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. IPR2025-00956

U.S. Patent No. 11,937,992

PETITIONER'S REPLY

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UPDATED EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 11,937,992
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	U.S. Patent No. 7,938,046 (Nino)
1021	German Published Patent Application (Offenlegungsschrift) DE 3808238 A1 (Ruetschi)
1022	Certified English Translation of German Published Patent Application (Offenlegungsschrift) DE 3808238 A1 (Ruetschi)
1023	U.S. Patent No. 1,725,109 (Starkey)
1024	U.S. Patent No. 2,626,029 (Gutterman)
1025	Declaration of Georg C. Reitboeck in Support of Notice of Intent to Designate a Provisionally Recognized PTAB Attorney
1026	Declaration of Mark A. Chapman in Support of Notice of Intent to Designate a Provisionally Recognized PTAB Attorney
1027	Declaration of Christopher F. Gosselin in Support of Notice of Intent to Designate a Provisionally Recognized PTAB Attorney
1028	Declaration of George Koskinas re NeoConvert system
1029	U.S. Patent App. Pub. 2002/0094255 A1 (Neuhengen)
1030	Straumann's Motion For a Conditional Stay, dated July 18, 2025
1031	Straumann's Opening Brief In Support of Its Motion For a Conditional Stay, dated July 18, 2025 (public version) (without exhibits)
1032	Straumann's Reply Brief In Support of Its Motion For a Conditional Stay, dated August 8, 2025
1033	District of Delaware Stay Motion Statistics (January 1, 2019 to September 2, 2025)
1034	Median Time-to-Trial Statistics (January 1, 2020 to March 31, 2025)

1035	Order (Doc. 102) dated December 4, 2025 in *Smart Denture Conversions, LLC v. Straumann USA*, LLC, No. 1:24-cv-00507 (D. Del.)
1036	Transcript of Deposition of Karl Leinsing, May 20, 2026

I. Straumann's POSA Definition Is Correct

Contrary to SDC's arguments (Response (Paper 26) at 19-23), the requirement in Straumann's definition that a POSA have experience with dental implants and prostheses is correct.

SDC attacks Straumann's definition by arguing its "scope of the relevant art is too narrow," that "the invention is part of a broader predictable field, mechanical engineering," and that "a POSA need not have dentistry-specific experience." *Id.* at 20-22.

SDC's arguments are incorrect because Straumann's POSA definition tracks the field of the '992 patent which, as Brunski explained, is the design of dental implants and prostheses. Ex. 1002, ¶¶ 42-48, 128-29. 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). The specification also explains that the patent is directed to improved temporary-alignment systems to align and connect various dentistry-specific, interrelated components, namely copings in a dental prosthesis with abutments in a dental implant. *See, e.g.*, Ex. 1001, Abstract, 1:31-4:35, 4:39-5:10, 6:1-8, 6:43-47, 14:39-64, Figs. 5-9.

Moreover, the key prior art—Bernhard, Poovey, Gracco and Derey—also relates to dental prostheses and implants. Ex. 1002, ¶¶ 56, 70, 73, 81.

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, ¶ 46. But neither in his declaration nor his deposition did Leinsing coherently explain which experience would or would not fall into "the field" of his definition. Ex. 1036, 67:19-81:11. Aside from "bone implants, anchors, and/or screws," he added, when asked in deposition, "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 further stated that "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). And according to Leinsing, even 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 POSA definition because "we don't have [an orthopedic 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 dental implants and prostheses, 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 21-22) makes no sense because neither POSA definition requires denture conversion experience. Ex.

1002, ¶ 128; Ex. 2021, ¶ 46. SDC does not dispute that Brunski has the required experience with dental implants and prostheses.

SDC's argument that Straumann's definition is incorrect because it "disqualif[ies] both inventors … as POSAs" (Response at 19-21) 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) (affirming POSA definition that excluded inventor); *Durr Sys., Inc. v. EFC Sys., Inc.*, 2026 U.S. App. LEXIS 8239, *16-17 (Fed. Cir. Mar. 20, 2026) (non-precedential) (same). Moreover, the two inventors do not meet SDC's own definition either: Kofford does not have an engineering degree at all, and nothing in the record indicates that Rudisill had experience in "the field." Ex. 2021, ¶¶ 43-53.

II. Grounds 1-3

SDC does not dispute that, if Kofford is prior art, all the claims are anticipated and/or obvious. Petition (Paper 2) at 44-54. SDC disputes only that Kofford is prior art, arguing that the Priority Applications describe 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 screw.

A. Different-Thread Limitations Are Not Supported

As explained below, none of SDC's "species" support the different-thread limitations in independent claims 1 and 9.

1. Asymmetric Threads

Contrary to SDC's arguments (Response at 35-41), the Priority Applications do not describe additional temporary screws with asymmetric threads that support the different-thread limitations.

SDC quotes excerpts from two sentences in the specification (reproduced below), arguing they describe temporary screws with asymmetric threads "generally." Response at 35-38; Ex. 1012 at 97. This is demonstrably incorrect. These sentences unambiguously describe only the specific temporary screw with the specific asymmetric threads 40 depicted in Figure 75:

> For example, as shown in FIG. 75 an alignment fastener 39 may contain a separable threaded or serrated portion 40 that engages the screw threads in the abutment for pick-up, but that will release with axial force after. FIG. 75 shows a temporary attachment post 39 having a slot 41 and asymmetric threads or serrations 40 that allow the temporary attachment post to be inserted through rotation for alignment for coping pick-up but may be subsequently extracted with a separation force in the axial direction.

Ex. 1012 at 97 (emphasis added).

These sentences (and another describing Figure 75)[1] are the only description in the specification of a temporary screw with different threads. Therefore, contrary to SDC's arguments (Response at 51-52), the Board correctly concluded that, apart from Figure 75 and the related description, "[n]o other different temporary screw threads, relative to the definitive screw threads, are described," and the specification does not "call out," "discuss" or "even allude" to "the (claimed) concept of specifically differing the thread style between a temporary and a definitive screw." Decision (Paper 12) at 29-30, 32-33.

SDC also argues "[a] POSA would understand" they could "adjust[] the asymmetric threads' geometry or substitute[] other well-known screw profiles for what is shown in Figure 75" and that "the inventive concepts … cover multiple variations of the temporary fasteners described." Response at 36, 38, 49-50.

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, 1352 (Fed. Cir. 2010) (en banc) ("[A] description that merely renders the invention

[1] *Id.* at 78 ("FIG. 75 is a cross-sectional view of a temporary screw embodiment incorporating a split post that has deflecting sections with screw threads shaped to facilitate axial separation without unscrewing the post threads.").

obvious does not satisfy the [written description] requirement"); *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) ("The question is not whether a claimed invention is an obvious variant of that which is disclosed in the specification. Rather, [the specification] itself must describe an invention, and do so in sufficient detail that [a POSA] can clearly conclude that the inventor invented the claimed invention."); Decision at 27.

Therefore, even if a POSA could design other temporary screws with different asymmetric threads based on Figure 75 and the related 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. 1012 at 72, 100; Response at 37-38.

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).[2]

SDC also argues the following sentence in the specification describes a "reverse buttress threads" embodiment that supports the claims:

> Although the threads could be designed to provide engagement with the implant abutment threads through axial motion in the opposite direction to the arrow shown in FIG. 75, rotation to a design torque on engagement is generally preferred.

Ex. 1012 at 97; Response at 36-37. SDC depicts this (right) next to Figure 75 (left):

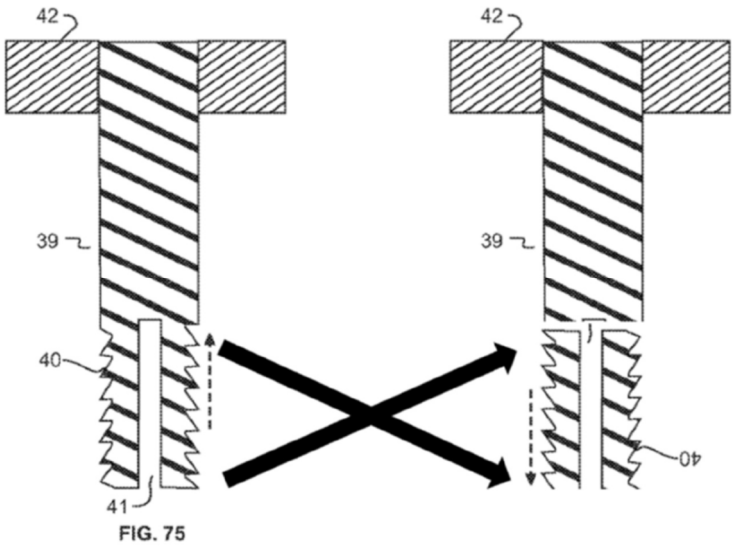


FIG. 75

[2] In another case, Leinsing's opinions based on boilerplate were excluded under this precedent. *See Boston Sci. Corp. v. Cook Med. LLC*, 2023 U.S. Dist. LEXIS 17482, *17-20 (S.D. Ind. Feb. 2, 2023).

The image on the right is not in the specification. Leinsing created it by flipping the threads of Figure 75 upside down. Ex. 2021, ¶ 136; Ex. 1036, 101:25-102:7.

Leinsing's embodiment does not depict what the sentence quoted above describes. The sentence does not say the threads are "in the opposite direction to the arrow shown" 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," in contrast to "rotation to a design torque." Ex. 1012 at 97 (emphasis added). Thus, this sentence describes a screw that is pushed down into the abutment, not a screw with reverse buttress threads that is screwed in.[3] Ex. 1036, 26:11-24.[4]

The push-in embodiment described in this sentence does not support the claims, because the claims require the screw to be capable of being screwed into the abutment to a predetermined torque. Ex. 1001, 25:56-59, 26:61-65; *Ariad*, 598 F.3d

[3] The Board appears to have mistakenly accepted SDC's incorrect interpretation of this sentence. Decision at 27, 29 n.14, 32.

[4] Thus, contrary to SDC's arguments (Response at 43, 56-58 & n.6), Brunski did not "overlook" a reverse buttress thread embodiment (or any other embodiments).

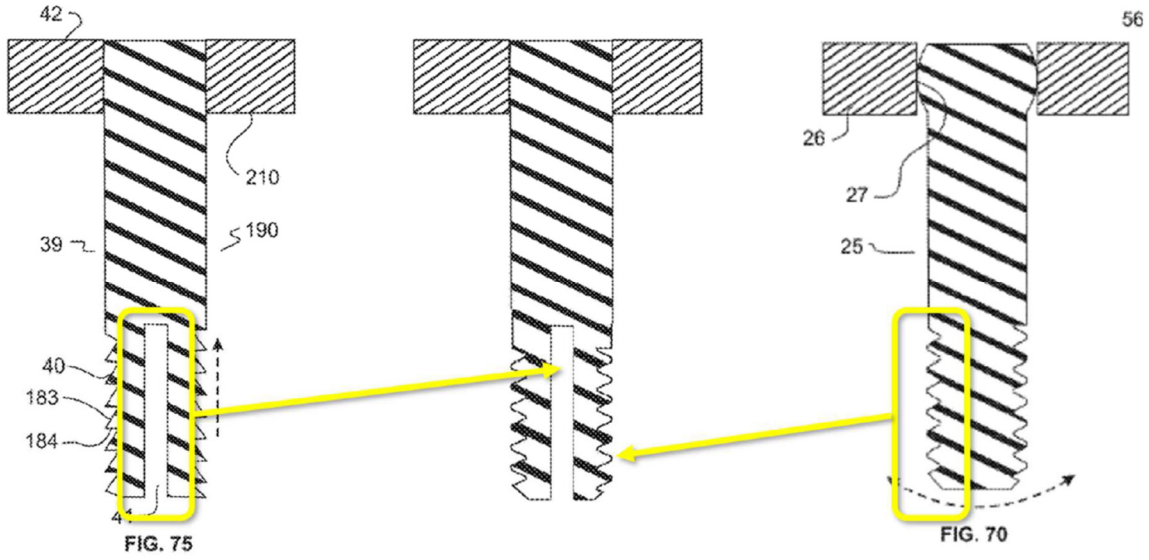
at 1351 ("[T]he description must 'clearly allow [POSAs] to recognize that [the inventor] invented what is claimed.'").

SDC argues "[a] POSA would understand that these threads, if designed correctly, could also screw into the abutment." Response at 37. 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 41-44), the Priority Applications do not describe temporary screws 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) "could be combined with" Figure 75 (left) to make a new embodiment (middle):



Id. at 42-43. SDC relies on the boilerplate specification statement that "features, structures, or characteristics may be combined in any suitable manner in one or more embodiments without limitation." Ex. 1012 at 72; Response at 43.

The middle image above is not in the specification. Leinsing created it by changing the buttress threads in Figure 75 to symmetric threads as in Figure 70. Ex. 2021, ¶ 147; Ex. 1036, 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) ("A patent owner cannot show written description support by picking and choosing claim elements from different embodiments that are never linked together in the specification."). Thus, even if a POSA could combine these two embodiments, the resulting obvious embodiment does not support the claims because it is not described, notwithstanding the boilerplate. *See Lockwood*, 107 F.3d at 1572; *SunModo*, 890 F.3d at 1050-51.

Finally, Leinsing's made-up screw has the same symmetric threads as the definitive screw. SDC's argument that it has different threads because of the slot

(Response at 41-42, 44) has been waived because it is based on an implicit construction of the different-thread limitations that SDC has not articulated. Decision at 14; Paper 13 at 10.

3. Interference Fit

Contrary to SDC's arguments (Response at 44-46), the Priority Applications do not describe interference-fit temporary screws that support the different-thread limitations.

SDC relies on the following sentence in the specification:

> Similarly, an interference fit between the bottom of the post with the threads may also be designed to provide sufficient engagement to provide adequate alignment and fixing of the coping for the pick-up bonding process described earlier.

Ex. 1012 at 100; Response at 44.

This interference-fit embodiment is described as pushed in, not screwed in. This is clear from the preceding sentences, which describe it as an example of an "alternate approach[]" that uses "axial insertion without rotation":

> Although the descriptions above use rotational engagement of the bottom of the post with internal threads of the abutment as a preferred approach, this is not meant to be limiting. Alternate approaches for engaging a temporary attachment post with abutment threads through axial insertion without rotation are considered to be part of this disclosure. For example, … Similarly, an interference fit ...

Ex. 1012 at 100 (emphasis added). This push-in embodiment does not support the claims because, as explained above, they require the screw to be capable of being screwed in to a predetermined torque. Ex. 1001, 25:56-59, 26:61-65; *Ariad*, 598 F.3d at 1351.

SDC argues a POSA "would understand that such a screw could be designed to be pushed in or rotated in." Response at 44. According to SDC, a POSA could design a post "without threading" that would deform when screwed in, resulting in "a shallow male thread." *Id.* at 44-45; Ex. 2021, ¶¶ 155-57. Leinsing depicts this post (red) after insertion into the abutment:



This image is not in the specification. Leinsing created it. Ex. 2021, ¶ 155; Ex. 1036, 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. Additionally, Leinsing's unthreaded post also does not

support the claims because it is not a "screw" with "threads," as required by the claims. Ex. 1001, 25:53-59, 26:51-65.[5]

B. Release Limitations Are Not Supported

As explained below, none of SDC's "species" support the release limitations in claims 1 and 9.

1. Asymmetric Threads Without Slot

Contrary to SDC's arguments (Response at 39-41), the Priority Applications do 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. 1012 at 67; Response at 39-41. According to SDC, because "some embodiments" have "a deflecting feature," other embodiments do not, and therefore "the split post shown in Figure 75" is not "essential" or "critical." Response at 39-41, 49-50.

[5] SDC's cited specification excerpts (Response at 44-45) describe screw-in embodiments, not the described push-in interference-fit embodiment. Ex. 1012 at 59, 65-66.

SDC's interpretation 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. 1012, 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 screw can be pulled out without being unscrewed because of asymmetric threads 40 and the deflecting legs created by slot 41. Ex. 1012 at 67, 78, 97, 100 ("…the split post bottom structure shown in FIG. 75 which allows axial extraction…"), Fig. 75; Petition at 24-27. These specification statements make clear that the function of pulling out the screw is important, and that the buttress threads and deflecting legs are both important to this function.[6] The statements also contradict SDC's assertions that the specification does not "indicate" that "the asymmetric buttress threads" or

[6] This is so notwithstanding SDC's later amendments to the specification during prosecution, which sought to obscure the importance of slot 41. Ex. 1015 at 287; Petition at 29.

"split post" in Figure 75 "are critical elements of the invention." Response at 39-40, 55-56.[7]

SDC also argues "[a] POSA would understand that Figure 75's slotted post is not essential to the design and could be incorporated or not, as desired," including by making threads out of "plastic or polymer material" that deforms so the screw can be pulled out. Response at 39-40, 49-50. SDC depicts this screw without a slot (right) alongside Figure 75 (left):

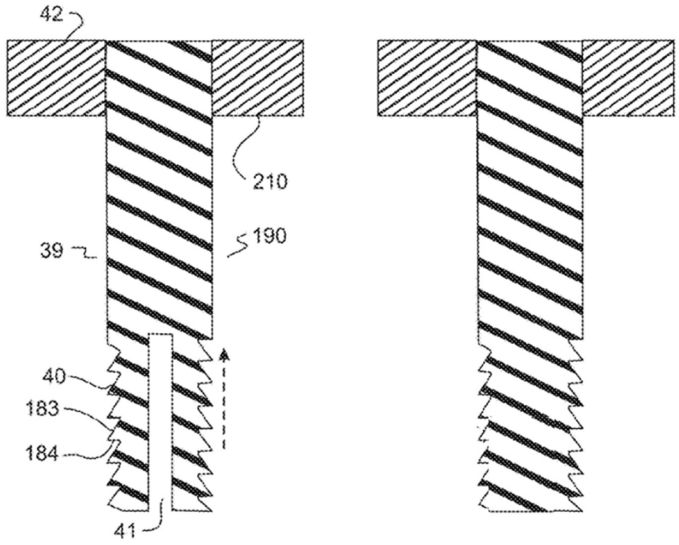


FIG. 75

The image on the right is not in the specification. Leinsing created it by removing slot 41 from Figure 75. Ex. 2021, ¶ 142; Ex. 1036, 125:11-19.

[7] SDC's assertions are also contradicted by its own statements that both features are important. Response at 24-25, 35-36, 47, 51, 68.

The specification does not describe any threaded temporary screw without a slot that is pulled out because it is made of deformable "plastic or polymer." Contrary to Leinsing's understanding (Ex. 1036, 125:20-126:10, 127:15-17), such an embodiment that is not described cannot be cobbled together from an "amalgam of disclosures plucked selectively from the specification." *See Novozymes*, 723 F.3d at 1349. Even if a POSA could create this new screw, 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 44-46), the Priority Applications do not describe interference-fit temporary screws that support the release limitations, for all the reasons discussed above for the different-thread limitations.

C. SDC's Cases Are Distinguishable

SDC relies heavily on *Gillette* and *Medtronic*. Response at 48, 53-56. Both cases are distinguishable, for two reasons.

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. 1012 at 67, 78, 97, 100, Fig. 75; Petition at 24-27.

Second, in *Gillette* and *Medtronic*, the specification contained what SDC calls "permissive language" (Response at 55) regarding the limitations. *See* 2023 Pat. App. LEXIS 3126 at *28-30; 69 F.4th at 1353-54. SDC asserts that the specification here has similar "permissive language," but does not cite any such statements. Response at 55. To the extent SDC relies on any statements discussed above, none support the claims for the reasons explained above.

D. Brunski Did Not Use Different POSAs

SDC's argument that Brunski used different POSAs for support and obviousness (Response at 58-59 & n.7) is demonstrably incorrect. These are different issues with different standards based on different statutory provisions and different evidence. Brunski analyzed these different issues under their respective standards from the vantage of the same POSA. Ex. 2022 at 244:12-48:2; Ex. 1002, ¶¶ 22-26, 31-38, 41, 127-130.

E. No Support "At Least As To" Figure 75

SDC's argument that the claims are supported "at least as to" the Figure 75 embodiment (Response at 59-60) 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). If SDC were correct, the generic claims in both cases would have been supported "at least as to" the described conical and spike embodiments.[8]

F. No "Implicit" Construction

SDC argues the Board "implicitly" construed the claims by stating that the temporary and definitive screw threads "need only be 'different' in pattern or profile" and that "[t]his is a broad concept." Response at 23-25 (citing Decision at 28, 30). According to SDC, this "implicit" construction is too broad because it does not account for other limitations that require the temporary screw to be screwed in and pulled out. *Id.*

SDC's argument is incorrect. Neither the Board nor Straumann ever stated the claims encompass temporary screws that are not screwed in or pulled out. Instead, the Board correctly explained that Figure 75 is the only temporary screw described that has "different" threads and is "screwed in" and "pulled out rather than screwed out." Decision at 28-30, 32.

[8] SDC has waived a section 112(f) argument (Response at 61) because SDC did not demonstrate this provision applies or identify a function or corresponding structure. Decision at 14; Paper 13 at 10.

Confusingly, SDC next argues the Board adopted an implicit construction that is too narrow because it limits claim 1 to Figure 75 and thereby fails to account for dependent claim limitations, and also "contradicts the specification," which discloses "alternate embodiments." Response at 25-27.

Neither the Board nor Straumann ever stated that claim 1 is limited to Figure 75. Decision at 27-33. 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 structure. Petition at 32-43. Moreover, as explained above, the specification does not disclose any "alternate embodiments" that support the claims.[9]

G. Dependent Claims Are Not Supported

1. Different-Thread and Release Limitations

SDC's arguments that the different-thread limitations in dependent claims 2-8 and 12 and the release limitations in claims 2, 3, 5-7 and 10-12 are supported based on SDC's arguments for the independent claims (Response at 61-62) should be rejected for the reasons discussed above.

[9] SDC's reliance on the district court's decision (Response at 28) is misplaced because the court merely decided the claims are not indefinite "hybrid" claims with method steps.

SDC did not respond to or dispute Straumann's argument that the release limitation in claim 4 is not supported. Petition at 43.

2. **Claim 7**

SDC argues the "threads deform" limitation of claim 7 is supported by "an asymmetric threaded temporary screw made of plastic without a slotted or split post" and "[a] fastener using an interference fit." Response at 62.

As explained above, the specification does not describe any temporary screws with asymmetric threads without a slot, and the described interference-fit embodiment does not support the claims because it is pushed in.

3. **Claim 10**

SDC argues the "different pitch angle" limitation of claim 10 is supported because the Figure 75 temporary screw must have a smaller thread diameter (and pitch angle) than the Figure 9 definitive screw, otherwise "the buttress threads would not fit in the female abutment threads." Response at 61-62.

However, SDC did not respond to or dispute Straumann's alternative argument that, even if these pitch angles are different, claim 10 is not supported because it "encompasses many other undisclosed threads with different pitch angles." Petition at 42.

SDC also does not dispute that Figures 9 and 75 depict both screws with the same thread diameter (and pitch angle). *Id.*; Ex. 1002, ¶¶ 154-58. Therefore, SDC's

argument is really that a POSA would make the temporary screw thread diameter smaller so that it screws into the abutment. However, this obvious embodiment does not support claim 10 because it is not described. *See Lockwood*, 107 F.3d at 1572.

H. Enablement

Contrary to SDC's argument (Response at 63), 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 32-43), with citations to enablement precedent (*id.* at 36-37, 40-41).

There was no need to address the *Wands* factors because, as SDC tacitly concedes (Response at 63), 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).

I. Ground 3

SDC did not respond to or dispute Straumann's argument that, if claims 7 and 10 are supported as SDC argues, Kofford anticipates these claims. Petition at 53-54.

III. Grounds 4-6

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 screws with different threads. Response at 65-68.

That is not the law. 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 the different-thread limitations. As Brunski explained, there was a motivation to use a temporary screw with flexible buttress threads in Bernhard's system. Ex. 1002, ¶¶ 260-82, 353; Petition at 54-62, 78.[10] As Brunski further explained, the resulting combinations meet the different-thread limitations because the buttress threads of this temporary screw are different than the symmetric threads of definitive screw 750 in Bernhard. Ex. 1002, ¶¶ 302, 310, 336, 346-48; Petition at 66, 68, 74-75, 77.

[10] SDC's conclusory assertion that "Petitioner has not produced any evidence suggesting a motivation to mismatch the threads" (Response at 68) ignores Brunski's evidence.

B. Motivation to Combine

SDC does not dispute the motivation to combine Bernhard and Poovey.[11] 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 temporary screw out of the abutment. Response 69-72; Ex. 2021, ¶¶ 226-228, 233-236.

SDC's argument should be rejected. SDC treats the reduction of the required removal force (i.e. the "ease" of "pulling the screw out") 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 of the denture conversion systems at issue is to reduce the required removal force as much as possible (as long as stability is maintained). Ex. 1036, 41:19-44:16, 45:25-46:19. That is important in order not to injure or cause discomfort to the patient (who, in some cases, has a freshly-placed dental implant in his/her jaw). *Id.*

Moreover, as Leinsing also agreed, both Bernhard and Poovey express this very consideration. Ex. 1036, 47:9-50:3. Bernhard explains that "[g]enerally, the

[11] SDC has also abandoned its earlier argument that there was no reasonable expectation of success based on Poovey. Decision at 38-40.

threshold force required to overcome the provisional connection feature and detach the components should be chosen such that injury to the patient's bone is avoided" and that "[t]his is particularly important in cases of provisional prosthetic systems … attached immediately or shortly after surgical implantation of the implants." Ex. 1003, [0067]. Similarly, Poovey explains that "[t]he threading and/or sleeve coating of the impression coping securing screw is preferably a plastic or silicone material with enough flexibility to be pulled out of the implant with low resistance such that it is not difficult for the dental professional and does not cause pain or stress to the patient." 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 into the flexible temporary screw: As Brunski explained, "[h]aving decided to use a temporary screw 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 Gracco, they would require "less pull-out force" and would "make the screw easier to pull out while maintaining its secure and stable threaded

connection." Ex. 1002, ¶¶ 268-82; Petition at 57-62.[12] Moreover, a POSA would have been motivated by Derey to incorporate deflecting legs because they "would make it easier to pull the temporary screw out of the abutment while still ensuring that the temporary connection is stable and secure." Ex. 1002, ¶¶ 355-57; Petition at 79-80. Indeed, Derey expressly teaches that the deflecting legs enable the fastener to "easily detach" from the implant. Ex. 1008 at 10; Ex. 1036, 171:24-172:9.

Brunski's unrebutted motivation evidence is more than sufficient because it demonstrates that these motivations came from: (1) the prior art (Bernhard and Poovey providing motivation, and Gracco and Derey providing solutions, to reduce the required removal force as much as possible); (2) the nature of the problem to be solved (how to design the flexible screw to be easier to pull out); and (3) a POSA's knowledge (a buttress thread's shorter depth and smaller angle make it easier to pull out). *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1365 (Fed. Cir. 2018)

[12] SDC and Leinsing acknowledged that "the principle that different thread profiles affect the pullout force required to disengage a screw is well-known and the natural result of inherent geometry" and that "Gracco itself confirms that the inherent geometric characteristics of different screw profiles are well known." Paper 9 at 22, 24; Ex. 2010, ¶¶ 83, 88.

(motivation "can come from the knowledge of those skilled in the art, from the prior art reference itself, or from the nature of the problem to be solved").

Finally, the Federal Circuit has rejected arguments (like SDC's argument here) that the fact that one reference "already addresse[d]" 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 (Response at 72) should be rejected.

SDC 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 72. 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, prior to taking an impression"); *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 screws that are pulled out, as claimed. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) ("A reference does not

teach away … if it … does not 'criticize, discredit, or otherwise discourage' investigation into the invention claimed.").

D. No Objective Indicia

1. No Nexus

SDC has not carried its burden of demonstrating the required nexus between any of its objective indicia and the claims. *See Bosch Automotive Service Solutions, LLC v. Matal*, 878 F.3d 1027, 1036 (Fed. Cir. 2017) (nexus required between objective indicia and claims); *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999) (patentee has burden of demonstrating nexus).

All of SDC's objective indicia arguments rely on SDC's Separable Fastener and/or Straumann's NeoConvert. Response at 74-78. However, SDC has not demonstrated that either device "embodies the claimed features," as required to establish a nexus. *See Bosch*, 878 F.3d at 1037. SDC does not dispute its Separable Fastener does not practice any claims. Petition at 84-86. Moreover, SDC's conclusory assertions that NeoConvert infringes without any explanation or evidence do not meet its burden. Response at 75-76.

2. No Long-Felt Need

SDC has not demonstrated any long-felt but unsolved need because SDC has not pointed to "an articulated identified problem" and introduced "evidence of efforts to solve that problem" that were unsuccessful. *See Tex. Instruments v. Int'l Trade Comm'n*, 988 F.2d 1165, 1178 (Fed. Cir. 1993). SDC merely asserts "[l]ittle

changed between" statements in 2001 and 2016 about impression techniques. Response at 74. However, "the mere passage of time without the claimed invention is not evidence of nonobviousness." *See Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004).

SDC's conclusory assertion that its Separable Fastener has "significant advantages" over traditional impression techniques (Response at 75) does not support non-obviousness because SDC's device does not have the required nexus. *See Sjolund v. Musland*, 847 F.2d 1573, 1582 (Fed. Cir. 1988).

3. No Copying

SDC confusingly argues that competition between Straumann's NeoConvert and SDC's Separable Fastener supports non-obviousness. Response at 75. However, competition is not copying. *See Iron Grip*, 392 F.3d at 1325. Moreover, neither device has the required nexus. *See Liqwd, Inc. v. L'Oreal USA, Inc.*, 941 F.3d 1133, 1138 (Fed. Cir. 2019).

4. No Industry Praise

SDC's praise arguments rely on statements about the Separable Fastener or NeoConvert. Response at 76-77. However, neither device has the required nexus. *See Bosch*, 878 F.3d at 1036-37.

Moreover, most of the cited statements are not industry praise by others as required, but rather statements by or on behalf of SDC or Straumann. *See In re Cree*,

818 F.3d 694, 702 (Fed. Cir. 2016) (statements about one's own work are not persuasive evidence of industry praise).

IV. Conclusion

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

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Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Petitioner's Reply complies with the word limit of 5,600 words because it has 5,596 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.

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CERTIFICATE OF SERVICE

The undersigned certifies that on June 10, 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:

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