

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SMITH & NEPHEW, INC. and
ARTHROCARE CORP.,
Petitioners,

v.

ARTHREX, INC.,
Patent Owner.

Case IPR2017-00275
Patent 9,179,907 B2

Before WILLIAM V. SAINDON, BARRY L. GROSSMAN, and
TIMOTHY J. GOODSON, *Administrative Patent Judges*.

GOODSON, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioners filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1, 4, 8, 10–12, 15, 16, 18, 25–28, and 30 of U.S. Patent No. 9,179,907 B2 (Ex. 1001, “the ’907 patent”). Patent Owner filed a Preliminary Response. Paper 6. We instituted an *inter partes* review of claims 1, 4, 8, 10–12, 16, 18, and 25–28 on the following grounds under 35 U.S.C. § 102:

Reference	Claims
ElAttrache ¹	1, 4, 8, 10–12, 16, 18, and 25–28
Martinek ²	1 and 16

See Paper 7 (“Dec. on Inst.”).

After institution of trial, Patent Owner filed a Patent Owner Response. (Paper 17, “PO Resp.”), and Petitioners filed a Reply (Paper 21, “Reply”). Patent Owner also filed a motion to exclude (Paper 25), which we address in Section VI below. We held a hearing, a transcript of which is included in the record. Paper 33 (“Tr.”). Following the hearing, and after receiving our authorization to do so, the parties filed supplemental briefs to address a decision the Federal Circuit issued after the hearing. See Paper 34; Paper 35.

We have jurisdiction under 35 U.S.C. § 6. Petitioners bear the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail,

¹ U.S. Patent App. Pub. No. US 2002/0013608 A1, published Jan. 31, 2002, Ex. 1010.

² Int’l Patent App. Pub. No. WO 02/21999 A2, published Mar. 21, 2002, Ex. 1011.

Petitioners must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioners have shown by a preponderance of the evidence that claims 1, 4, 8, 10–12, 16, 18, and 25–28 of the '907 patent are unpatentable. *See* 35 U.S.C. § 316(e).

We note at the outset that the central question in this case is whether the challenged claims are entitled to the earliest priority date claimed in the '907 patent. In particular, the parties dispute whether the entire chain of priority documents provides adequate written description support for a generic “first member including an eyelet” that includes both a flexible suture loop species and a rigid implant species. We address that question in Section V of this Decision. The priority issue is dispositive because Patent Owner agrees that if the cited references qualify as prior art, the challenged claims are anticipated. *See* Tr. 53:21–54:9.

A. Related Matters

Patent Owner asserted the '907 patent against Petitioners in a civil action in the U.S. District Court for the Eastern District of Texas, *Arthrex, Inc. v. Smith & Nephew, Inc.*, Consolidated Civil Action Nos. 2:15-cv-01047 and 2:15-cv-01756. Pet. 7–8; Paper 3, 1. After trial in that case, a jury found that Patent Owner proved by a preponderance of the evidence that Petitioners infringed claims 4, 8, 16, and 27 of the '907 patent, and that Petitioners did not prove by clear and convincing evidence that any of those claims were invalid as anticipated. Paper 19, 1; Ex. 2038, 2. The district court entered judgment finding that Petitioners willfully infringed claims 4, 8, 16, and 27 of the '907 patent and further finding those claims not invalid.

Paper 19, 1; Ex. 2039, 1. The parties then entered a settlement agreement and filed a Joint Stipulated Motion for Dismissal with Prejudice. Paper 19, 1–2; Ex. 2040. The district court granted the motion, dismissing all claims and counterclaims with prejudice. Paper 19, 1–2; Ex. 2041.

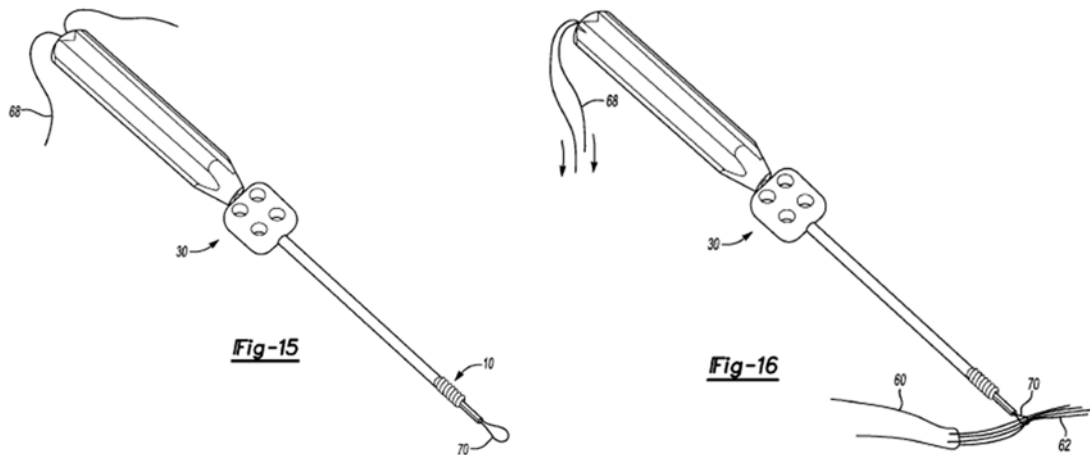
Neither party has argued that the Dismissal with Prejudice, or any other ruling of the district court, presents a bar to this proceeding. *See* Tr. 5:18–6:21; 52:10–19. The Federal Circuit has explained that a dismissal with prejudice is a judgment on the merits for purposes of claim preclusion, but that the parties can, in a separate agreement, reserve the right to litigate a claim that would otherwise be barred by res judicata. *Pactiv Corp. v. Dow Chem. Co.*, 449 F.3d 1227, 1230–31 (Fed. Cir. 2006). The parties’ settlement agreement that resulted in the Dismissal with Prejudice is not of record in this proceeding, but the parties indicated at the hearing that their settlement agreement provides for this proceeding to continue. Tr. 6:19–21; 52:20–53:3. In the absence of any argument that this proceeding is precluded, and in view of the parties’ agreement that their earlier settlement allows this proceeding to continue, we are satisfied that the Dismissal with Prejudice does not bar this proceeding.

B. The ’907 Patent

The ’907 patent describes a knotless suture securing assembly. Ex. 1001, at [54], [57]. The Background explains that suture anchors are one type of fixation device that can be used for reattaching soft tissue that has become detached from bone. *Id.* at 1:20–33. A drawback of prior art suture anchors, however, is that a surgeon is “generally require[d] . . . to tie knots in the suture to secure the tissue to the bone, which is tedious and time-consuming.” *Id.* at 1:33–36. The Summary section states that the disclosed

embodiments “are useful for securing soft tissue to bone with excellent pull-out strength without requiring a surgeon to tie suture knots to secure the suture in place or to secure the tissue to the bone.” *Id.* at 1:43–46. As relevant to the issues in this proceeding, the ’907 patent describes two main embodiments: a flexible suture loop embodiment and a rigid implant embodiment.

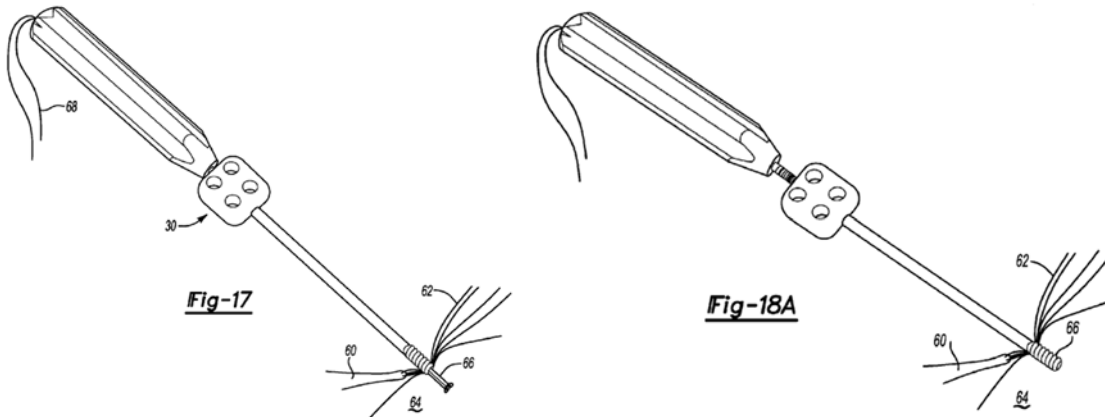
Figures 15 and 16, reproduced below, depict the flexible suture loop embodiment:



Figures 15 and 16 illustrate a driver, screw, suture loop and graft with graft sutures attached. *Id.* at 2:46–50.

In that embodiment, as shown in Figures 15 and 16, driver 30 is pre-loaded with screw 10, and traction suture 68 is passed into the cannula of driver 30 until looped end 70 is exposed at the distal end. *Id.* at 5:48–53. Sutures 62, which are attached to graft 60, are passed through traction suture loop 70. *Id.* at 5:51–55. By drawing on traction suture 68, suture loop 70 is tightened and tension is applied to graft sutures 62. *Id.* at 5:62–64.

Figures 17 and 18 are reproduced below:



Figures 17 and 18A illustrate the driver, screw and suture loop engaging graft sutures in a bone socket. *Id.* at 2:52–57.

As shown in Figure 17, driver 30 is positioned such that screw 10 engages bone 64 at the edge of hole 66. Rotating driver 30 causes screw 10 to be inserted into hole 66 until fully installed, as shown in Figure 18A. *Id.* at 6:8–13. In that position, “sutures 62 or the graft 60 [is] pinned and/or wound between the base and sidewall of socket 66 and interference screw 10.” *Id.* at 6:13–15. Driver 30 can then be removed. *Id.* at 6:18–19.

The rigid implant embodiment is shown in Figure 21, reproduced below:

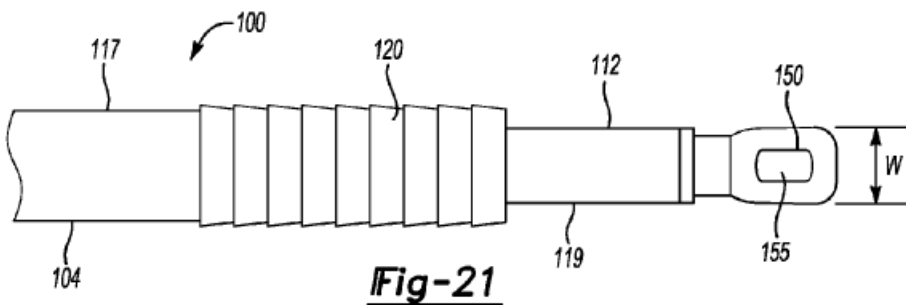
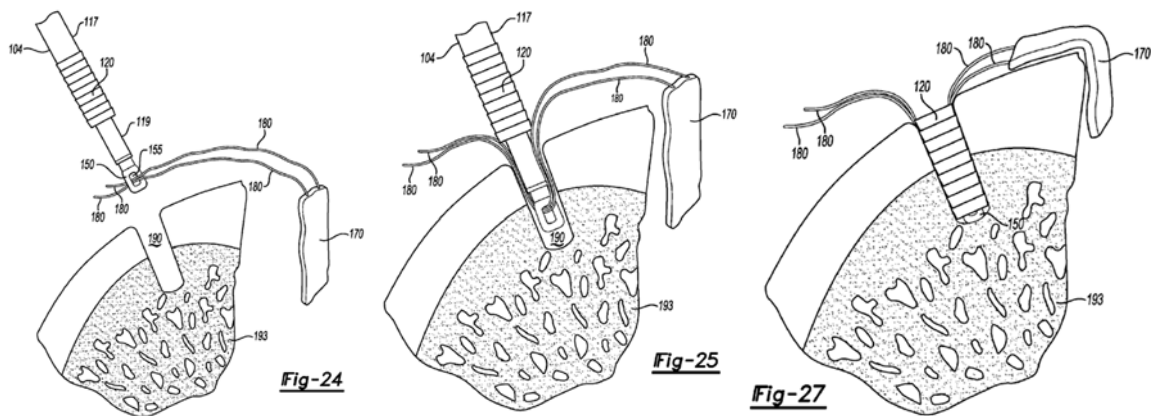


Figure 21 depicts driver 100, interference device 120, and eyelet implant 150. *Id.* at 6:47–55, 7:4–5.

Eyelet implant 150 includes “aperture 155 for receiving a suture attached to a graft to pass through the eyelet implant 150.” *Id.* at 7:12–14. Interference device 120 can be a screw or an interference plug, and is “preferably formed of a bioabsorbable material such as PLLA.” *Id.* at 6:55–57. “[E]yelet implant 150 is made of a material similar to that of the interference device 120.” *Id.* at 7:10–12.

Figures 24, 25, and 27 are reproduced below:



Figures 24, 25, and 27 are schematic views of the surgical site undergoing a graft fixation with a push lock driver. *Id.* at 3:8–23.

Figure 24 depicts suture 180, which is attached to graft 170, passing through aperture 155. *Id.* at 7:44–49. Implant 150 is then inserted into bone socket 190, as shown in Figure 25. *Id.* at 7:50–53. As can be seen in Figure 27, “interference device 120 is then impacted into the pilot hole 190 so that the interference device 120 advances toward the distal end 112 of driver 100 and securely engages and locks in the eyelet implant 150 with the sutures 180.” *Id.* at 7:59–63. The driver is removed and the suture ends are clipped, “leaving the graft 170 securely fastened to bone 193.” *Id.* at 7:64–67.

C. Claims Challenged in Instituted Grounds

As noted above, we instituted trial as to claims 1, 4, 8, 10–12, 16, 18, and 25–28. *See* Dec. on Inst. 20. Of these, only claims 1 and 16 are

independent claims. Claims 4, 8, and 10–12 depend from claim 1, and claims 18 and 25–28 depend from claim 16. Claim 1 is representative, and is reproduced below with emphasis indicating the language on which the parties’ dispute focuses:

1. A suture securing assembly, comprising:
 - an inserter including a distal end, a proximal end, and a longitudinal axis between the distal end and the proximal end;
 - a first member including an eyelet*** oriented to thread suture across the longitudinal axis, the first member being situated near the distal end of the inserter, the first member being configured to be placed in bone; and
 - a second member situated near the distal end of the inserter, the second member being moveable by a portion of the inserter relative to the first member in the distal direction toward the eyelet into a suture securing position where the second member locks suture in place.

Ex. 1001, 10:21–34 (emphasis added).

We note that in their Petition, Petitioners also challenged claims 15 and 30. *See* Pet. 59–60, 65. Those dependent claims recited that “the first member is a rigid implant defining the eyelet.” Ex. 1001, 11:16–17, 12:42–43. However, on the same day Patent Owner filed its Preliminary Response, Patent Owner filed a statutory disclaimer of claims 15 and 30. *See* Ex. 2001; Prelim. Resp. 20 n.6, 65. Consequently, in accordance with 37 C.F.R. § 42.107(e), claims 15 and 30 were not included in the grounds on which we instituted trial and our institution decision was based solely on the remaining claims. *See* Dec. on Inst. 7–8. Because claims 15 and 30 have been disclaimed, we do not address them in this Decision. *See SAS Institute Inc. v. Iancu*, No. 16-969, ___ U.S. ___, 2018 WL 1914661, at *7 (Apr. 24, 2018) (“[T]he claims challenged ‘in the petition’ will not always survive to the end

of the case; some may drop out thanks to the patent owner's actions. And in that light it is plain enough why Congress provided that only claims still challenged 'by the petitioner' at the litigation's end must be addressed by the Board's final written decision.").

II. CLAIM CONSTRUCTION

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). In our Institution Decision, we determined that resolution of the disputed issues at that stage of the proceeding did not require an express interpretation of any claim term. *See* Dec. on Inst. 7 (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). In its Patent Owner Response, Patent Owner states that no construction is necessary because it is undisputed that the phrase "first member including an eyelet" includes both the flexible and rigid eyelet species. PO Resp. 6. Petitioners do not present any claim construction arguments in their Reply. Based on our review of the complete record, we agree with the parties that no express construction is necessary to resolve the disputed issues in this proceeding.

III. LEVEL OF ORDINARY SKILL IN THE ART

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir.

1986); *Orthopedic Equip. Co., Inc. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioners propose that a person of ordinary skill in the art of the '907 patent would have had

(a) a master's degree in mechanical engineering or equivalent, or a bachelor's degree in such field and at least two years of experience designing suture anchors; or (b) a medical degree and at least two years of experience performing surgeries that involve suture anchors and/or advising engineers on suture anchor design.

Pet. 16 (citing Ex. 1019 ¶¶ 91–94). Patent Owner does not contest Petitioners' proposal in its Patent Owner Response, and Dr. Geoffrey Higgs, Patent Owner's declarant, states that he agrees with the proposed level of ordinary skill in the art. Ex. 2037 ¶ 39. We adopt Petitioners' unopposed statement of the level of ordinary skill in the art.

IV. ANTICIPATION ANALYSIS

A. *Legal Standard*

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. Inc., v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). “Because the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008).

B. *Anticipation Based on ElAttrache*

Petitioners argue that claims 1, 4, 8, 10–12, 16, 18, and 25–28 are anticipated by ElAttrache. Pet. 45–59.

ElAttrache is the published version of one of the applications to which the '907 patent claims priority. Ex. 1010 at [21]; Ex. 1001, 1:13–14; Pet. 46. ElAttrache published on January 31, 2002. Ex. 1010 at [43]. Patent Owner has not established entitlement to a priority date before ElAttrache's publication. For the reasons discussed in Section V below, the challenged claims are not entitled to priority to any of the applications before May 8, 2014, the filing date of the application that issued as the '907 patent. *See* Ex. 1001 at [22]; 35 U.S.C. § 100(i)(1). Thus, ElAttrache qualifies as prior art under 35 U.S.C. § 102(a)(1).³

ElAttrache describes a knotless suture anchor. Ex. 1010 ¶¶ 6–7. Figures 14–19 and the accompanying disclosure in ElAttrache are similar, if not identical, to the figures and description of the flexible suture loop embodiment of the '907 patent, summarized above. *Compare* Ex. 1010 ¶¶ 45–48, *with* Ex. 1001, 5:35–6:22.

Petitioners argue that ElAttrache discloses every limitation of the challenged claims. For example, with respect to claim 1, Petitioners assert that ElAttrache's driver 30 corresponds to the “inserter,” ElAttrache's traction suture 68 and suture loop 70 correspond to the “first member,” and ElAttrache's screw 10 corresponds to the “second member.” Pet. 47–49. Petitioners also provide a detailed explanation of how ElAttrache discloses the limitations of the other challenged claims. *Id.* at 50–59. Patent Owner agrees that if ElAttrache qualifies as prior art, ElAttrache discloses the subject matter of each of the challenged claims. *See* Tr. 53:23–54:5. After

³ Because the effective filing date of at least one claim of the '907 patent is after March 16, 2013, the first inventor to file version of 35 U.S.C. § 102 is applicable under the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”). *See* AIA § 3(n)(1).

reviewing Petitioners' unrebutted evidence and argument, we find that ElAttrache discloses, arranged as in the claims, each limitation of claims 1, 4, 8, 10–12, 16, 18, and 25–28.

There is no inconsistency between our finding that ElAttrache discloses each limitation of the challenged claims under § 102 and our determination that ElAttrache qualifies as prior art to the challenged claims. Indeed, Patent Owner does not argue that there is any such inconsistency. As the Federal Circuit's predecessor court explained, "the description of a single embodiment of broadly claimed subject matter constitutes a description of the invention for anticipation purposes . . . , whereas the same information in a specification might not alone be enough to provide a description of that invention for purposes of adequate disclosure." *In re Lukach*, 442 F.2d 967, 970 (CCPA 1971). In application here, we find that the broad recitation of an "eyelet" is anticipated by the narrower disclosure in ElAttrache of the suture loop.

C. Anticipation Based on Martinek

Petitioners argue that claims 1 and 16 are anticipated by Martinek. Pet. 59–65.

Martinek describes a knotless suture anchor. Ex. 1011, 2. Figure 8 of Martinek is reproduced below:

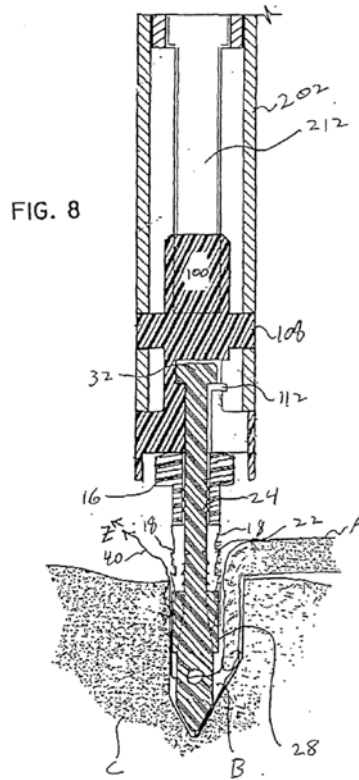


Figure 8 depicts a cross-sectional view of implantation apparatus 200 positioned in bore B drilled in shoulder bone C, with tissue section A secured to setting pin 24. *Id.* at 6, 12. Once in position, apparatus 200 is actuated, driving expandable member 12 distally and causing the distal ends of legs 18 to be driven radially outward by setting pin 24. *Id.* at 12–13. “As legs 18 are driven radially outward, barbs 22 engage and secure a portion of suture 40 against the bone C within bore B.” *Id.* at 13.

Petitioners contend that Martinek discloses every limitation of claims 1 and 16. Specifically, Petitioners argue that Martinek’s implantation apparatus 200 corresponds to the “inserter” of claim 1 and the “driver” of claim 16. Pet. 62 (citing Ex. 1011, 10), 64. Petitioners correlate Martinek’s setting pin 24 to the “first member” of claims 1 and 16, and Martinek’s expandable body 12 to the “second member” of claims 1 and 16. Pet. 62–64 (citing Ex. 1011, 4, 8, 13). As with ElAttrache, Patent Owner agrees that if

Martinek qualifies as prior art, Martinek discloses the subject matter of claims 1 and 16. *See* Tr. 54:6–9. After reviewing Petitioners’ un rebutted evidence and argument, we find that Martinek discloses, arranged as in the claims, each limitation of claims 1 and 16.

We also determine that Martinek qualifies as prior art under § 102(a)(1). Patent Owner has not established entitlement to a priority date before Martinek’s publication on March 21, 2002. Ex. 1011, at [43]. As discussed in greater detail in Section V below, the effective filing date of claims 1 and 16 of the ’907 patent is May 8, 2014. Accordingly, Petitioners have established that Martinek anticipates claims 1 and 16 of the ’907 patent.

V. PRIORITY ANALYSIS

A. *Priority Claim in the ’907 Patent*

The application that issued as the ’907 patent was filed on May 8, 2014, as U.S. Patent App. No. 14/272,601 (“the ’601 application”⁴). *See* Ex. 1001 at [21], [22]; *see also* Ex. 1002, 11–58 (reproducing the ’601 application as filed in the file history of the ’907 patent).

The ’907 patent claims priority to a chain of continuation, continuation-in-part, and divisional applications reaching back to June 22,

⁴ The parties followed different conventions in referring to the applications at issue, with Patent Owner generally using the last three digits of the application’s serial number (*see, e.g.*, PO Resp. 4 (“The ’907 patent . . . issued from the ’601 application. . . .”)) and Petitioners alternating between the application’s abbreviated serial number (*see, e.g.*, Pet. 39 (“The ’601 Application . . . purports to be a ‘continuation’ of the ’218.”)) and the year in which the application was filed (*see, e.g.*, Reply 1 (“Arthrex wrongly maintains that the one species . . . disclosed in its 2001 application. . . .”)). Citations in this Decision use the abbreviated serial number except in quotations.

2001, as well as a provisional application filed on June 22, 2000. In particular, the '907 patent contains the following priority claim, with bracketed labels and indentations added for clarity:

This is a continuation of U.S. patent application Ser. No. 13/765,218 [Ex. 1008, “the '218 application”] filed Feb. 12, 2013,

which is a divisional of U.S. application Ser. No. 13/182,893 [Ex. 1007, “the '893 application”], filed Jul. 14, 2011, now U.S. Pat. No. 8,430,909,

which is a continuation of U.S. application Ser. No. 12/022,868 [Ex. 1006, “the '868 application”], filed Jan. 30, 2008, now U.S. Pat. No. 7,993,369,

which is a continuation-in-part of U.S. application Ser. No. 10/405,707 [Ex. 1005, “the '707 application”], filed Apr. 3, 2003, now U.S. Pat. No. 7,329,272,

which is a continuation-in-part of U.S. application Ser. No. 09/886,280 [Ex. 1004, “the '280 application”], filed Jun. 22, 2001, now U.S. Pat. No. 6,544,281,

which claims the benefit of U.S. Provisional Application No. 60/213,263 [Ex. 1003, “the '263 provisional”], filed Jun. 22, 2000.

Ex. 1001, 1:6–16.

B. Summary of the Disputed Priority Issue

Petitioners argue that the challenged claims are not entitled to a priority date before May 8, 2014, because the applications to which the '907 patent claims priority do not provide written description support for a generic “first member” that can be either a flexible loop or a rigid implant. Pet. 20. Although the priority chain at issue here is lengthy and the parties have presented extensive evidence and argument, the priority dispute is circumscribed to a single issue: it focuses solely on the “first member”

limitation in claims 1 and 16⁵ and solely on the written description requirement of 35 U.S.C. § 112. PO Resp. 6–7; Tr. 5:4–17.⁶

C. Allocation of Burden to Establish Entitlement to Priority

Because Patent Owner seeks to antedate the ElAttrache and Martinek references cited in the Petition, Patent Owner bears the burden to argue or produce evidence that the challenged claims of the '907 patent are entitled to the benefit of a filing date that pre-dates those references. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1379–80 (Fed. Cir. 2015); *Research Corp. Techs., Inc. v. Microsoft Corp.*, 627 F.3d 859, 870–71 (Fed. Cir. 2010). Our Decision on Institution articulated this same burden allocation, and Patent Owner did not contest it in the Patent Owner Response. *See* Dec. on Inst. 14. At the hearing, Patent Owner acknowledged that “we have the burden to demonstrate that we can show priority back to the original disclosure.” Tr. 57:9–11.

D. Legal Standards Governing Disputed Priority Issue

For a claim in a later-filed application to be entitled to the filing date of an earlier application, the earlier application must provide written description support for the claimed subject matter. *Anascape, Ltd. v. Nintendo of Am. Inc.*, 601 F.3d 1333, 1337 (Fed. Cir. 2010). Moreover, when a priority claim involves a chain of priority documents, “each application in the chain leading back to the earlier application must comply

⁵ The “first member” limitation is also present in each of the other challenged claims, by virtue of their dependency from claims 1 or 16.

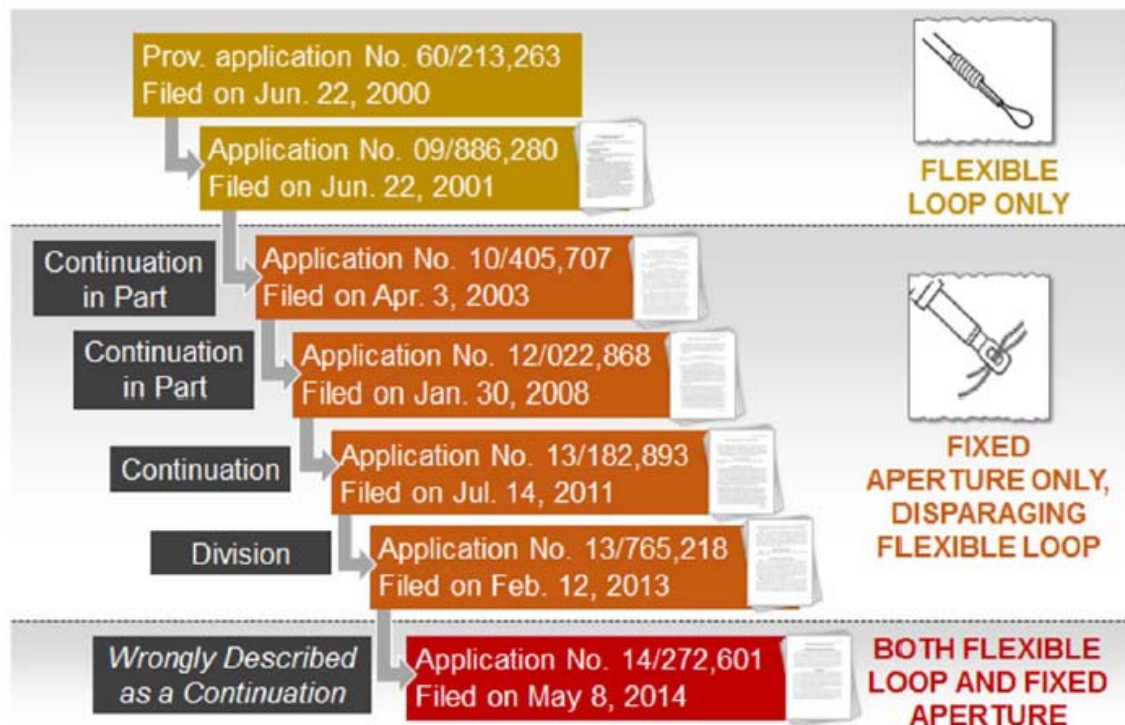
⁶ Petitioner criticizes Patent Owner’s written description arguments for allegedly blending enablement standards and case law into the written description analysis (*see* Tr. 5:15–17; Reply 17 n.11), but Petitioner’s only challenge to the '907 patent’s priority claim is based on the written description requirement.

with the written description requirement of 35 U.S.C. § 112.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1571 (Fed. Cir. 1997).

The written description requirement “guards against the inventor’s overreaching by insisting that he recount his invention in such detail that his future claims can be determined to be encompassed within his original creation.” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1561 (Fed. Cir. 1991). To satisfy the written description requirement, “the disclosure of the earlier application, the parent, must reasonably convey to one of skill in the art that the inventor possessed the later-claimed subject matter at the time the parent application was filed.” *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1158 (Fed. Cir. 1998).

E. Analysis

Petitioners provide the following diagram that summarizes their position on the ’907 patent’s priority claim:



Pet. 4. The diagram illustrates the relationship of the applications to which the '907 patent claims priority. As indicated in the diagram, Petitioners contend that “Patent Owner’s applications in 2000 and 2001^[7] described only the flexible loop embodiment, whereas subsequent applications in 2003, 2008, 2011, and 2013 described only the rigid implant embodiment and *disparaged* the suture loop as a problematic prior concept.” *Id.* at 20. Petitioners further assert that the '601 application filed in 2014 is inaccurately denominated as a continuation because it made substantial changes to the disclosure of the applications between 2003 and 2013, including additional description of the flexible loop approach and deletion of the criticism of the flexible loop approach. *Id.* at 1–3, 22–23.

Petitioners present several arguments for why the challenged claims are not entitled to priority, but our analysis below focuses on Petitioners’ argument concerning the '707 application and the other applications appearing in orange labels in the diagram above (i.e., the '707, '868, '893, and '218 applications). Petitioners argue that the '707 application and other applications in this group only support claims to the rigid implant species, not the flexible loop species or genus claims that would encompass the flexible loop species. Pet. 28–39. We find that argument persuasive. Further, because the absence of written description support in the '707 application for a generic first member covering both the flexible loop and rigid implant embodiments cuts off the chain of priority such that Patent Owner cannot antedate the cited references, this deficiency is dispositive.

⁷ We note that the ElAttrache reference Petitioners rely on for their anticipation challenge is the printed publication of the '280 application filed in June of 2001, i.e., the latter of Petitioners’ so-called flexible loop only disclosures.

Patent Owner acknowledges that “[t]he ’707 application is the first in the priority chain to explicitly disclose a rigid eyelet embodiment.” PO Resp. 19.⁸ Patent Owner maintains that the earlier ’263 provisional and ’280 application do not limit the suture-capturing eyelet to a flexible loop and their disclosure is sufficient to support a generic first member, but there is no dispute that the only embodiment of the first member actually described in those earlier applications is the flexible suture loop embodiment. *See id.* at 13 (“In the embodiments of the provisional application, a looped end 38 of suture is exposed at the distal end of the driver 36 and receives another suture 32, which is used to reattach tissue back to bone.”) (citing Ex. 1003, 5, 9, 13); *id.* at 15 (“In the detailed description of the ’280 application, the eyelet is described much like it was in the provisional application as, a looped end 70 of traction suture 68 exposed at the distal end of the driver.”) (citing Ex. 1004, 11–12); Pet. 24 (asserting that the ’263 provisional and ’280 application disclose only the flexible loop species).

The ’707 application summarizes the ’280 application’s disclosure in its “Background of the Invention” section. Ex. 1005 ¶ 4. The ’707 application explains that in the technique described in the ’280 application,

⁸ Consistent with that acknowledgement, Patent Owner’s disclosures under the local rules for patent cases in the parallel district court case listed April 3, 2003, the filing date of the ’707 application, as the priority date for the now-disclaimed claims 15 and 30. Ex. 1018. Those claims depended from claims 1 and 16, respectively, and added the requirement that “the first member is a rigid implant defining the eyelet.” Ex. 1001, 11:16–17, 12:42–43. At the hearing in this proceeding, Patent Owner was asked whether now-disclaimed claim 15 requiring a rigid implant would have written description support in the ’263 Provisional and responded that “that specific subspecies was not disclosed with respect to any expressed terms of a rigid eyelet.” Tr. 40:18–20.

“a cannulated plug or screw is pre-loaded onto the distal end of a cannulated driver, and a suture or wire loop is passed through the cannula of the driver so that a looped end of the suture or wire is exposed at the distal end of the driver.” *Id.* After suture strands attached to the tissue graft are fed through the loop, “tension [is] applied to the suture or wire loop to keep the graft at the desired location relative to the bone hole, [and] the screw or plug is then fully advanced into the hole.” *Id.* Having summarized the technique of the ’280 application, the Background of the ’707 application then warns against its drawbacks:

Although the above-described technique provides an improved method of graft fixation to bone, the flexible loop configuration at the end of the driver ***disadvantageously impedes sliding of the suture or graft which is fed through the suture loop.*** In addition, because the cannulated driver of [the ’280 application] is provided with a flexible loop at its distal end, placement of the suture or graft at the bottom of the blind hole or socket and the cortical bone must be approximated, thus sometimes necessitating additional removal, tapping and insertion steps to ensure full insertion of the plug or screw into the blind hole or socket. This, in turn, may abrade the adjacent tissue and/or damage the bone or cartilage.

Id. ¶ 5 (emphasis added). Based on these disadvantages, the ’707 application explains that “a need exists for an improved surgical technique and associated device for securing soft tissue to bone which ***allows the free sliding of the suture ends*** attached to a graft to ensure the positioning of the graft at an appropriate distance from the device.” *Id.* ¶ 6 (emphasis added).

The “Summary of the Invention” section presents the invention as an improvement that solves the problems of the suture loop described in the ’280 application:

The instruments and methods of the present invention *overcome the disadvantages of the prior art, such as those noted above*, by providing an eyelet implant at the distal end of a driver that securely engages and locks into a cannulated ribbed body of an interference plug or screw. The eyelet implant includes a *fixed aperture* for receiving a suture attached to a graft, such that the *suture is able to freely slide through the aperture*.

Id. ¶ 7 (emphases added).

After describing in the Background that the flexible suture loop disadvantageously impedes sliding and explaining in the Summary that the invention remedies that deficiency by providing a fixed aperture through which suture can freely slide, the remainder of the '707 application never suggests that a flexible suture loop is a potential embodiment of the disclosed invention. *See id.* ¶¶ 7–34; *see also* Ex. 1019 ¶ 123 (Petitioner's expert, Dr. David McAllister, testifying that "the '707 application never mentions the 'flexible loop' configuration aside from this criticism" in the Background section). Instead, the Detailed Description repeatedly emphasizes the ability of suture to freely slide through the aperture—the same feature that the '707 application described as absent in the flexible loop of the '280 application. *See* Ex. 1005 ¶ 28 ("The suture 80 freely slides through aperture 55 of the eyelet implant 50, allowing the graft 70 to be positioned close to the edge of the pilot hole 90."); *id.* ¶ 29 (describing advantages of the invention, the most important of which is "the suture attached to the graft is allowed to freely slide through the aperture of the eyelet implant").

Finally, at the close of the Detailed Description, the '707 application notes that configurations other than the embodiments specifically disclosed are possible, but underscores that the ability of suture to slide freely through

the aperture is a critical feature of the invention: “[T]he present invention also contemplates implants affixed to or detachable from a preloaded driver and having an aperture of any configuration of any geometrical shape, *as long as it captures suture and allows the captured suture to freely slide within the aperture.*” *Id.* ¶ 33 (emphasis added).

We find credible the testimony of Petitioners’ expert, Dr. David McAllister, that an ordinarily skilled artisan reviewing the ’707 application “would understand that the ‘flexible loop’ configuration was a problematic prior art concept that the inventors had moved beyond when proposing the rigid implant as their ‘present invention’ that ‘overcome[s] the disadvantages of the prior art’ described in the Background section.” Ex. 1019 ¶ 124 (quoting Ex. 1005 ¶ 7); *see also* Pet. 30. As Dr. McAllister correctly notes, “the only ‘disadvantages’ of any sort discussed in the ‘Background of the Invention’ section” are the disadvantages of the flexible loop. Ex. 1019 ¶ 124; *see* Ex. 1005 ¶¶ 3–6. We also credit Dr. McAllister’s testimony that an ordinarily skilled artisan reading the ’707 application “would have come away with the understanding that the suture securing assembly described in the ’707 application cannot rely on a flexible loop as the eyelet [and] would understand a flexible loop to be contrary to the invention’s stated purpose to allow suture to freely slide within the aperture.” Ex. 1019 ¶ 123 (citing Ex. 1005 ¶ 33).

We further agree with Petitioners that this case presents a close analog to the operative facts of *Tronzo*. *See* Pet. 31–32. Like this case, *Tronzo* concerned a mechanical medical device — specifically, an artificial hip socket that included cup implants adapted for insertion into an acetabular bone. *Tronzo*, 156 F.3d at 1156. The application that issued as the patent in

suit (the '262 patent) was filed as a continuation-in-part. *Id.* at 1157. After a jury trial, the district court determined that the asserted claims of the '262 patent were infringed and were not invalid. *Id.* at 1155. The Federal Circuit reversed the judgment of no invalidity for two of the asserted claims “[b]ecause claims 1 and 9 are not entitled to the filing date of the '262 patent’s parent application and are anticipated by intervening prior art.” *Id.*

In particular, the Federal Circuit held that the specification of the parent patent failed to provide written description support for claims 1 and 9 of the '262 patent because those claims were generic as to the shape of the cup. *Id.* at 1158–60. The Federal Circuit noted that parent patent described the invention as a trapezoid, a truncated cone, or a cup of conical shape, which labels applied to the same cup. *Id.* at 1159. The court further explained:

[T]he *only reference in the [parent] patent’s specification to different shapes is a recitation of the prior art*. . . . Instead of suggesting that the [parent] patent encompasses additional shapes, the specification specifically *distinguishes the prior art as inferior and touts the advantages of the conical shape* of the [parent patent’s] cup. . . . Such statements make clear that the [parent] patent discloses only conical shaped cups and nothing broader. The disclosure in the [parent patent’s] specification, therefore, does not support the later-claimed, generic subject matter in claims 1 and 9 of the '262 patent.

Id. (emphases added).

Similar to the disclosure of the parent patent in *Tronzo*, the '707 application discusses flexible suture loops only in its Background in order to distinguish that technique as inferior and to tout the advantages of the rigid eyelet, which allows the captured suture to freely slide within the aperture. Ex. 1005 ¶¶ 5–7. Thus, *Tronzo* supports Petitioners’ argument that the '707

application's criticism of the flexible loop species and the invention's ability to overcome the deficiencies of the flexible loop signify a lack of written description support in the '707 application for the generic "first member" limitation in the challenged claims of the '907 patent.

Anascape provides further support for Petitioners' contention that "a specification that criticizes a prior art configuration in the Background and never otherwise discusses it does not support generic claims encompassing the very same configuration that the Background criticizes as undesirable." Pet. 31. *Anascape* was another case in which the Federal Circuit reversed a district court's judgment, after a jury trial, of infringement and no invalidity because the Federal Circuit determined that the asserted patent was not entitled to the priority date it claimed, such that intervening prior art anticipated the claims. *Anascape*, 601 F.3d at 1334–35, 1341.

Anascape concerned hand-operated controllers for use in video games, allowing an operator to move images on the screen in six general directions called degrees of freedom or DOF: "linear movement along three axes (forward/backward, left/right, or up/down), and rotational movement about the three linear axes (roll, pitch, or yaw)." *Id.* at 1334. The asserted patent, the '700 patent, was filed as a continuation-in-part of an application that issued as the '525 patent. *Id.* The '700 patent claimed controllers having multiple input members that together operate in six degrees of freedom, but the specification of the '525 patent described only a single input member that operates in six degrees of freedom. *Id.* at 1335.

In determining that the '525 patent's specification did not provide written description support for the claims of the '700 patent, the Federal Circuit noted that "[t]he '525 specification does not describe a controller

with input members limited to fewer than six degrees of freedom.” *Id.* at 1336. Moreover, “[t]he ’525 patent stresses the advantages of using a single input member operable in six degrees of freedom, and describes the use of multiple input members as having ‘significant disadvantages.’” *Id.* at 1337. In these respects, the deficiencies of the ’707 application as a priority document supporting claims to a generic “first member” are similar to those of the ’525 specification in *Anascape*: the ’707 application does not describe the flexible loop species other than in the Background to describe its disadvantages in impeding free sliding, and the ’707 application stresses as a benefit of the invention that it overcomes that deficiency and permits free sliding within the aperture. Ex. 1005 ¶¶ 5–7, 29, 33.

Another parallel to the facts of this case resides in changes the patentee in *Anascape* made when filing the ’700 patent specification. The patentee changed references in the ’525 specification to a “single input member” to instead reference “at least one output member” in the ’700 patent specification. *Anascape*, 601 F.3d at 1338. “The ’700 specification also deleted all mention of the prior art Chang controller [i.e., the controller the ’525 patent described as having significant disadvantages due to its use of multiple input members] and its deficiencies.” *Id.* Noting that “[a] description can be broadened by removing limitations,” the Federal Circuit found the changes made to the ’700 specification to be “classical new matter.” *Id.*

Similarly, returning to the present case, in the ’601 application that issued as the ’907 patent, Patent Owner made several changes relative to the ’707 application (and the other intervening applications in the priority chain). *See generally* Ex. 1009 (presenting a redline version of the ’601

application reflecting changes relative to the '218 application, which is the immediately preceding application in the priority chain). These changes were extensive, resulting in a 48-page specification with 81 paragraphs and 35 figures—significantly longer than the preceding applications in the priority chain, such as the '707 application, which included 34 paragraphs of description and 10 figures. *Compare* Ex. 1002, 11–58, *with* Ex. 1005. One change Patent Owner made in the '601 application was deletion of the criticism of the suture loop species in the Background section, as well as deletion of the statement in the Summary section that the invention overcomes those disadvantages and provides a fixed aperture through which suture is able to freely slide. *Compare* Ex. 1002, 11–12, *with* Ex. 1005 ¶¶ 4–7. Another change was the addition of figures and description of the suture loop species in the Detailed Description section. *See* Ex. 1002, 18–19, 40–45.

Similar to the changes made in the '700 patent in *Anascope*, Patent Owner's changes in the '601 application signal an effort to broaden the disclosure to support a generic “first member” encompassing a flexible loop, in contrast to earlier applications in the priority chain such as the '707 application, which had criticized the flexible loop as a problematic technique that the invention sought to overcome. Consistent with that view, we note that in his testimony in the parallel district court proceeding, Dr. ElAttrache agreed that the '907 patent application was the first application to include both the suture loop and the rigid eyelet. Ex. 1035, 381:6–15.

Petitioners' briefing cites additional decisions from the Federal Circuit and other courts and tribunals to buttress its contention that the claimed priority documents do not provide written description support for a generic

“first member,” but in our view, the pertinent facts of this case align most closely with *Tronzo* and *Anascape*.⁹

We have considered Patent Owner’s arguments as to why the ’707 application provides written description support for a generic “first member” that encompasses a flexible loop, but those arguments are not persuasive for the reasons that follow. Patent Owner argues that the ’707 application incorporates the disclosure of the ’280 application by reference, and “[b]y virtue of that incorporation by reference, the ’707 application discloses the very same suture loop eyelet species disclosed in the ’280 application.” PO Resp. 17–18 (citing Ex. 1005, 2; Ex. 2037 ¶¶ 155–156). Patent Owner points out that the ’868, ’893, and ’218 applications also include the same incorporation by reference of the ’280 application as the ’707 application. *See id.* at 21–22 (citing Ex. 1006, 3; Ex. 1007; Ex. 1008; Ex. 2037 ¶¶ 181–183, 189–192). According to Patent Owner, “[g]iven that every application in the priority chain discloses the same suture loop eyelet species and that species conveys possession of a first member including an eyelet to a POSA, every application satisfies the general rule in *Bilstad* that disclosing a single species provides written description support for a genus including a species.” PO Resp. 23.

Patent Owner’s mechanistic application of a “general rule” from *Bilstad* does not accord with the Federal Circuit’s repeated emphasis that “written description questions are intensely factual, and should be dealt with on a case-by-case basis, without the application of wooden rules.” *Paice LLC v. Ford Motor Co.*, 881 F.3d 894, 910 (Fed. Cir. 2018) (quoting *Union*

⁹ Patent Owner’s arguments seeking to distinguish *Tronzo* and *Anascape* are discussed below.

Oil Co. of Cal. v. Atl. Richfield Co., 208 F.3d 989, 1000 (Fed. Cir. 2000)); see also *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (“[W]e do not try here to predict and adjudicate all the factual scenarios to which the written description requirement could be applied. Nor do we set out any bright-line rules governing, for example, the number of species that must be disclosed to describe a genus claim, as this number necessarily changes with each invention, and it changes with progress in a field.”). The Federal Circuit has explained that “while we did state in *Bilstad* that the mechanical field was ‘fairly predictable,’ we did not hold that all inventions that may be characterized as ‘mechanical’ allow claiming a genus based on disclosure of a single species.” *Synthes USA, LLC v. Spinal Kinetics, Inc.*, 734 F.3d 1332, 1345 (Fed. Cir. 2013). As Petitioners point out, in several cases addressing mechanical technology, the Federal Circuit has held that disclosure of one species did not support a broader genus. Reply 2–3 (citing *Synthes*, 734 F.3d at 1335–36; *Tronzo*, 156 F.3d at 1156; *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1478–1479 (Fed. Cir. 1998)).

Moreover, Patent Owner’s argument looks at the incorporation by reference statement in isolation without taking account of the ’707 application’s disclosure as a whole. Considered in its entirety, the ’707 application’s disclosure undermines Patent Owner’s argument that the incorporation by reference establishes written description support for the flexible loop species or a generic “first member.” The incorporation by reference of the ’280 application’s disclosure appears in the Background section of the ’707 application. Ex. 1005 ¶ 4. The ’707 application discusses the flexible loop of the ’280 application only in the Background

section, and only in order to introduce the disadvantage of that structure that the invention overcomes. *Id.* ¶¶ 4–7.

In this context, the incorporation by reference of the '280 application does not demonstrate to a skilled artisan reviewing the entire disclosure of the '707 application that the application embraced a generic “first member” that could be either a suture loop or a rigid implant. *See* Ex. 1019 ¶¶ 123–124; *see also Tronzo*, 156 F.3d at 1159 (explaining that a reference in the parent patent to cup shapes other than conical did not support later claims to a generic cup shape because that reference “served the narrow purpose of reviewing the prior art and did not describe the invention”); *Anascape*, 601 F.3d at 1336–37 (rejecting argument that parent specification supported input members with fewer than six degrees of freedom because the cited sentence “is not a description of the '525 invention; it is a description of prior art joysticks”). Indeed, as Petitioners point out in Reply, Dr. ElAttrache, a named inventor of the '907 patent and each of the applications in the priority chain, testified in the parallel district court proceeding that the '707 application disclosed only a rigid eyelet and not a suture loop. *See* Reply 18–19; Ex. 1035, 379:24–380:4.¹⁰

Patent Owner argues that Petitioners “overstate the effect of the background discussion” in the '707 application and that “the alleged disparaging statements at best amount to a difference of degree between embodiments rather than of kind.” PO Resp. 50; *see also id.* at 56–57. In this regard, Patent Owner’s expert, Dr. Higgs, testifies that a person of

¹⁰ Patent Owner’s motion to exclude Exhibit 1035 is addressed in Section VI.

ordinary skill would not understand the '707 application to indicate that the inventors had moved beyond the flexible eyelet:

The point a person of skill would take away from those statements is that the inventors had improved on their invention with the additional embodiments disclosed for the first time in the '707 Application because those embodiments did not impede sliding *as much* as their previously preferred embodiment. The *difference in degree* of slideability of suture between eyelet embodiments in the same disclosure would certainly not cause a person of ordinary skill in the art to conclude the inventors “walked away” from the suture loop eyelet because this embodiment still works to achieve knotless fixation, the primary object of the invention.

Ex. 2037 ¶ 175 (emphasis added). This argument and testimony do not square with the disclosure of the '707 application itself. *See Anascape*, 601 F.3d at 1339 (dismissing expert testimony because it “cannot override the objective content of these [priority] documents”). The '707 application does not present the suture loop and the rigid implant as alternative embodiments with different degrees of slideability. Rather, in the '707 application, the background suture loop technique is said to impede sliding and the invention overcomes that deficiency by allowing free sliding. Ex. 1005 ¶¶ 5–7.

Relatedly, Patent Owner argues that “[i]f the inventors were leaving the flexible eyelet species behind . . . and moving on to ‘only’ the rigid eyelet species, there would have been no reason to rely on the '280 application for priority” or to incorporate it by reference. PO Resp. 58–59 (citing Ex. 2037 ¶¶ 155, 160, 178, 273). Petitioners respond that the priority claim to, and incorporation of, the '280 application in the '707 application may have been an effort to hold open the possibility of claims focusing on other aspects of the '280 application, such as the second member. Tr. 9:23–10:20. In our view, the potential reasons why an application contains a

priority claim or includes an incorporation by reference rather than simply citing an earlier application are technical matters of patent drafting and prosecution strategy. These questions may affect how a patent attorney interprets the '707 application's disclosure, but a person of ordinary skill in the art reading the '707 application is less likely to be influenced by those legalistic curiosities. *See Ariad*, 598 F.3d at 1351 (“[T]he test [for written description] requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed.”). To the extent that the '707 application's priority claim and incorporation by reference send a subtle signal of continuing allegiance to some aspect of the disclosure in the '280 application, the '707 application speaks with a much louder voice when it describes the suture loop as a problematic background technique that the invention seeks to remedy.

Patent Owner further argues that the '707 application does not disrupt the priority chain with respect to the suture loop species because “[m]ere recognition in the specification that an aspect of a prior art system is ‘inconvenient’ does not constitute ‘disparagement’ sufficient to limit the described invention. . . .” PO Resp. 45 (quoting *ScriptPro*, 833 F.3d at 1341). Patent Owner points out that “a specification's focus on one particular embodiment or purpose cannot limit the described invention where that specification expressly contemplates other embodiments or purposes.” *Id.* at 49 (quoting *ScriptPro*, 833 F.3d at 1341). Patent Owner's reliance on *ScriptPro* is inapposite because a significant factor there was that

“the same specification expressly contemplates that some embodiments of the described invention incorporate the ‘inconvenient’ aspect.” *ScriptPro*, 833 F.3d at 1341. That is not the case here. The ’707 application repeatedly emphasizes the need for captured suture to be able to freely slide within the aperture and indicates that free sliding was something that the flexible suture loop did not provide. Ex. 1005 ¶¶ 5–7, 29, 33. Patent Owner does not point to, and we do not find, any disclosure in the ’707 application contemplating that some embodiments of the invention of the ’707 application do not allow the captured suture to freely slide within the aperture.

Similarly, Patent Owner relies on *Spine Solutions, Inc. v. Medtronic Sofamor Danek USA, Inc.*, 620 F.3d 1305, 1315 (Fed. Cir. 2010), *abrogated on other grounds by Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 136 S.Ct. 1923, 1930, 1934 (2016), for the proposition that where a specification notes it is “particularly difficult” to achieve something with the prior art, such a statement “does not rise to the level of an express disclaimer sufficient to limit the scope of the claims.” PO Resp. 46 (quoting *Spine Solutions*, 620 F.3d at 1315). But beyond simply noting a disadvantage of a prior art approach, as in *Spine Solutions*, the ’707 application goes on to state in the Summary of the Invention that “the present invention overcome[s] the disadvantages of the prior art” by permitting free sliding. Ex. 1005 ¶ 7. The Detailed Description also specifically provides that “the present invention” can include other configurations than the embodiments specifically discussed “as long as” it provides for the ability of captured suture to freely slide within the aperture. *Id.* ¶ 33. These factual distinctions make *Spine Solutions* less relevant to the analysis here than the *Tronzo* and *Anascope* cases discussed above.

Patent Owner also argues that the statements in the Background section of the '707 application relating to the inventors' own previous work—the flexible loop of the '280 application—are not a disparagement of a prior art approach because the '707 application's priority claim means that “the flexible loop of the '280 application cannot be prior art to the '707 application.” PO Resp. 47–48; *see also id.* at 33–34 (arguing that “the commentary on the '280 application in the '707 application is not a discussion of *prior art*, but, instead, is merely commentary on the inventors' own earlier work”). Yet as Petitioners point out in their Reply, the '707 application itself describes the flexible suture loop of the '280 application as “prior art” having “disadvantages” overcome by the invention of the '707 application. Ex. 1005 ¶¶ 5–7; Ex. 1019 ¶ 124; Reply 20. In any event, Patent Owner's argument appears to be circular or question-begging, since it assumes that the '707 application provides continuity of written description support for the flexible loop species through its priority claim to the '280 application, which is the very question at issue. The '280 application published on January 31, 2002, more than twelve months before the April 3, 2003 filing date of the '707 application. Ex. 1010, at [43]; Ex. 1001, 1:12. Thus, despite the common inventorship of the '280 and '707 applications, the published version of the '280 application would constitute pre-AIA § 102(b) prior art for subject matter in the '707 application that is not entitled to priority.

In another argument for why the '707 application conveys possession of the flexible loop species or a generic first member encompassing that species, Patent Owner focuses on the original claims of the '707 application. *See* PO Resp. 51, 58. Claim 1 as filed in the '707 application recites a driver

having a shaft, a preloaded interference device, and “an aperture provided at the distal end of the driver.” Ex. 1005, claim 1. The other independent claims as originally filed include the same or similar quoted phrase. *Id.* at claim 12 (“capturing the suture attached to the graft with an aperture provided at a distal end of the driver”), claim 25 (“feeding a suture attached to the soft tissue graft through an aperture of the implant”).

Patent Owner argues that “the originally filed claims of the ‘707 application, which generically recite an aperture at a distal end of the driver, encompass flexible eyelets even if they do inconveniently inhibit sliding or approximation of suture in some circumstances.” *Id.* at 51 (citing Ex. 2037 ¶¶ 238, 243–245). Patent Owner argues that “[t]here is no dispute that such an aperture includes the flexible eyelet embodiment of the ‘280 application as well as the rigid eyelet embodiment introduced in the ‘707 application.” *Id.* at 58 (citing Ex. 1019, ¶ 112; Ex. 2037 ¶¶ 159–162).

Petitioners disagree that this issue is undisputed. Reply 22 n.14; Pet. 34–35. Petitioners argue that the aperture recited in the original claims of the ‘707 application does not encompass the flexible suture loop given the statements in the specification that the invention allows suture to freely slide and that the suture loop disadvantageously impedes sliding. *Id.* at 22–23 (citing Ex. 1005 ¶¶ 5, 7, 33). Petitioners cite several cases in which seemingly broad claim language was narrowed by the specification’s characterizations of “the present invention” or its descriptions of prior art problems overcome by the invention because “the public ‘is entitled to take a patentee at his word.’ Here, the word for ten years (2003–2013) was that the invention required free sliding of suture, which a flexible loop did not permit.” Reply 23–24 (quoting *Honeywell v. ITT*, 452 F.3d 1312, 1318

(Fed. Cir. 2006)); *see also id.* at 22–23 (citing *Edwards Lifesciences v. Cook*, 582 F.3d 1322, 1330 (Fed. Cir. 2009); *In re East*, 495 F.2d 1361, 1366 (CCPA 1974)); Pet. 34–35 (citing *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1343–44 (Fed. Cir. 2005); *O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1581 (Fed. Cir. 1997)).

After considering the parties’ arguments and evidence on this point, we are not persuaded that the claim phrase “an aperture at the distal end of the driver” would indicate to a skilled artisan reviewing the entirety of the ’707 application possession of the flexible suture loop described in the ’280 application. As Petitioners correctly point out, the specification is unambiguous in describing the disadvantages of the suture loop in impeding sliding and stating that the invention allows free sliding. Ex. 1005 ¶¶ 5, 7, 33. The Detailed Description of the ’707 application describes two embodiments for capturing suture: a rigid eyelet and a horseshoe-shaped implant. *See* Ex. 1005 ¶¶ 24, 30, Fig. 1, Fig. 9. These two embodiments are separately claimed as different types of apertures in dependent claims. *See id.* at claims 5, 6, 16, 18, 27, 28. When the ’707 application teaches that configurations other than the rigid eyelet of Figure 1 or the horseshoe-shaped implant of Figure 9 can be used, it states that “the present invention also contemplates implants . . . having an aperture of any configuration or geometrical shape, *as long as it* captures suture and *allows the captured suture to freely slide* within the aperture.” *Id.* ¶ 33 (emphasis added). Considering the specification and original claims as a whole, the breadth of the claim phrase “an aperture” does not convey possession of the disadvantageous flexible loop that does not allow free sliding, but instead reflects that the phrase could include an aperture in the shape of a horseshoe,

an eyelet, or some other shape or configuration that allows captured suture to freely slide.

Furthermore, even if we were to agree with Patent Owner that written description support for a generic “first member” exists in the ’707 application by virtue of the broad “aperture” term in the original claims, a separate problem arises for Patent Owner in the original claims of the ’893 application. As Petitioners note, the original claims of the ’893 application expressly require an aperture that allows suture to “slide freely.” *See* Reply 24. Specifically, claims 1 and 9, the only two independent claims originally filed in the ’893 application, recite that “the suture can freely slide through the aperture of the implant.” Ex. 1007, claims 1, 9. Just like the ’707 application, the Background section of the ’893 application states that the flexible loop configuration of the ’280 application “disadvantageously impedes sliding of the suture or graft which is fed through the suture loop.” *Id.* ¶ 5. Since written description support for a generic “first member” must be present in each application in the priority chain, the absence of written description support in the ’893 application is sufficient by itself to prevent Patent Owner from antedating the ElAttrache and Martinek references. *See Lockwood*, 107 F.3d at 1571–72.¹¹

¹¹ When asked about this issue at the hearing, Patent Owner explained that the ’893 application does not break the priority chain because it includes the priority claim back to the ’280 application and it incorporates the ’280 application by reference. *See* Tr. 48:7–49:13. Patent Owner’s arguments regarding the priority claim and incorporation by reference have already been discussed. To the extent Patent Owner is relying on the language of the original claims of the ’707 application to establish written description support, the ’893 application presents a separate impediment.

Turning to Patent Owner's comments regarding the cases on which Petitioners rely, Patent Owner seeks to distinguish *Tronzo* on the ground that the specification in *Tronzo* described the shape of the cup as an "extremely important aspect of the present device." PO Resp. 54–55 (quoting *Tronzo*, 156 F.3d at 1159). Patent Owner argues that "[t]here is no such statement in Patent Owner's specification(s)" (*id.* at 55), but Patent Owner does not address the '707 application's repeated emphasis that the invention permits captured suture to freely slide within the aperture. *See* Ex. 1005 ¶¶ 6, 7, 29, 33. Patent Owner also argues that unlike *Tronzo*, where only one embodiment with a critical feature was disclosed, "the '707 application contains both eyelet embodiments because of the incorporation of the '280 application by reference. With both eyelets disclosed and originally filed claims that encompass both generically, the '707 application is not limited to just a rigid eyelet." PO Resp. 56 (citing Ex. 2037 ¶¶ 155–174). Patent Owner's reliance on the '707 application's incorporation by reference statement and its original claims is unpersuasive for the reasons discussed above.

As for *Anascape*, Patent Owner argues that a "key factor in the court's decision in that case was that ***all original claims*** of the earlier application ***required*** a 'single input member' and the claims of the CIP broadened beyond that so that more than one input member could provide the six degrees of freedom." PO Resp. 32 (citing *Anascape*, 601 F.3d at 1335). Patent Owner is correct that the Federal Circuit noted that the original claims of the parent application recited a single input member, but it does not appear to have been a key factor in the court's decision. After pointing out this fact in a single sentence, the court spent the next two pages detailing the

many passages in the parent patent's specification indicating that the invention was directed to a single input member. *Anascape*, 601 F.3d at 1335–37. Those passages included the specification's teaching that a primary object of the invention was to provide a 6DOF controller including a single input member, the absence of any description in the specification of controllers with input members limited to fewer than six degrees of freedom, and description of the prior art's use of multiple input members as having “significant disadvantages.” *Id.* at 1336–37.

In these respects, the deficiencies of the parent specification in *Anascape* parallel the '707 application's criticism of the suture loop and its emphasis on the invention's ability to allow suture to freely slide. *See* Ex. 1005 ¶¶ 5–7, 29, 33. Moreover, to the extent that Patent Owner is correct that the original claims of the '707 application present a distinction with the operative facts of *Anascape*, that distinction is absent in the '893 application. As discussed above, the original claims of the '893 application expressly require an aperture that allows suture to slide freely, which feature is absent in the suture loop according to the '893 application's description. Ex. 1007 ¶ 5, claims 1, 9.

Patent Owner also notes that the patentee in *Anascape* made numerous changes in the child specification relative to the parent specification to broaden “single input member” to “at least one input member.” PO Resp. 33. According to Patent Owner, “there was no such change in the '907 Patent compared to its parent applications” because the suture loop description from the '280 application that was incorporated by reference in the '707 application “remained that way in the '907 Patent” and the rigid implant description in the '707 application was unchanged. *Id.*

This argument overlooks several significant changes in the '601 application that became the '907 patent at issue in this case. As discussed above, compared to the '707 application, the '601 application deleted criticism of the suture loop species in the Background section, and deleted the statement in the Summary section that the invention overcomes those disadvantages and provides a fixed aperture through which suture is able to freely slide. Compare Ex. 1002, 11–12, with Ex. 1005 ¶¶ 4–7. The '601 application also added figures and description of the suture loop species in the Detailed Description section. See Ex. 1002, 18–19, 40–45. Even if Patent Owner is correct that this content is the same as what was in the '280 application, that material was previously incorporated in the Background section of the '707 application describing the problematic technique that impeded sliding. Ex. 1005 ¶¶ 4–5. Its appearance in the Detailed Description of the '601 application, in conjunction with the other changes in the '601 application, signals that the suture loop is an alternative embodiment rather than a problematic prior art technique that the invention improves upon. Indeed, Dr. ElAttrache agreed, in his testimony in the parallel district court proceeding, that the '601 application was the first application to include both the suture loop and the rigid eyelet. Ex. 1035, 381:6–15. Accordingly, we disagree with Patent Owner's argument that "[n]o *Anascape*-like modification was made to the specification of the '601 application for the '907 Patent." PO Resp. 33.¹²

¹² Patent Owner also argues that the parent application in *Anascape* distinguished the single input member from prior art, whereas the '707 application's discussion of the '280 application "is merely commentary on the inventors' own earlier work," not a discussion of prior art. PO Resp. 33–34. Patent Owner's argument that common inventorship prevents the '280

F. Conclusion Regarding Priority

For the reasons discussed above, we find that '707 application does not provide written description support for a generic “first member” that encompasses a flexible loop. The absence of written description support in the '707 application for the “first member” limitation in each of the independent claims of the '907 patent means that Patent Owner cannot establish entitlement to a priority date antedating the cited references. *Lockwood*, 107 F.3d at 1571.

Further, the '868, '893, and '218 applications lack written description support for a generic “first member” for the same reasons. The passages from the '707 application indicating that the suture loop impedes free sliding and that the invention overcomes that deficiency and allows captured suture to freely slide are present in each of the '868, '893, and '218 applications. Ex. 1006 ¶¶ 5–7, 32, 41; Ex. 1007 ¶¶ 5–7, 32, 41; Ex. 1008 ¶¶ 5–7, 32, 41. Thus, we determine that the challenged claims are not entitled to priority to any earlier application.

Accordingly, under 35 U.S.C. § 100(i)(1)(A), the effective filing date of the challenged claims is May 8, 2014, the actual filing date of the '601 application.

VI. PATENT OWNER'S MOTION TO EXCLUDE

Patent Owner moved to exclude Exhibit 1035 on the grounds that it is irrelevant under Rules 401–403 of the Federal Rules of Evidence. *See* Paper 25, 3–6.¹³ Exhibit 1035 is an excerpt of the testimony of Dr. Neal

application from being prior art to the '707 application is unpersuasive for the reasons discussed above.

¹³ Patent Owner's motion also included an argument that Exhibit 1035 constitutes inadmissible hearsay, but Patent Owner withdrew its hearsay

ElAttrache, one of the named inventors of the '907 patent, from the trial in the parallel district court case in the U.S. District Court for the Eastern District of Texas. *Id.* at 1. Petitioners opposed the motion, and Patent Owner filed a reply in support of its motion. Paper 27; Paper 29.

The test for relevance is whether the evidence “has any tendency to make a fact more or less probable than it would be without the evidence” and “the fact is of consequence in determining the action.” Fed. R. Evid. 401. Here, Dr. ElAttrache’s sworn testimony, in pertinent part, tends to show that the '707 application describes rigid eyelets as the invention and does not describe flexible suture loop eyelets, and that the '601 application that issued as the '907 patent was the first application to include both the suture loop and the rigid eyelet. Ex. 1035, 379:24–380:5, 381:6–15. These facts are of consequence to the priority analysis for the reasons discussed above in Section V.E.

Patent Owner argues that the cited testimony was part of a cross-examination focusing on certain figures, and that Dr. ElAttrache may have been responding based on those figures rather than his review of the entire application. Paper 25, 4–5; Paper 29, 2. This argument goes to the weight to be given Dr. ElAttrache’s testimony, not its admissibility. Patent Owner also argues that the written description analysis focuses on the content of the patent applications themselves, not the inventor’s recollection of them. Paper 25, 6; Paper 29, 2–3. Patent Owner is correct that the written description inquiry turns on what the four corners of a specification convey to a hypothetical person of ordinary skill. *See Ariad*, 598 F.3d at 1351. Dr.

objection in light of Petitioners’ arguments in opposition. *See* Paper 25, 1–3; Paper 29, 1.

ElAttrache's testimony is probative on that issue for at least the reason that his testimony sheds light on what a person of ordinary skill in the art would have understood. *See* Ex. 1035, 316:22–317:6 (testifying that he has been practicing as an orthopedic surgeon since completion of his fellowship in sports medicine in 1990).

As Petitioners point out, Dr. ElAttrache's trial testimony in Exhibit 1035 runs counter to some of the positions Patent Owner has staked out in this proceeding. Paper 27, 11–12. In *Ultratec, Inc. v. CaptionCall, LLC*, 872 F.3d 1267, 1275 (Fed. Cir. 2017), the Federal Circuit held that the Board abused its discretion when it refused to admit the testimony of a witness from a parallel district court proceeding that was allegedly inconsistent with testimony the same witness provided in the Board proceeding. Unlike the witness in *Ultratec*, Dr. ElAttrache did not testify in this proceeding, but he is nevertheless closely associated with Patent Owner through his status as an inventor of the '907 patent, his continuing work for Patent Owner, and the \$38 million in compensation he has received from Patent Owner over their 20 year relationship. *See* Ex. 1035, 344:17–345:15, 348:23–349:5. We conclude that his testimony as a witness called by Patent Owner in the district court proceeding on the same topics that are being disputed here is relevant and admissible.

For the foregoing reasons, we deny Patent Owner's motion to exclude Exhibit 1035.

VII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1, 4, 8, 10–12, 16, 18, and 25–28 have been shown to be unpatentable;

IPR2017-00275
Patent 9,179,907 B2

FURTHER ORDERED that Patent Owner's Motion to Exclude Exhibit 1035 is denied; and

FURTHER ORDERED that parties to the proceeding seeking judicial review of this Final Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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