 (emphasis added); Ex. 1002, ¶ 113. SDC argued this "discussion of the inherent additional open space" "supported" its amendments that the temporary screw threads must have "an abutment threading contact area and/or volume" "less than" the "abutment threading contact area and/or volume" of the definitive screw threads. Ex. 1015 at 290-91, 298-99 (emphasis added). SDC also amended a claim to require the temporary and definitive screw "threading profiles" to be "different" instead of "not essentially match[ing]." *Id.* at 290, 299.

In its preliminary response, SDC plainly understood and never questioned Straumann's shorthand. Indeed, SDC repeatedly used it by referring to the "thread-pattern limitations" and "a different thread pattern" when discussing these very limitations. Paper 10 at 29-30, 36; Decision at 38.

In the institution decision, the Board concluded that “Petitioner d[id] not address the actual claim language at issue.” Decision at 37-38. However, as explained above, Straumann’s petition tied the shorthand “different thread pattern” to the relevant limitations—just as SDC did during prosecution and in its preliminary response. Petition at 29-30, 40-41, 50-51; Ex. 1015 at 297-99; Paper 10 at 29-30, 36.

SDC’s opportunistic about-face that it now “agrees” with the Board (Response at 36) is not credible. After using Straumann’s shorthand in its preliminary response, SDC now repeatedly refers to “different” and “mismatched” threads, and expressly ties these shorthands to these limitations. *Id.* at 14-15, 41-43, 47-52, 54-56, 60, 72-77.

For example, SDC refers to “a key aspect of the invention, which appears in each independent claim ... viz., the inventive concept of a mismatch between (1) the temporary fastener’s threading and (2) the definitive screw’s or female abutment’s threading” and argues that “[e]ach independent claim contains several limitations going to this precise concept.” *Id.* at 72 (emphasis added). SDC refers to “the critical limitations in each independent claim requiring mismatched threads.” *Id.* at 15. SDC states that the independent claims “describe temporary fasteners with thread contours that are different from the definitive screw’s and/or abutment’s.” *Id.* at 52. SDC states that “the inventive concepts go to the differences between the temporary and definitive screw threads.” *Id.* at 56. Finally, SDC expressly ties the concept of

different and mismatched threads to the “not essentially match,” “contact area” and “volume” limitations. *Id.* at 72-77.

To avoid any further confusion, Straumann uses the shorthand “different-thread limitations” below to refer to these limitations.

B. Different-Thread Limitations Are Not Supported

1. Asymmetric Threads

Contrary to SDC’s arguments (Response at 43-48), the specification does not describe additional temporary fasteners with asymmetric threads that support the different-thread limitations in the independent claims.

SDC quotes specification excerpts that describe Figure 75, arguing they describe temporary fasteners with asymmetric threads “generally.” *Id.* at 43-46; Ex. 1001, 23:17-30. This is incorrect. The cited excerpts unambiguously describe only temporary fastener 190 with the specific asymmetric threads 40 depicted in Figure 75. Ex. 1001, 23:17-30. The cited sentences (and another describing Figure 75 (*id.*, 11:31-34)) are the only description of a temporary fastener with asymmetric threads.

SDC also argues “[a] POSA would have understood that the inventive concepts could be practiced using” any “asymmetric threads.” Response at 44. However, a claim can be supported only by subject matter that is described in the specification, not by subject matter that is not described but would be obvious given what is described. *See Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351

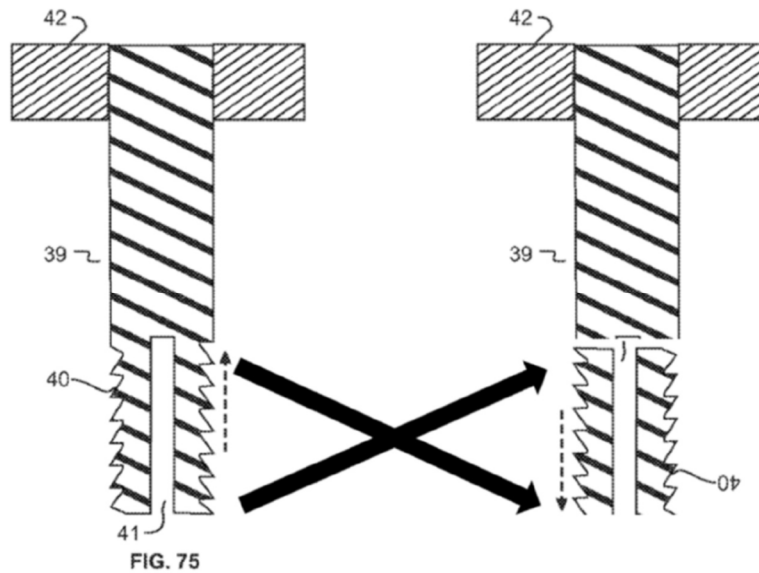
(Fed. Cir. 2010) (en banc); *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997).

Therefore, even if a POSA could design other temporary fasteners with different asymmetric threads based on Figure 75 and the description, those obvious embodiments do not support the claims because they are not described.

SDC also relies on two boilerplate specification statements: (1) “[t]he drawings ... illustrat[e] certain convenient embodiments ... and are not to be considered as limitation;” and (2) “[v]arious embodiments have been described to illustrate the disclosed inventive concepts, not to limit the invention.” Ex. 1001, 8:13-15, 25:11-12; Response at 45.

However, boilerplate specification statements about variations or combinations of described embodiments are “not sufficient to show adequate disclosure of the actual combinations and [embodiments] used in the ... [c]laims.” *See D Three Enters., LLC v. SunModo Corp.*, 890 F.3d 1042, 1050-51 (Fed. Cir. 2018).

SDC argues the sentence that follows those describing Figure 75 discussed above describes a “reverse buttress threads” embodiment (Response at 44-45; Ex. 1001, 23:30-34), which SDC depicts (right) alongside Figure 75 (left):



The image on the right is not in the specification. Leinsing created it. Ex. 2021, ¶ 171; Ex. 1033, 101:25-102:7.

Leinsing’s embodiment does not depict what the cited sentence describes. The sentence does not say the threads are “in the opposite direction” to the arrow in Figure 75. Instead, it says “the threads could be designed to provide engagement with the implant abutment threads through axial motion in the opposite direction to the arrow.” Ex. 1001, 23:30-34 (emphasis added). Thus, this sentence describes a screw that is pushed into the abutment, not a screw with reverse buttress threads that is screwed in. Ex. 1033, 26:11-24.⁴

⁴ Thus, contrary to SDC’s arguments (Response at 59-60 & n.10), Brunski did not “overlook” a reverse-buttress-thread embodiment (or any others).

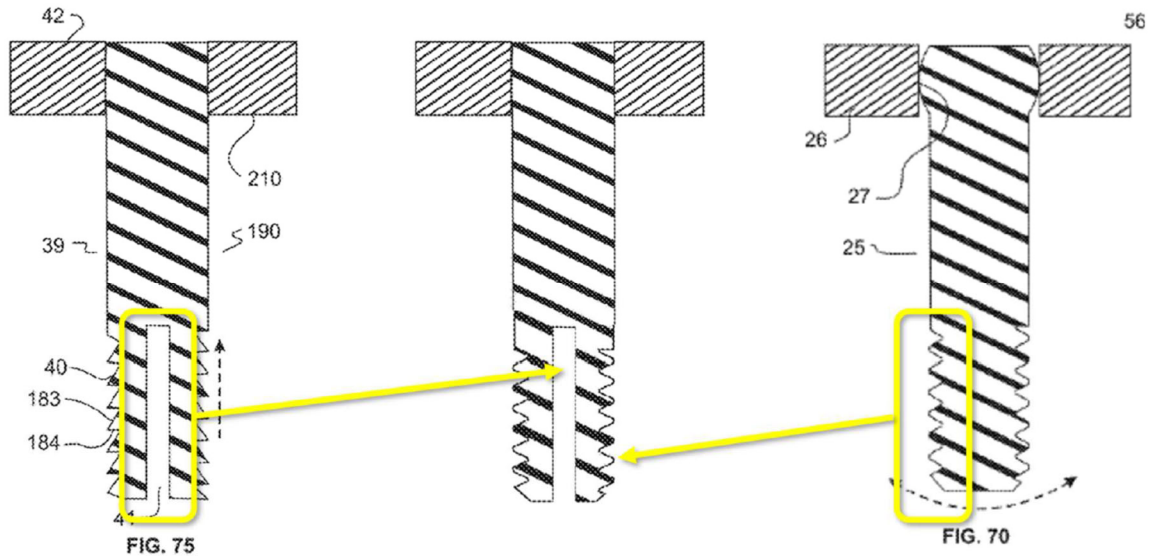
This push-in embodiment does not support the claims because, as SDC concedes (Response at 72-73), the claims require the fastener to be screwed into the abutment at a predetermined torque. Ex. 1001, 25:60-66, 26:56-63, 27:30-37, 28:7-9, 28:24-26.

SDC argues that “[d]esigned correctly, these threads [would] screw into the abutment.” Response at 45. However, even if a POSA could design a screw-in embodiment, this obvious embodiment does not support the claims because it is not described. *See Lockwood*, 107 F.3d at 1572.

2. Symmetric Threads With Slot

Contrary to SDC’s arguments (Response at 48-49), the specification does not describe temporary fasteners with a slot and symmetric threads that support the different-thread limitations.

SDC argues a POSA would understand the symmetric threads in the separable cap-post Figure 70 embodiment (right) “can be combined with” Figure 75 (left) to make a new embodiment (middle):



Id. at 48-49. SDC relies on the boilerplate statement that “features, structures, or characteristics may be combined in any suitable manner in one or more embodiments without limitation.” Ex. 1001, 8:3-5; Response at 49; Ex. 2021, ¶ 180.

The middle image above is not in the specification. Leinsing created it. Ex. 2021, ¶ 179; Ex. 1033, 111:4-15.

Leinsing’s embodiment does not support the claims. The claimed subject matter must be described in the specification “as an integrated whole rather than as a collection of independent limitations.” *See Novozymes A/S v. DuPont Nutrition Biosciences APS*, 723 F.3d 1336, 1349 (Fed. Cir. 2013). Therefore, the claims are not supported by Leinsing’s “amalgam of disclosures plucked selectively from the [specification].” *See id.*; *Flash-Control, LLC v. Intel Corp.*, 2021 U.S. App. LEXIS 20790, *12 (Fed. Cir. July 14, 2021) (non-precedential). Even if a POSA could combine these two embodiments, the resulting obvious embodiment does not

support the claims because it is not described. *See Lockwood*, 107 F.3d at 1572; *SunModo*, 890 F.3d at 1050-51.

3. Interference Fit

Contrary to SDC's arguments (Response at 50-52), the specification does not describe interference-fit temporary fasteners that support the different-thread limitations.

SDC relies on a sentence in the specification that refers to an "interference fit." *Id.* at 50; Ex. 1001, 24:60-64. However, as the Board correctly concluded (Decision at 39-40), this embodiment is described as pushed in, not screwed in. This is clear from the preceding sentences, which describe this embodiment as an example of an "alternate approach[]" to "rotational engagement" that uses "axial insertion without rotation." Ex. 1001, 24:52-64.

This push-in embodiment does not support the claims because, as explained above, they require the fastener to be screwed in at a predetermined torque. Ex. 1001, 25:60-66, 26:56-63, 27:30-37, 28:23-28.

SDC argues "such a fastener could be designed to be pushed in or rotated in" and that a POSA could design a post "without threading" that would deform when screwed in, resulting in "a shallow male thread." *Id.* at 50-51; Ex. 2021, ¶¶ 185-87. Leinsing depicts this post (red) after insertion into the abutment:



This image is not in the specification. Leinsing created it. Ex. 2021, ¶ 185; Ex. 1033, 119:1-14.

Even if a POSA could make Leinsing’s screw-in interference-fit embodiment, this obvious embodiment does not support the claims because it is not described. *See Lockwood*, 107 F.3d at 1572.

C. Release Limitations Are Not Supported

As explained below, none of SDC’s “species” support the release limitations in the independent claims.

1. Asymmetric Threads Without Slot

Contrary to SDC’s arguments (Response at 46-48), the specification does not describe temporary screws with asymmetric threads without a slot that support the release limitations.

SDC relies on the specification statement that “[i]n some embodiments, the threaded end of the post portion of the temporary fastener has a deflecting feature that allows the post to engage or disengage the abutment threads through axial motion instead of a rotary screw motion.” Ex. 1001, 5:31-35; Response at 46-47. According to SDC, because only “some embodiments” have “a deflecting feature,”

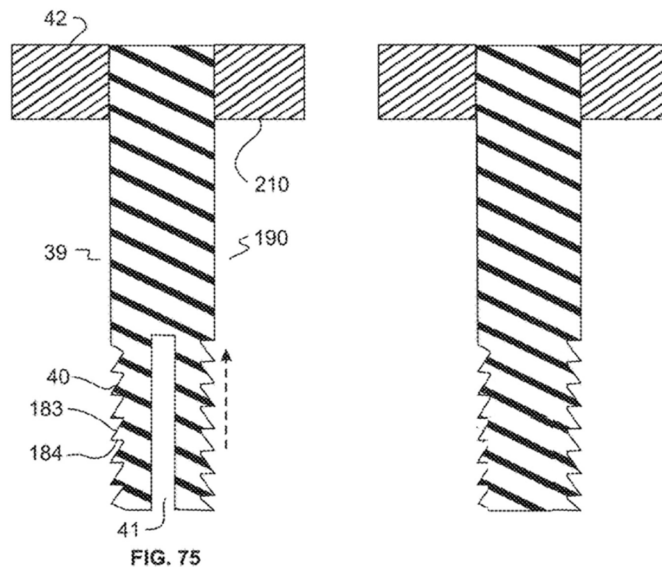
“the split post shown in Figure 75” is not “essential” or “critical.” *Id.* at 46-47, 53-54.

SDC is incorrect. “[S]ome embodiments” refers to the Figure 75 embodiment with slot 41, which is the only embodiment described as having a “threaded end of the post” with a “deflecting feature.” In all the other screw-in embodiments, the cap (or coping) separates from the post, which remains screwed in. Ex. 1001, Figs. 1-58, 62-74, 76-90.

Moreover, contrary to SDC’s assertions, the deflecting legs are important. As explained in the petition, the specification repeatedly states that the Figure 75 fastener can be pulled out without being unscrewed because of asymmetric threads 40 and the deflecting legs created by slot 41. Ex. 1001, 5:31-35, 11:31-34, 23:10-41, 24:58-59 (“... the split post bottom structure shown in FIG. 75 which allows axial extraction ...”), Fig. 75; Petition at 24-29. These specification statements make clear that the function of pulling out the fastener is important, and that the buttress threads and deflecting legs are both important to this function. These statements also contradict SDC’s assertions that the specification does not “indicate” that “the

asymmetric buttress threads” or “split post” in Figure 75 “are critical elements of the invention.” Response at 46-47, 58-59.⁵

SDC argues “[a] POSA would ... have understood that Figure 75’s slotted post is not essential” or “necessary for axial release” and that the threads could be “made of plastic or polymer material” that deforms so the fastener can be pulled out. Response at 46-47, 53-54. SDC depicts this fastener without a slot (right) alongside Figure 75 (left):



The image on the right is not in the specification. Leinsing created it. Ex. 2021, ¶ 176; Ex. 1033, 125:11-19.

⁵ SDC’s assertions are also contradicted by its own statements that both features are important. Response at 22-24, 41-43, 55, 72-73, 76-77.

The specification does not describe any threaded temporary fastener without a slot that is pulled out because it is made of deformable “plastic or polymer.” Contrary to Leinsing’s understanding (Ex. 1033, 125:20-126:10, 127:15-17), such an embodiment cannot be cobbled together by an “amalgam of disclosures plucked selectively from the [specification].” *See Novozymes*, 723 F.3d at 1349. Even if a POSA could create this new fastener, this obvious embodiment does not support the claims because it is not described. *See Lockwood*, 107 F.3d at 1572.

2. Interference Fit

Contrary to SDC’s arguments (Response at 50-52), the specification does not describe interference-fit temporary fasteners that support the release limitations, for all the reasons discussed above for the different-thread limitations.

D. SDC’s Cases Are Distinguishable

SDC relies heavily on *Gillette* and *Medtronic*. Response at 53-54, 56-59. Both cases are distinguishable.

First, in those cases, the limitations at issue were not important. *See Gillette & Co. LLC v. Sphere USA, LLC*, 2023 Pat. App. LEXIS 3126, *28 (P.T.A.B. Sept. 19, 2023); *Medtronic, Inc. v. Teleflex Innovations, S.A.R.L.*, 69 F.4th 1341, 1353-54 (Fed. Cir. 2023). In contrast, as explained above, the specification makes clear that the different-thread and release limitations are both important. Ex. 1001, 5:31-35, 11:31-34, 23:10-41, 24:58-59, Fig. 75.

Second, in *Gillette* and *Medtronic*, the specification contained “permissive language” (Response at 58) regarding the limitations. *See* 2023 Pat. App. LEXIS 3126 at *28-30; 69 F.4th at 1353-54. SDC asserts the specification here has “permissive language,” but does not cite any. Response at 57-58. If SDC relies on any statements discussed above, none support the claims for the reasons explained above.

E. Brunski Did Not Use Different POSAs

SDC’s argument that Brunski used different POSAs for support and obviousness (Response at 61-62 & n.11) is incorrect. These are different issues with different standards based on different statutory provisions and different evidence, which Brunski analyzed from the vantage of the same POSA. Ex. 2022 at 244:12-48:2; Ex. 1002, ¶¶ 21-26, 28-29, 33-40, 42, 126-129.

F. No Support “At Least For” Figure 75

SDC’s argument that the claims are supported “at least for” the Figure 75 embodiment because this is a “predictable” field (Response at 62) is incorrect. Even in a predictable field, a claim is supported only if the specification adequately describes the full claim scope. *See Ariad*, 598 F.3d at 1351, 1353-54. That is why in *Tronzo* the description of “only conical shaped cups” did not support claims to any cup shape and in *ICU* the description of “only medical valves with spikes” did not support claims to valves with or without a spike. *See Tronzo v. Biomet, Inc.*, 156 F.3d

1154, 1159 (Fed. Cir. 1998); *ICU Med., Inc. v. Alaris Medical Sys., Inc.*, 558 F.3d 1368, 1378 (Fed. Cir. 2009).

G. No “Implicit” Construction

SDC argues the Board “implicitly” construed the claims by stating they “cover broader subject matter, i.e., nearly any temporary fastener that can be pulled out.” Response at 21-24 (citing Decision at 40). According to SDC, this “implicit” construction is too broad because it does not account for other limitations that require, *inter alia*, the fastener to be screwed in. *Id.*

Neither the Board nor Straumann stated the claims encompass fasteners that cannot be screwed in. The Board explained that “each independent claim requires the temporary fastener to engage the abutment threads via rotary engagement, at an engagement depth, at a predetermined torque, suggesting the fastener is a screw or, at least, screwed in.” Decision at 39. The Board also explained that Figure 75 and the related description “is the only disclosure of such a structure and function” that is “screwed in and then released by an axial force, i.e., pulled out.” *Id.* at 39-40.

Confusingly, SDC next argues the Board adopted an implicit construction that is too narrow because it limits the independent claims to Figure 75, fails to account for dependent claim limitations, and “contradicts the specification,” which discloses “alternate embodiments.” Response at 24-27.

Neither the Board nor Straumann stated the independent claims are limited to Figure 75. Decision at 38-40. To the contrary, the claims are too broad because they go beyond this embodiment to encompass undisclosed embodiments without a buttress thread and split-post. Petition at 40-52.

H. Dependent Claims Are Not Supported

SDC did not respond to Straumann's arguments that the different-thread limitations in claims 2-5, 7, 9 and 11-16 and the release limitations in claims 2-5, 7, 9, 11-13 and 15-16 are not supported. Petition at 50-52.

I. "Securing the Coping" Limitation

SDC does not dispute that the specification does not describe definitive screw threads that secure the coping to the abutment threads as recited in claims 1-9. Petition at 52-54.

Instead, SDC accuses Straumann of being "overly pedantic" about "a trivial difference in phrasing" and presents a grab-bag of off-point arguments about temporary fasteners, Bernhard, a belt, and a rope. Response at 62-63.

SDC's arguments effectively ask the Board to rewrite SDC's own claim language to merely require the definitive screw threads to secure the coping to the abutment, as opposed to the abutment threads as recited. However, "courts may not redraft claims, whether to make them operable or to sustain their validity." *See Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004).

J. “Does Not Engage Continuously” Limitation

SDC incorrectly argues that the Figures 31 and 82-90 embodiments support the “does not engage ... continuously” limitation of claims 1-9 because these figures depict empty abutment threads below the temporary fastener. Response at 64-65.

However, as Leinsing agreed, empty abutment threads below the fastener do not support this limitation, which requires the fastener threads to not engage the abutment threads continuously “between” the proximal end of the abutment threads and the distal end of the fastener, i.e. above the end of the fastener. Ex. 1001, 26:9-13, 27:6-10, 27:46-50; Ex. 1033, 132:11-134:6.

Moreover, even if a POSA could combine the Figure 75 embodiment with one of the Figures 31 or 82-90 embodiments, this obvious embodiment does not support the claims because it is not described. *See Novozymes*, 723 F.3d at 1349; *Lockwood*, 107 F.3d at 1572.

K. “Deform” Limitations

SDC argues the “surface ... deform[s]” limitation of claim 5 and the “shaft ... deform” limitation of claim 14 are supported by: (1) “temporary fasteners without slotted posts ... made of plastic or polymer;” and (2) “a temporary fastener that uses ‘an interference fit.’” Response at 65-66, 67.

As explained above, the specification does not describe temporary fasteners without a slot that can be screwed in and pulled out, and the described interference-fit embodiment does not support the claims because it is pushed in.

SDC also argues a POSA could incorporate detachable threads. *Id.* at 67-68. However, even if doing so would be obvious, this embodiment does not support the claims because it is not described. *See Lockwood*, 107 F.3d at 1572.

L. “Configured To Release” Limitation

SDC argues the “configured to release” limitation of claim 6 is supported because “[n]umerous disclosed embodiments” allegedly “meet” this limitation. Response at 66-67.

However, although the Figure 75 embodiment (*id.* at 66) meets this limitation, it does not support claim 6 because it is not commensurate in scope with this broad, functional limitation. Petition at 58-60.

Moreover, SDC’s three “species” (Response at 66) do not “meet,” let alone support, claim 6. As explained above, the specification does not describe other “temporary fastener embodiments with asymmetric threads” or “slotted temporary fasteners with symmetric threads.” *Id.* Moreover, the interference-fit embodiment SDC points to (*id.*) is pushed in, not screwed in as recited. Ex. 1001, 26:56-65.

Further, the Figures 34 and 69 embodiments (Response at 66) do not “meet,” let alone support, claim 6 either because they have continuous threads that do not meet the discontinuous threads limitation of this claim. Ex. 1001, 27:6-10.

More broadly, whether some embodiments “meet” this limitation is beside the point. Contrary to SDC’s conclusory denial (Response at 66-67), this limitation is “a purely functional recitation in that there is no structure presented in the claim element itself.” *Ex Parte Miyazaki*, 2008 WL 5105055, *10-14 (B.P.A.I. Nov. 19, 2008). Therefore, like the claims in *Miyazaki* and *Ex Parte Wang*, 2014 WL 1005328, *2 (P.T.A.B. Jan. 9, 2014), claim 6 is overly broad and not described or enabled. Petition at 58-60.

M. “Maximal Width” Limitation

SDC does not dispute that Figures 9 and 75 depict the temporary fastener and definitive screw as having the same thread diameter. Petition at 62-63; Ex. 1002, ¶¶204-209. Therefore, SDC’s argument that the “maximal width” limitation of claim 15 is supported because the Figure 75 threads must have a smaller diameter (Response at 68) is really an argument that a POSA would make the diameter smaller than depicted. However, this obvious embodiment does not support claim 15 because it is not described. *See Lockwood*, 107 F.3d at 1572.

N. Enablement

Contrary to SDC's argument (Response at 68-70), Straumann did not waive its enablement arguments. Straumann's petition included parallel arguments that the claims are not enabled for all the same reasons they are not described (Petition at 40-63), with citations to enablement precedent (*id.* at 45, 49). This is sufficient because, as SDC tacitly concedes (Response at 70), in this case enablement and written description plainly "rise and fall together." See *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345-46 (Fed. Cir. 2005).

IV. Grounds 3 and 4

A. Combinations Meet Different-Thread Limitations

SDC's arguments that Straumann's combinations do not "teach" the different-thread limitations are based on the incorrect premise that at least one reference must disclose two fasteners with the claimed thread differences. Response at 72-77.

However, because Straumann's "grounds for obviousness are based on a specific combination of references," SDC's arguments "that 'attack the disclosures of the ... references individually' lack merit." See *Palo Alto Networks, Inc. v. Centripetal Networks, LLC*, 122 F.4th 1378, 1386 (Fed. Cir. 2024). The references "must be read together, not in isolation," and "the Board must consider whether the particular combination[s] argued by" Straumann "would meet the claim limitations at issue." *Id.*

Straumann's combinations meet all the limitations, including each of the different-thread limitations. As Brunski explained, there was a motivation to use a temporary fastener with flexible buttress threads in Bernhard's system. Ex. 1002, ¶¶ 212-34, 274-83; Petition at 64-72, 83-86. The resulting combinations meet each of the different-thread limitations, because this fastener with buttress threads "does not essentially match," and has a smaller thread "contact area" and "volume" than, definitive screw 750 and abutment 650 with symmetric threads in Bernhard. Ex. 1002, ¶¶ 253, 270-71, 312-13, 354-55; Petition at 77-78, 82-83, 93-94, 101-102.

B. Motivation to Combine

SDC does not dispute the motivation to combine Bernhard and Poovey. SDC argues, however, that a POSA would not have been motivated to incorporate buttress threads based on Gracco or deflecting legs based on Derey, because Bernhard and Poovey "already solved" the problems of providing a stable connection while making it easy to pull the fastener out. Response at 77-81; Ex. 2021, ¶¶ 222-228, 229-256.

SDC's argument should be rejected. SDC treats the reduction of the required removal force as a binary issue that at some point is "solved." However, reducing the required removal force is a matter of degree, and as Leinsing agreed, one design goal is to reduce the required removal force as much as possible (while maintaining stability). Ex. 1033, 41:19-44:16, 45:25-46:19. That is important in order not to

injure or cause discomfort to the patient. *Id.* As Leinsing also agreed, both Bernhard and Poovey express this very consideration. *Id.* at 47:9-50:3; Ex. 1003, [0067]; Ex. 1005, [0084].

This goal to reduce the required removal force as much as possible is precisely what would have motivated a POSA to incorporate buttress threads and deflecting legs. As Brunski explained, “[h]aving decided to use a temporary fastener with flexible threads” based on Poovey and Bernhard, a POSA would have been motivated to use buttress threads “with a shorter thread depth and a smaller (shallower) proximal thread angle” because, as known by a POSA and confirmed by Gracco⁶, they would require “less pull-out force” and would “make the fastener easier to pull out while maintaining its secure and stable threaded connection.” Ex. 1002, ¶¶ 220-34; Petition at 67-72. Moreover, a POSA would have been motivated by Derey to incorporate deflecting legs because they “would make it easier to pull the temporary fastener out of the abutment while still ensuring that the temporary connection is stable and secure.” Ex. 1002, ¶¶ 281-83; Petition at 85-86; Ex. 1008 at 10; Ex. 1033, 171:24-172:9.

Brunski’s evidence is more than sufficient because it demonstrates that these motivations came from: (1) the prior art (Bernhard and Poovey providing

⁶ SDC and Leinsing acknowledged this. Paper 10 at 8, 11; Ex. 2010, ¶¶ 62, 67.

motivation, and Gracco and Derey providing solutions, to reduce the required removal force); (2) the nature of the problem to be solved (how to design the fastener to be easier to pull out); and (3) a POSA's knowledge (a buttress thread's geometry makes it easier to pull out). *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1365 (Fed. Cir. 2018).

Finally, the Federal Circuit has rejected arguments (like SDC's argument here) that the fact that one reference "already address[ed]" a problem means there would not have been a motivation to combine it with another reference that addressed the same problem. *See Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1379-81 (Fed. Cir. 2025); *Maxell, Ltd. v. Amperex Tech. Ltd.*, 2025 U.S. App. LEXIS 1442, *9-12 (Fed. Cir. Jan. 23, 2025) (non-precedential).

C. No Teaching Away

SDC's "teaching away" argument relies on Derey's statement that the fastener is "designed to be used instead of the screws for attaching the construction to the implants." Ex. 1008 at 10; Response at 80. But this statement refers to prior art screws that remain screwed in and must be unscrewed. Ex. 1008 at 8 ("abutment 31 ... is secured, using a screw"); *id.* at 9 ("[T]he dentist first unscrews the abutment 31 and then lifts the form").

Derey says nothing about—and therefore does not teach away from—temporary fasteners that are pulled out, as claimed. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009).⁷

V. Conclusion

Straumann respectfully requests the Board find the claims unpatentable for the reasons discussed above and in the petition.

Dated: June 23, 2026

Respectfully submitted,

/s/ Sheila Mortazavi

Sheila Mortazavi (Reg. No. 43,343)

Lead counsel

Georg Reitboeck (pro hac vice)

Backup counsel

Mark A. Chapman (pro hac vice)

Backup counsel

HAUG PARTNERS LLP

745 Fifth Avenue, 10th Floor

New York, NY 10151

Phone (212) 588-0800

Fax (212) 588-0500

smortazavi@haugpartners.com

greitboeck@haugpartners.com

mchapman@haugpartners.com

Chris R. Gosselin (pro hac vice)

Backup counsel

HAUG PARTNERS LLP

1717 K Street NW, Suite 900

Washington, DC 20006

⁷ SDC has abandoned its objective indicia arguments. Decision at 32.

Phone (202) 292-1530
cgosselin@haugpartners.com

Counsel for Petitioner Straumann USA, LLC

CERTIFICATE OF COMPLIANCE

Petitioner's Reply complies with the word limit of 5,600 words because it has 5,599 words, excluding the parts exempted by 37 C.F.R. § 42.24(c)(1). Petitioner's Reply also complies with the format requirements of 37 C.F.R. § 42.6(a) and has been prepared with Microsoft Word in 14 point Times New Roman font.

/s/ Sheila Mortazavi

Sheila Mortazavi

Reg. No. 43,343

Counsel for Petitioner Straumann USA, LLC

CERTIFICATE OF SERVICE

The undersigned certifies that on June 23, 2026, true and correct copies of Petitioner's Reply and its exhibits were served by email on counsel for Patent Owner at the following email addresses:

Kelsey I. Nix (Lead Counsel)
knix@smithlaw.com

John L. Gibbons (Back-up Counsel)
jgibbons@smithlaw.com

Jonathan V. Lewis (Back-up Counsel)
jlewis@smithlaw.com

Andrew D. Kasnevich (Back-up Counsel)
akasnevich@kdwfirm.com

Daniel J. Whittle (Back-up Counsel)
dan.whittle@patentleverage.com

/s/ Sheila Mortazavi

Sheila Mortazavi
Reg. No. 43,343

Counsel for Petitioner Straumann USA, LLC