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Paper No. __

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SMITH & NEPHEW, INC. &
ARTHROCARE CORPORATION
Petitioners,

v.

ARTHREX, INC.,
Patent Owner.

Case No. TBD
Patent No. 9,179,907

PETITION FOR *INTER PARTES* REVIEW UNDER 35 U.S.C. §§ 311–19 and 37 C.F.R. § 42.1 *et seq.*

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Smith & Nephew, Inc. and ArthroCare Corporation ("Petitioners") request *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.

I. INTRODUCTION

The '907 patent concerns a "suture securing assembly" for use in orthopedic surgery to attach soft tissue to bone without having to tie knots. The assembly includes a "first member" with an eyelet, which captures suture connected to the tissue, and a "second member," which locks the suture in place.

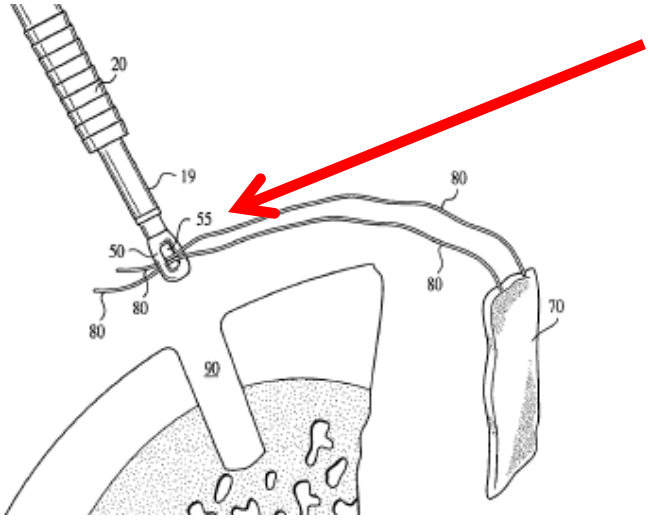
The application for the '907 patent was filed on May 8, 2014 and is styled as a "continuation" of a February 12, 2013 application that was part of a purported priority chain dating back to a provisional application filed in 2000.

In reality, however, the '907 patent differs significantly from the February 2013 application, as shown in a "redline" comparison (Ex. 1009). The new matter in the '907 patent is the only basis on which the specification even arguably supports its claims to an assembly with a generic "first member" with an eyelet.[1]

[1] Calling the '907 patent a "continuation" was inaccurate and lacks legal effect. *Anascape, Ltd. v. Nintendo of Am., Inc.*, 601 F.3d 1333, 1338 (Fed. Cir. 2010). The fact that Patent Owner unilaterally designated the '601 Application as a "continuation" of the '218 "does not determine its legal status." *Id.* at 1338 n.2.

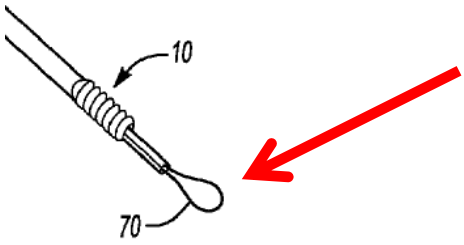
None of the earlier applications characterized the invention in terms of a first "member" of any sort—let alone a broad genus in which the first member can be ***either*** a "loop of suture defining the eyelet" (as in dependent claims 14 and 29) or "a rigid implant defining the eyelet" (as in dependent claims 15 and 30).

Instead, the February 2013 application and its ancestor applications dating back to April 2003 describe the invention as using a rigid implant with a "fixed aperture," which, according to the application, advantageously permits the suture "to freely slide through the aperture." *E.g.*, Ex. 1008 [0007].



"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." Ex. 1008 [0031].

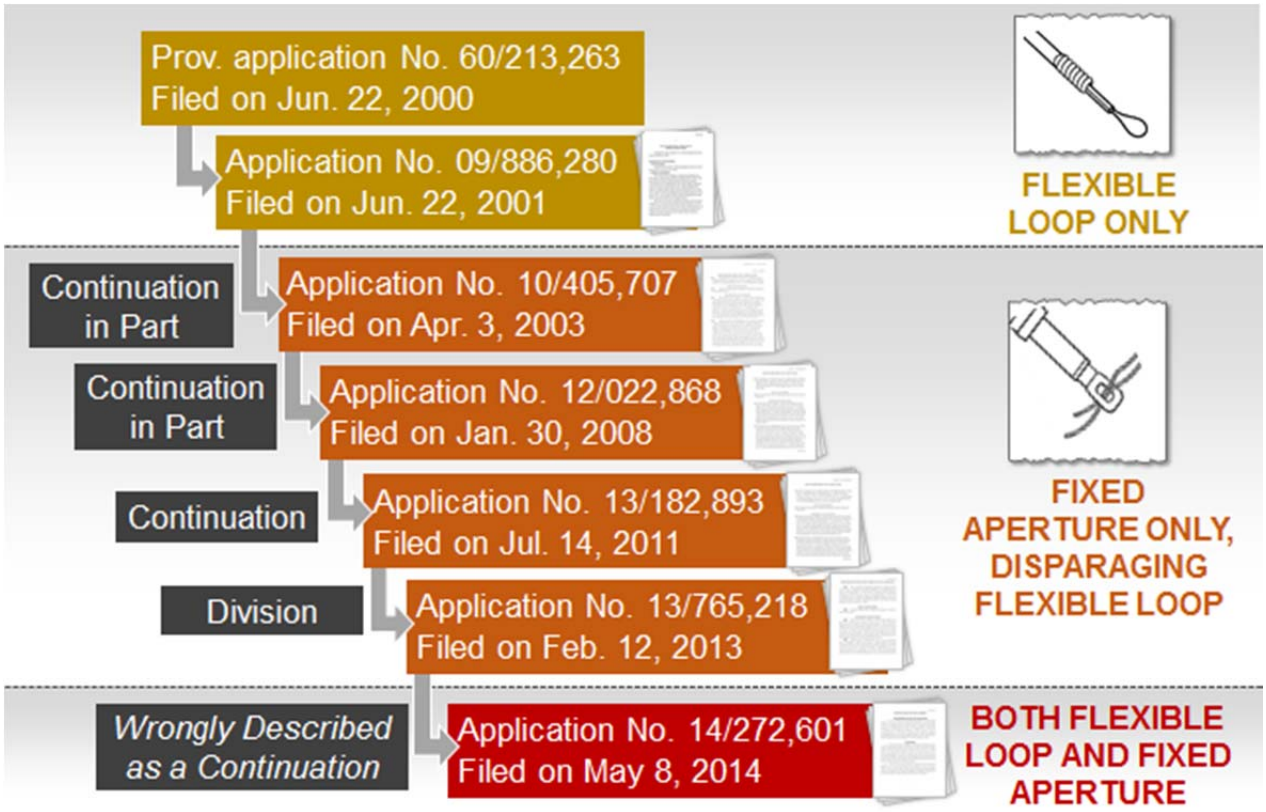
All of the applications filed between 2003 and 2013 criticize an earlier concept that relied on a "***flexible*** loop" to capture the suture:



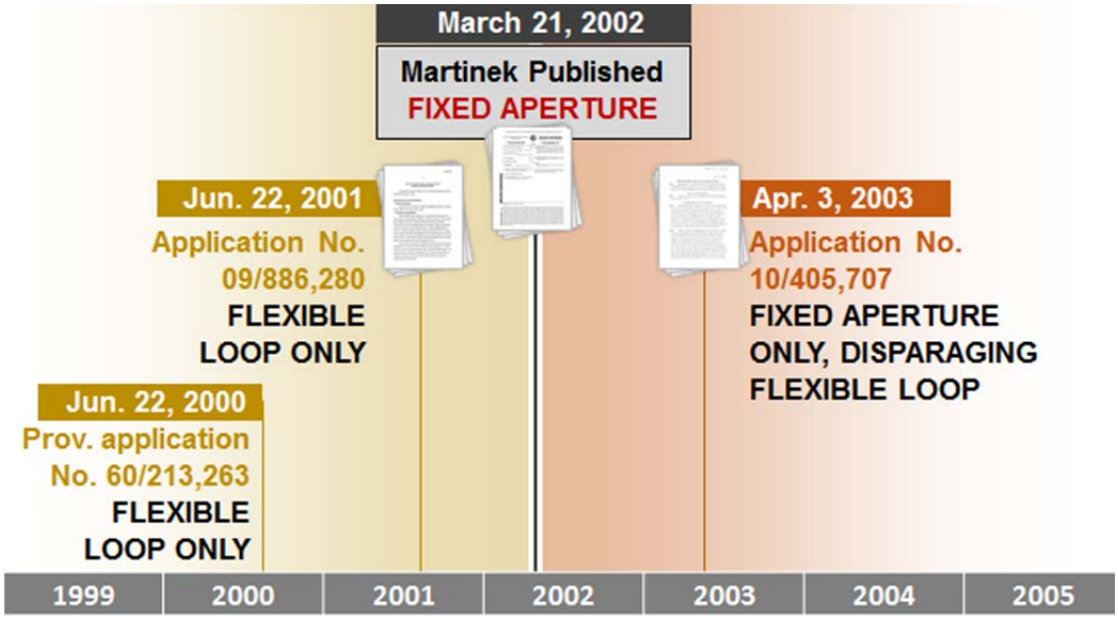
This flexible loop concept—disclosed in June 2000 and June 2001 applications—is presumptive §102(b) prior art to the April 2003 application and all subsequent applications given the 2001 application's publication in January 2002 (Ex. 1010, "ElAttrache").

All four applications filed between 2003 and 2013 explain that a "flexible loop configuration at the end of the driver ***disadvantageously impedes sliding of the suture or graft which is fed through the suture loop***."[2] Exs. 1005, 1006, 1007, 1008, [0005]. By contrast, the '907 patent (based on a 2014 application) ***deletes*** this criticism of flexible loops. It instead ***merges*** disclosures concerning flexible loops (per the 2000 and 2001 applications) with disclosures concerning fixed apertures (per the 2003-2013 applications, except without criticizing the flexible loop approach).

[2] Emphasis added unless otherwise noted.



Removing the criticism of flexible loops was an attempt, in the ’907 patent, to reach back to the 2000 and 2001 applications for priority to circumvent a prior art reference (Martinek) which expressly discloses a rigid implant that maps on the “first member,” and works with a second member, as claimed in the ’907 patent.



In litigation, however, Patent Owner concedes that claims 15 and 30 (which require that the "first member" be a "rigid implant defining the eyelet") are at most entitled to a priority date of April 3, 2003—the first priority document to disclose a rigid implant defining the eyelet. Ground 2 below explains how Martinek anticipates claims 15 and 30, as well as claims 1 and 16, from which they depend.

Patent Owner wrongly argues that independent claims 1 and 16, drafted as broader "genus" claims, are entitled to a priority date of June 22, 2000 despite covering both a flexible loop and a fixed aperture, the latter of which the 2000 application fails to disclose. This is an untenable position that leads to a legally impermissible result—dependent claims that are invalid over the prior art, but broader independent claims that remain in force. *Cf. Ormco Corp. v. Align Tech., Inc.*, 498 F.3d 1307, 1319 (Fed. Cir. 2007) ("Because claims 10 and 17 were found to have been obvious, the broader claims 1 and 11 ***must also have been obvious***.").

By Patent Owner's admission in the 2003-2013 applications, the "flexible loop" species (the only species disclosed in the 2000 and 2001 applications) performs in a very different way than "fixed aperture" species covered by the generic claims (including challenged claims 1, 4, 8, 10-12, 16, 18 and 25-28) in the '907 patent.[3] Thus, the generic '907 patent claims are not entitled to 2000 or 2001 priority. *E.g., Synthes USA, LLC v. Spinal Kinetics, Inc.*, 734 F.3d 1332, 1344 (Fed. Cir. 2013) (affirming that "disclosure of peripheral grooves does not adequately demonstrate possession of the entire genus of possible openings").

In fact, the generic "first member" claims of the '907 patent lack priority even to the 2003-2013 applications. Those applications disclose only the fixed aperture species and disparage the flexible loop species, negating written description support for the flexible loop.

[3] As detailed below, the criticism of flexible loops in the 2003-2013 applications was obviously intended to facilitate pursuit of claims to assemblies with rigid members despite the publication, more than a year earlier (in 2002), of the 2001 application disclosing the flexible loop species.

Indeed, the fact that Patent Owner deemed it necessary to rewrite key sections of the disclosure in 2014 (erasing criticism of the flexible loop and merging the earlier conflicting disclosures in a single application) confirms that none of the earlier applications support the '907 patent claims. "[A] claim … acquires an earlier filing date if, and only if, it could have been added to an earlier application ***without introducing new matter***." *Studiengesellschaft Kohle, M.B.H. v. Shell Oil*, 112 F.3d 1561, 1564 (Fed. Cir. 1997). Removing criticism of prior art, as in the '907 patent specification, is a "classical" example of adding "new matter." *Anascape*, 601 F.3d at 1338 (patent not entitled to priority of purported parent application because of subject matter that was removed from the specification to support claims broader than the species disclosed in the parent application).

As a result, ElAttrache (the 2002 publication of the 2001 application), which discloses the flexible loop species, is prior art to (and anticipates) the '907 patent claims to the "first member" genus. This is a textbook example of the "differences … between the requirements for claim-anticipating disclosures and for claim-supporting disclosures." *Chester v. Miller*, 906 F.2d 1574, 1577 (Fed. Cir. 1990).

II. MANDATORY NOTICES

A. Real Parties-In-Interest (37 C.F.R. § 42.8 (b)(1))

Smith & Nephew, Inc. and ArthroCare Corp. are the real parties-in-interest.

B. Related Matters (37 C.F.R. § 42.8 (b)(2))

A decision in this proceeding could affect or be affected by the following:

(1) Patent Owner is presently asserting[4] the '907 patent against Petitioners (E.D. Tex. Consolidated Civil Action Nos. 2:15-cv-01047 and 2:15-cv-01756).

(2) Other issued patents and pending applications in the same family as the '907 patent include: U.S. Patent Nos. 6,544,281, 7,329,272, 7,993,369, and 8,430,909, and Application Nos. 13/765,218, 14/935,778, and 14/970,953.

C. Counsel and Service Information (37 C.F.R. § 42.8(b)(3) and (4))

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Powers of attorney are submitted herewith. Counsel for Petitioners consents to service of all documents via electronic mail.

[4] Patent Owner first served Petitioner with a complaint alleging infringement of claims of the '907 patent on November 20, 2015. Ex. 1021.

III. NOTICE OF FEES PAID

Fees are submitted herewith. If more fees are due during this proceeding, the undersigned authorize the Office to charge Deposit Account No. 23/2825.

IV. CERTIFICATION OF GROUNDS FOR STANDING

Petitioners certify, pursuant to 37 C.F.R. § 42.104(a), that the '907 patent is available for *inter partes* review and that Petitioners are not barred or estopped.

V. IDENTIFICATION OF CHALLENGE AND RELIEF REQUESTED

A. Technology Background

Suture anchors are inserted into bone to provide an attachment point for suture. For example, suture anchors are often used when treating shoulder injuries such as a torn rotator cuff, in which a patient's rotator cuff tendon (soft tissue) has detached from bone. Using a suture anchor, surgeons can re-attach the soft tissue.

As discussed in the declaration of Petitioners' expert Dr. David McAllister, suture anchors have been commonplace in orthopedic surgery since the early 1990s. Certain types of suture anchors are designed for techniques in which surgeons tie knots to secure soft tissue to the bone. However, by the mid-1990s, numerous surgeons and companies were developing "knotless" anchors.

One such knotless suture anchor—the "Mitek Knotless"—was commercialized in 1999. Ex. 1015. Other manufacturers soon followed suit, and today there are many knotless anchors available. Patent Owner faced a crowded landscape even when drafting the original provisional application in 2000.

B. Overview of the Challenged Claims

Independent claims 1 and 16 are similar. Each is directed to a "suture securing assembly" that comprises:

(1) an insertion instrument (an "inserter" in claim 1 and a "driver" in claim 16);

(2) a "first member" that includes an eyelet; and

(3) a "second member" that can be moved by a portion of the inserter or driver toward the first member (or the eyelet itself in claim 1) "into a suture securing position where the second member locks suture in place."

Dependent claims 14 and 29 require that the first member be "a loop of suture defining the eyelet." Dependent claims 15 and 30 require that the first member be a "rigid implant defining the eyelet." The other claims cover assemblies in which the first member is either flexible or rigid.

The other dependent claims recite additional features that are not material for purposes of the priority analysis.

C. Prosecution History

The application for the '907 patent was filed in May 2014 and included thirty claims, including independent claims 1 and 16. Ex. 1002 at 26-30.

Independent claim 1 specified a "first member including an eyelet oriented to thread suture across the longitudinal axis [between the distal end and the proximal end of the inserter], the first member being situated near the distal end of the inserter, the first member being configured to be placed in bone."

Claim 14 depended from claim 1 and required that the "first member comprises a loop of suture."

Claim 15 also depended from claim 1 and required that the "first member comprises a rigid implant."

The other dependent claims associated with claim 1 did not specify the structure of the first member beyond the baseline requirements in claim 1.

Similarly, independent claim 16 specified a "first member supported by the driver, the first member comprising an eyelet including an opening that is transverse to the length, the opening being configured to allow suture to be threaded through the eyelet transverse to the length, the first member being situated to be moved in the insertion direction to be received in bone."

Dependent claims 29 and 30 followed the same pattern as claims 14 and 15. Claim 29 required that the "first member comprises a loop of suture," whereas claim 30 required that "the first member comprises a rigid implant."

The Examiner issued a restriction requirement because independent claims 1 and 16 were "generic" to two "patentably distinct species," namely Figures 15 and 22 of the application. Ex. 1002 at 208.

Figure 15 disclosed an eyelet formed by a piece of traction suture:

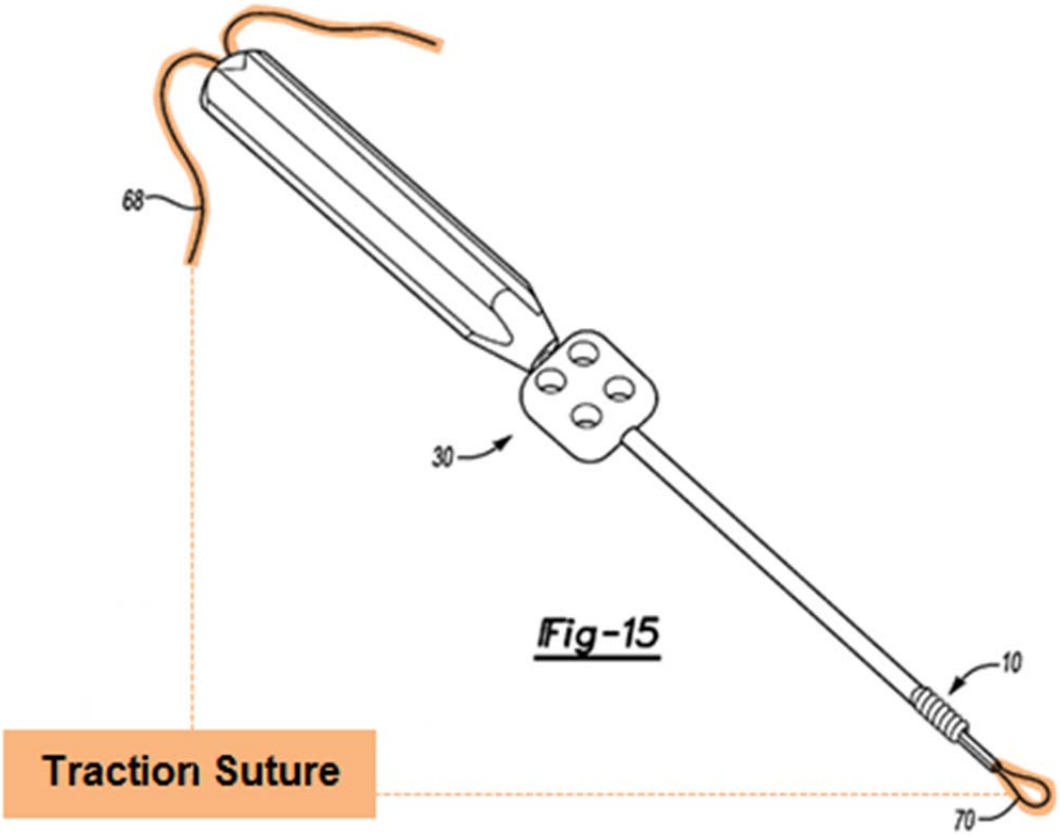
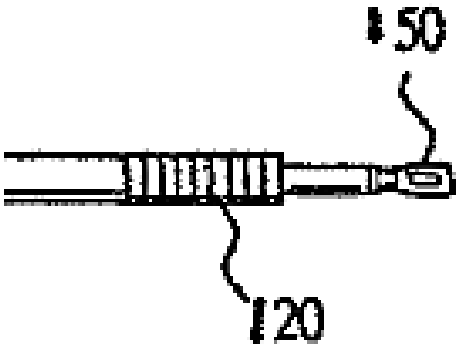


Fig-15

Id. at 40; *see also id*. at 18 ("Traction suture 68 is passed into the cannula of the driver, such that a looped end 70 is exposed at the distal end of the driver.").

By contrast, Figure 22 disclosed an eyelet implant made of a polymer material:



Id. at 48; *see also id*. at 20 ("The eyelet implant 150 is formed of a transparent polymer material...").

When issuing the restriction requirement, the Examiner explained that "the different species have mutually exclusive characteristics" and were "not obvious variants of each other based on the current record." Ex. 1002 at 208.

In response, Patent Owner cancelled claims 14, 15, 29, and 30 (Ex. 1002 at 211-17) and represented that the remaining claims were "generic to both of the species identified by the Examiner." *Id*. at 217. (As noted above, claims 14 and 29 required a "loop of suture" as the first member, whereas claims 15 and 30 required a "rigid implant.") ***Patent Owner did not dispute the Examiner's conclusion that these species have mutually exclusive characteristics and are not obvious variants.***

The Examiner then rejected claims 1-13 and 16-28 as anticipated by U.S. Patent No. 7,037,324 (Martinek). Patent Owner responded that Martinek was not prior art because the application claimed the benefit of the June 2000 provisional. Ex. 1002 at 271. However, Patent Owner did not explain this argument. Nor is there any indication that the Examiner agreed with Patent Owner's priority assertion (instead, the Examiner entered a new rejection based on a different reference, "Larsen"). "Silence is not a determination." *Smith & Nephew, Inc. v. Arthrex, Inc.*, IPR2016-00483, 2016 WL 5389062 (PTAB July 27, 2016) (instituting IPR based on priority challenge).

Following a series of unsuccessful attempts to distinguish the original claims (filed in 2014) over Larsen, Patent Owner amended the claims to require that the second member be movable "into a suture securing position where the second member ***locks*** suture ***in place***" rather than merely "trap[ping]" suture. Ex. 1002 at 494-499. Patent Owner also re-inserted the "rigid implant" and "loop of suture" species claims. *Id*. Following the addition of the "locks suture in place" requirement to all of the pending claims, the Examiner allowed the claims.

D. Patents and Printed Publications Relied Upon Herein

1. ElAttrache

ElAttrache (Ex. 1010) is a publication corresponding to Patent Owner's '280 Application (filed in 2001), discussed in Section VII.B.1. ElAttrache published on January 31, 2002 and constitutes pre-AIA §102(b) and post-AIA §102(a)(1)[5] prior art to claims 1-13 and 16-28 unless Patent Owner establishes that such claims are entitled to a 2000 or 2001 priority date. *Research Corp. Techs. v. Microsoft Corp.*, 627 F.3d 859, 870 (Fed. Cir. 2010).

2. Martinek

Martinek (Ex. 1011) is a PCT application published on March 21, 2002. Martinek constitutes pre-AIA §102(b) and post-AIA §102(a)(1)[6] prior art to claims 1, 15, 16 and 30 unless Patent Owner establishes that such claims are entitled to a 2000 or 2001 priority date.

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[5] Petitioner provides both pre-AIA and post-AIA citations for clarity. As detailed in Section VII.B.2, the challenged claims are not entitled to priority before the actual 2014 filing date. However, ElAttrache would anticipate even if the Board concluded that the challenged claims had an effective filing date in April 2003, such that pre-AIA law applied.

[6] As with ElAttrache, the analysis would be the same either way.

The content of Martinek is virtually identical to the content of the Martinek patent that the Examiner cited as anticipating claims 1-13 and 16-28 during prosecution. Patent Owner's only response was the erroneous assertion of entitlement to a June 2000 priority date.

E. The Person of Ordinary Skill in the Art (POSA)

A POSA related to the '907 patent would have (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. A POSA would also be able to understand and apply the prior art discussed herein. (McAllister ¶¶ 91-94).

F. Statutory Grounds for Challenge

Petitioners request cancellation of claims 1, 4, 8, 10-12, 15, 16, 18, 25-28, and 30 of the '907 patent based on the following grounds:

GROUND	REFERENCE(S)	CLAIMS	BASIS
1	ElAttrache	1, 4, 8, 10-12, 16, 18, and 25-28	Pre-AIA §102(b) Post-AIA §102(a)(1)
2	Martinek	1, 15, 16, and 30	Pre-AIA §102(b) Post-AIA §102(a)(1)

VI. CLAIM INTERPRETATION

In this proceeding, claim terms should be given their broadest reasonable interpretation ("BRI") in light of the specification (which may be different from the proper construction in district court). 37 C.F.R. § 42.100(b). However, "[o]nly those terms which are in controversy need to be construed, and only to the extent necessary to resolve the controversy." *Volkswagen Grp. of Am., Inc. v. Signal IP, Inc.*, IPR2015-01088, 2015 WL 6690118 (PTAB Oct. 29, 2015).

Little claim construction is needed here given that the proposed ground for most of the claims relies on a reference (ElAttrache) through which the '907 patent claims priority. The relevant terminology in ElAttrache is almost identical.

A. "driver"

Independent claim 16 requires a "driver," which the '907 patent describes as being used to insert an interference device either by impaction or screwing the device into place. In the case of impaction, the driver is "hit with [a] mallet" and transfers force to the device. Ex. 1001 at 6:24-34.

Thus, the BRI of "driver" is a "device for inserting through a transfer of force or motion." This interpretation is consistent with a POSA's understanding (McAllister ¶¶ 82-84) and the court's construction in co-pending litigation (Ex. 1014 at 85).

B. "a suture securing position where the second member locks suture in place"

Independent claims 1 and 16 require that the second member be moveable into a "suture securing position where the second member locks suture in place." In co-pending litigation, the court construed this phrase to mean "a securing position where the second member is capable of locking or jamming a suture by wedging the suture between the second member and bone." Ex. 1014 at 76. The court's construction tracks the specification's emphasis on the purported benefits of locking suture in this manner; the inventors tout "much stronger fixation" than was "achievable with prior at suture anchor procedures." Ex. 1001 at 10:3-5. No further construction is required, as both references on which Petitioner relies disclose locking suture in place between the second member and bone.

C. "a cap that is moveable relative to the handle and connected with the second shaft for moving the second shaft to cause the second member to move into the suture securing position"

Dependent claim 12 requires a "cap" that is "connected with the second shaft" of the driver and satisfies certain functional requirements, such as being "moveable relative to the handle." The specification does not describe any component that satisfies these functional requirements.[7]

[7] The specification refers to a "***protective*** cap" that is ***removed*** before final placement of the anchor. Ex. 1001 at 9:41-51 This is not consistent with claim 12.

Further, "cap" does not have an ordinary meaning to a POSA. McAllister ¶¶ 87-90. Accordingly, the BRI of the "cap" claim element is a device that is connected with the second shaft and satisfies the recited functional requirements.

VII. APPLICABLE PRIORITY DATE

Claims 1-13 and 16-28 are not entitled to priority based on any application filed before the '907 patent's own May 8, 2014 filing date because none of those earlier applications contain the subject matter as claimed. *E.g.*, *SAP Am. v. Arunachalam*, IPR2014-00414, 2015 WL 4941753, *13 (PTAB Aug. 17, 2015) (holding that purported "divisional" application was only entitled to the "actual filing date of the application that led to issuance").

Dependent claims 15 and 30 are not entitled to priority based on any application filed before April 3, 2003.[8] Patent Owner has conceded as much in the co-pending litigation.

[8] Petitioners do not concede that claims 15 and 30 are entitled to the April 2003 priority date, but it is not necessary to address that issue since both prior art references relied upon herein are prior art even under that date.

A. Claims 15 and 30: Patent Owner Concedes that the "Rigid Implant" Species Is Not Entitled to Priority Before April 2003

Patent Owner concedes that claims 15 and 30 are at most entitled to a priority date of April 3, 2003. Ex. 1018. The 2000 and 2001 applications fail to disclose an eyelet in the form of a rigid implant as in claims 15 and 30. *E.g.*, *In re Huston*, 308 F.3d 1267, 1276-77 (Fed. Cir. 2002) (disclosure of displaying help messages did not support claims to displaying advertising messages).

B. Claims 1-13 and 16-28: None of the Alleged Priority Documents Support a Generic "First Member" that Can Constitute Either a Flexible Loop or a Rigid Implant

Claims 1-13 and 16-28 cover a genus of assemblies having a "first member" including an eyelet, wherein the first member can be either a "loop of suture defining the eyelet" (as in dependent claims 14 and 29) or a "rigid implant defining the eyelet" (as in dependent claims 15 and 30).

Prior to 2014, Patent Owner had never disclosed that the inventors possessed a suture securing assembly featuring a "first member" that could be either a flexible loop or a rigid implant. On the contrary, Patent Owner's applications in 2000 and 2001 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. None of these six applications supports claims to a generic first member that could be either or flexible or rigid.

Instead, Patent Owner's representations in the applications filed between 2003 and 2013 confirm that the "fixed aperture" species disclosed therein does not "perform similarly" to the "flexible loop" species disclosed in 2000 and 2001. Thus, the '907 patent's genus claims are not entitled to an earlier priority date. *Synthes USA v. Spinal Kinetics*, 734 F.3d 1332, 1344 (Fed. Cir. 2013) ("If the difference between members of [a species] is such that [a] person skilled in the art would not readily discern that other [species] of the genus would perform similarly to the disclosed members, i.e., if the art is unpredictable, then disclosure of more species is necessary to adequately show possession of the entire genus.") (quoting *Bilstad v. Wakalopulos*, 386 F.3d 1116, 1124 (Fed. Cir. 2004)).

For the '907 patent claims to benefit from an earlier filing date, "***each application in the chain*** leading back to the earlier application must comply with the written description requirement of 35 U.S.C. § 112." *Lockwood v. Am. Airlines*, 107 F.3d 1565, 1572 (Fed. Cir. 1997).

Here, the '907 patent claims priority through six earlier applications. *See supra* p. 4 (timeline).

However, ***none*** of those earlier applications support claims to a genus of suture securing assemblies in which the first member including an eyelet" can be either (1) a flexible loop or (2) a rigid implant.

The applications filed in 2000 and 2001 disclosed only a "flexible loop" species. A POSA studying these disclosures would not have understood the inventors to have developed anything broader. Indeed, the European Patent Office rejected claims that relied on the 2001 disclosure, yet recited a generic "loop" without requiring it to be flexible. The EPO emphasized that "the flexibility and dimensions of suture are indispensable for the disclosed function of the loop so that it cannot be omitted" in favor of a "generic loop." Ex. 1017 at 137. Patent Owner conceded the point and limited the claim to a "suture loop." *Id*. at 145.

The applications filed between 2003 (more than a year after publication of the "flexible loop" species in Ex. 1010) and 2013 ***disparaged*** the flexible loop approach. Instead, these applications described the invention in terms of a rigid implant with a "fixed aperture" that allows the suture "to freely slide," thus eliminating the problems that arose with the "flexible loop." *E.g.*, Ex. 1005 [0006]-[0007]. A POSA studying these disclosures plainly would not have understood the inventors to be in possession of a genus of assemblies in which a generic "first member" provided the eyelet.

By contrast, the '601 Application (filed in 2014) rewrote the "Background" and "Summary" sections to delete all criticism of the "flexible loop" approach. The '601 Application also altered and substantially enlarged the "Detailed Description" section to describe suture securing assemblies with a "flexible loop."

Such descriptions and accompanying figures did not appear in any of Patent Owner's applications filed between 2003 and 2013. *E.g.*, Ex. 1009 (redline between '601 Application and '218 Application, filed in 2013).

After rewriting the specification, Patent Owner sought to claim the entire genus of suture securing assemblies with a "first member" having an eyelet while asserting a priority date of June 2000. This is a textbook example of the "overreaching" that Section 112 prohibits. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1354 (Fed. Cir. 2010).

Under Patent Owner's implicit view, claims 1-13 and 16-28 cover suture securing assemblies with a rigid implant as the first member and yet can only be invalidated by printed publications or products from before ***June 2000***, notwithstanding Patent Owner's concession that dependent claims 15 and 30 (restricted to the "rigid implant" species) have an effective filing date of ***April 2003***. Ex. 1018. Plainly, Patent Owner sought to circumvent prior art such as Martinek, which first disclosed the rigid implant species in ***September 2000***—years before Patent Owner first possessed that invention. Under the law, however, "genus" claims 1-13 and 16-28 are not entitled to priority based on any of the pre-2014 applications.

1. The ’263 and ’280 Applications (Filed in 2000 and 2001) Disclose Only the Flexible Loop Species and Thus Do Not Support Generic Claims.

The ’263 Provisional (Ex. 1003) and the ’280 Application (Ex. 1004) describe the “flexible loop” species, but fail to support the “rigid implant” species or a genus claim covering both.[9]

As discussed above, Patent Owner concedes that claims 15 and 30 in the ’907 patent—restricted to the “rigid implant” species—are ***not*** supported by the ’263 Provisional or the ’280 Application.

Nor do the ’263 Provisional or the ’280 Application support claims to a generic “first member” with an eyelet that can be ***either*** a “flexible loop” or a “rigid implant.” To support a genus claim, a specification must allow a POSA to “visualize or recognize” the subject matter that the genus encompasses. *Ariad,* 598 at 1350. Here, however, the ’263 Provisional and the ’280 Application do not allow a POSA to visualize any “first member” with an eyelet aside from the flexible suture loop itself.

[9] Instead, the ’280 Application discloses the possibility of ***omitting*** the suture loop, such that the assembly would not have a “first member comprising an eyelet” at all. Ex. 1004 at page 13 (10:7-11).

Indeed, the four later applications all confirm that the ’280 Application only discloses a flexible loop embodiment and no alternatives. They all characterize the ’280 as concerning “a cannulated driver … with a ***flexible*** loop at its distal end.” Ex. 1005 [0005], 1006 [0005]; 1007 [0005]; 1008 [0005]. As detailed in Section VII.B.2, these applications all disparage the flexible loop and suggest a “fixed aperture” to replace it. It was not until the ’601 Application (filed in 2014) that Patent Owner deleted these disparaging statements and stopped characterizing the ’280 Application as concerning a driver provided with a “flexible loop.”

Disclosing a single species (here, the flexible loop)[10] only supports a genus if a POSA would “readily discern that other [species] of the genus would perform similarly to the disclosed members.” *Synthes*, 734 F.3d at 1344-45. *See also In re Curtis*, 354 F.3d 1347, 1358 (Fed. Cir. 2004) (“[A]patentee will not be deemed to have invented species sufficient to constitute the genus by virtue of having disclosed a single species when, as is the case here, the evidence indicates ordinary artisans could not predict the operability in the invention of any species other than the one disclosed.”).

[10] The fact that dependent claim 5 in the ’280 Application references a “suture loop” does not suggest that the inventors envisioned other types of eyelets. Independent claim 1 encompasses embodiments that ***lack*** an eyelet. *See supra* n.9.

In *Synthes*, for example, the Federal Circuit affirmed that claims to an implant with "openings" on cover plates were not supported by an application disclosing an implant with "grooves" on the periphery of the cover plates. 734 F.3d at 1344. The difference between peripheral grooves and internal slots presented "substantial biomechanical differences," creating "significant engineering and design choices." *Id*. *See also Schriber-Schroth Co. v. Cleveland Trust Co.*, 305 U.S. 47 (1938) (holding that disclosure of pistons with "rigid" webs did not support claims to pistons with a "flexible" web, regardless of whether the specification "***enabled*** the use of a flexible web").

Here, likewise, Patent Owner's subsequent applications confirm the substantial differences between a flexible loop and a rigid implant in the context of suture securing assemblies.

The '280 Application emphasizes that the suture loop (i.e., the ostensible "first member" in the claims of the '907 patent) is "***freed***" once the interference device is fully inserted. Ex. 1004 at page 5 (2:23-24).

By contrast, the subsequent applications teach how the interference device "***engages and locks*** in the eyelet implant." *E.g.*, Ex. 1005 [0008]. This is the opposite of being "freed." McAllister ¶¶ 119-139. Moreover, an interference device cannot "engage and lock in" a suture loop, as opposed to a rigid implant.

The subsequent applications also stress that even "[m]ore importantly, the suture attached to the graft is allowed to freely slide through the aperture of the eyelet implant to allow precise advancement and guiding of the plug or screw." *E.g.*, Ex. 1005 [0029].

Having written its later 2003-2013 disclosures "to attribute unique properties to a claimed species different from the properties of other members of the genus," Patent Owner "cannot convey the knowledge that the overall genus has the same qualities, regardless of the knowledge of those skilled in the art." *In re Curtis*, 354 F.3d at 1357 (affirming that earlier disclosure did not support claims).

Tellingly, during prosecution of the European counterpart to the '280 Application, Patent Owner sought claims directed to a generic "loop" exposed at the end of a driver. Ex. 1017 at 94. The European Examiner rejected such claims, as "the flexibility and dimensions of suture are indispensable for the disclosed function of the loop so that it cannot be omitted" in favor of a "generic loop." Ex. 1017 at 137. Patent Owner responded by limiting the claim to a "suture loop" (*id*. at 145)—further confirming that the '280 Application disclosure does not support claims to a generic "first member" comprising an eyelet.

In sum, the '263 Provisional and the '280 Application do not support any of claims 1-13 and 16-28 of the '907 patent, which cover a generic "first member," with an eyelet that can be formed by either a flexible loop ***or*** a fixed aperture.

Nothing in the ’263 Provisional or the ’280 Application discloses that the inventors had developed a genus that could encompass a first member with a fixed aperture. Moreover, Patent Owner’s subsequent disclosures (discussed below) emphasize the substantial differences between the suture loop and the fixed aperture.

2. Later Applications Disparage the Flexible Loop Species and Thus Do Not Support Generic Claims.

Patent Owner’s four subsequent patent applications—filed between 2003 and 2013—only support claims to the “rigid implant” species. They disparage the earlier “flexible loop” species.

a. The ’707 Application (Filed in 2003)

The ’707 Application (Ex. 1005) is a continuation-in-part of the ’280 Application and disparages the “flexible loop” configuration. It stresses that the flexible loop “disadvantageously impedes sliding of the suture or graft which is fed through the suture loop.” [0004]. The ’707 Application also teaches that the flexible loop required “approximat[ing]” placement of the suture or graft in the bone hole and thus sometimes necessitated additional steps, damaging surrounding bone and cartilage. [0005]. The “Background” section emphasizes the “need” for a different device that “allows the free sliding of the suture ends” and also “precise advancement” into the bone hole. [0006].

The "Summary of the Invention" section in turn begins by stressing that:

> 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***.

[0007].

Consistent with this summary, the ***only*** eyelet-based embodiment in the '707 Application features an "eyelet implant" made of a "transparent polymer material" and thus having a "fixed aperture."[11] [0008], [0024], McAllister ¶ 120.

The '707 Application teaches that any alternative must likewise allow suture "to freely slide within the aperture":

> ***[T]he present invention*** also contemplates implants affixed to or detachable from a preloaded driver and 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***.

[0033].

[11] The other two disclosed embodiments—one involving a "horseshoe-shaped" wedge, and the second a "driver with metal tubing"—also permit the suture to "freely slide." [0009]-[0010], [0030], [0035].

This requirement plainly excludes any "flexible loop," which the Background section disparages as undesirable because it "***impedes*** sliding of the suture" and can "damage the bone." [0005]. The requirement forecloses the possibility that a POSA would have understood the inventors as having possessed a "first member" genus encompassing both suture loops and fixed apertures. *E.g.*, *In re Bimeda Research & Development Ltd.*, 724 F.3d 1320, 1323-24 (Fed. Cir. 2013) (affirming no support for claim covering use of antibiotics, as a POSA reading the specification's characterization of the "invention" would gain the "clear understanding" that the inventive formulation "cannot include antibiotics"). Using a flexible loop as an eyelet would be "outside the stated purpose of the invention" to allow for the "captured suture to freely slide within the aperture." *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1478 (Fed. Cir. 1998) (citing characterization of "present invention").

A POSA would understand that the "flexible loop" configuration (as described in the '280 Application) was a problematic prior art concept that the inventors had moved beyond when filing the '707 Application. Indeed, the "Summary of the Invention" in the '707 Application refers to the invention "overcom[ing] the disadvantages of the prior art, such as those noted above." [0007]. This plainly refers to the criticisms of the '280 Application, which are the only instance "above" in which the "disadvantages" of the prior art are discussed.

In other words, the ’707 Application characterizes the ’280 Application as “prior art.” Consistent with this description, the ’707 Application was filed on April 3, 2003—more than a year after publication of the ’280 (as “ElAttrache”).

As the Federal Circuit and the Board have repeatedly held, 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.” *ULF Bamberg v. Dalvey*, 815 F.3d 793, 797 (Fed. Cir. 2016)*; Research Corp. Techs. v. Microsoft Corp.*, 627 F.3d 859, 870-72 (Fed. Cir. 2010); *Anascape*, 601 F.3d at 1340; *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1159 (Fed. Cir. 1998); *Ex Parte Research Corp. Techs., Inc.*, Appeal 2010-007802, 2010 WL 2397105 (BPAI June 15, 2010).

In *Anascape* for example, the Federal Circuit held that an alleged priority document failed to support generic claims to a controller having one or more “input members” that individually or collectively provided “six degrees of freedom.” The specification criticized a prior art design that relied on multiple input members. 601 F.3d at 1337. Instead, the specification emphasized that a “primary object of the invention” was to provide a “single input member” offering six degrees of freedom. *Id*. at 1336. The “only reasonable reading” of the alleged priority document was that it “describe[ed] only a controller having a single input member operable in six degrees of freedom.” *Id*. at 1340.

Similarly, the patent owner in *Tronzo* unsuccessfully argued that a parent application touting the benefits of artificial hip sockets with conically-shaped cup implants supported generic claims to cups with any shape. A jury agreed, but the Federal Circuit reversed and held as a matter of law that the generic claims were not entitled to the parent application's filing date. 156 F.3d at 1159. The Federal Circuit stressed that the parent application only referred to "different shapes" in a "recitation of the prior art." *Id*. The specification "specifically distinguishes the prior art and touts the advantages of the conical shape." *Id*. ("Such statements make clear that the [parent application] discloses *only* conical shaped cups and nothing broader.").

Here, likewise, the '707 Application mentions the "flexible loop" configuration only for purposes of criticizing this "prior art" ([0004]-[0007]) and emphasizing the need for an alternative approach that allows the suture to slide freely. As in *Tronzo* and *Anascape*, the disclosure "specifically distinguishes the prior art as inferior and touts the advantages of" a rigid implant. The "only reasonable reading" of the '707 Application is that it concerns a suture anchor featuring a rigid implant—not a generic "member" that can take the form of a flexible suture loop.

In *Research Corp.*, moreover, the Board cited *Tronzo* and determined that a priority document disclosing a "blue noise mask" for use in "halftone rendering" failed to support later-filed "generic" claims that did not require a blue noise mask. 2010 WL 2397105 at *4-*5 (assuming for purposes of the analysis that the field was "predictable"). The priority document at issue in *Research Corp.* followed the same pattern as in the '707 Application:

- The "Background of the Invention" referenced other types of halftone rendering, but explained that these alternatives "presented problems" and yielded "undesirable artifacts." *Id*. at * 3. Here, likewise, the '707 Application disparages the prior art "flexible loop configuration" and emphasizes the "need" for "an improved surgical technique and associated device" that avoids the problems with the prior art. Ex. 1005 [0006].
- The "Summary and Objects of the Invention" emphasized that "these and other objects of the invention are accomplished by generating a blue noise mask." 2010 WL 2397105, at *3. Here, likewise, the "Summary of the Invention" section of the '707 Application emphasizes that the "present invention overcomes the disadvantages of the prior art" by providing an "eyelet implant" with a ""fixed aperture," allowing the suture "to freely slide through the aperture." Ex. 1005 [0007].

Given the record in *Research Corp.*, the Board concluded that "a blue-noise mask" was "central to the invention disclosed in the" priority document, such that the document failed to support generic claims that covered other techniques for halftone rendering—notwithstanding that the Background mentioned other options. 2010 WL 2397105, at *5 (citing *Tronzo* and affirming cancellation of claims). Here, similarly, the fact that the'707 Background mentions the flexible loop configuration when disparaging it does not entitle Patent Owner to generic claims featuring a "first member" that can include a flexible suture loop.

Moreover, when the Federal Circuit later affirmed a district court's finding that the alleged priority document failed to support the claims, the court emphasized that the specification described the "present invention" as concerning a blue-noise mask. *Research Corp.*, 627 F.3d at 871-72. The Federal Circuit never even mentioned the discussion in the Background, confirming that it is irrelevant to the priority analysis.

It is immaterial that the original claims in the '707 Application as filed include certain claims that recite an "aperture." Supporting "a claimed genus requires more than a generic statement of an invention's boundaries." *Ariad,* 598 F.3d at 1349. Properly construed, the claimed "aperture" must have a fixed configuration to permit the free sliding of suture, thus overcoming the problems of the prior art "suture loop" configuration that the '707 Application disparages.

LizardTech v. Earth Resource Mapping, 424 F.3d 1336, 1343-44 (Fed. Cir. 2005) ("It would be peculiar for the claims to cover prior art that suffers from precisely the same problems that the specification focuses on solving."); *O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1581 (Fed. Cir. 1997) (construing "passage" to exclude smooth-walled structures, which the specification characterized as part of the prior art).

It is also immaterial that the Background section of the '707 Application incorporates the '280 by reference. This provided context for the '707's criticism of the "flexible loop configuration" and emphasis that a need existed for a device that permitted "the free sliding of the suture ends attached to a graft" – a need the inventors sought to satisfy with an "eyelet implant … that securely engages and locks into a cannulated ribbed body of an interference plug or screw." A POSA reading the '707 would understand that the inventors possessed only this "eyelet implant" at the time and had abandoned the "flexible loop configuration" prior art, which indeed had been publicly disclosed more than a year earlier. Nothing in the '707 suggests that the inventors envisioned the concept of a generic "first member" with an eyelet that could be formed either in a flexible loop or a rigid implant.

Tellingly, the ’907 patent ***deletes*** the incorporation by reference. Had this incorporation been sufficient to support generic claims, there would have been no need for Patent Owner to rewrite the specification. In reality, the ’707 and ’280 Applications are fundamentally at odds with one another. *Cf. Modine Mfg. Co. v. ITC*, 75 F.3d 1545, 1553 (Fed. Cir. 1996) (“[I]ncorporation by reference does not convert the invention of the incorporated patent into the invention of the host patent.”), *overruled on other grounds by Festo v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558 (Fed. Cir. 2000).

It is also immaterial that the ’707 Application includes an expansive title and characterizes the “field of the invention” in generic terms. *In re Wilder*, 736 F.2d 1516, 1520, 1521 (Fed. Cir. 1984) (affirming rejection of reissue claims for lack of description, notwithstanding “broadly worded title” and statements concerning “Object of the Invention” section).

Nor can Patent Owner combine the ’280 and ’707 Applications to justify a priority date of 2003 (or for that matter any other date prior to 2014, as detailed below). *Studiengesellschaft*, 112 F. 3d at 1564 (“Because individual claims of the ’698 patent could not have been added to any single, previously-filed application, the ’698 patent is not eligible for an earlier filing date.”); *Ex Parte Chu*, Appeal 2001-0959, 2003 WL 22282257, *5 (BPAI) (“grandparent and parent applications” could not “be combined to acquire an earlier filing date under 35 U.S.C. § 120”).

Here, as in *Studiengesellschaft*, generic claims 1-13 and 15-28 (covering any first member, regardless of whether it is flexible or rigid) could not have been added to either the ’263 Application (limited to flexible suture loops) or the ’280 Application (limited to rigid implants, and disparaging flexible suture loops).

b. The ’868 Application (Filed in 2008)

The ’868 Application (Ex. 1006) is a continuation-in-part of the ’707 Application and includes the same “Background of the Invention” section disparaging the prior art “flexible loop.” The ’868 also includes an identical first paragraph of the “Summary of the Invention” emphasizing that the “present invention overcomes the disadvantages of the prior art” and provides an “eyelet implant” with a “fixed aperture…such that the suture is able to freely slide through the aperture.” [0007]. Similarly, the “Detailed Description” section concludes with a paragraph that mirrors the ’707 Application and emphasizes that while alternative embodiments are possible, they must “allow[] the captured suture to freely slide within the aperture.” [0041].

c. The ’893 Application (Filed in 2011)

The ’893 Application (Ex. 1007) is a continuation of the ’868 Application. The disclosures of the ’893 and ’868 Applications are identical apart from the original claims. Both independent claims as filed in the ’893 Application reinforced the conclusion that support for a broad “first member” genus is lacking:

they required an implant with an aperture that is configured such that "the suture can slide freely through the aperture of the implant."[12] As discussed above, this was the crux of the distinction that Patent Owner consistently drew between the "rigid implant" invention and the "flexible loop" prior art.

d. The '218 Application (Filed in 2013)

The '218 Application (Ex. 1008) is a divisional of the '893 Application and is identical to the '893 Application aside from the original claims as filed. The '218 Application includes only apparatus claims, which were subject to a restriction requirement during prosecution of the '893 Application. However, the claim sets are identical in relevant respect, as all required an implant with an aperture that is configured such that "the suture can slide freely through the aperture of the implant."

Likewise, the '218 Application includes the same language as the '707, '868, and '893 Applications disparaging the "flexible loop" configuration and emphasizing that it "disadvantageously impedes sliding of the suture." [0005].

[12] By contrast, the '707 and '868 Applications include original claims that do not expressly require the suture to slide freely through the aperture. However, as detailed in Section VII.B.2.a above, decisions such as *LizardTech* confirm that one must assess original claims in the context of the specification as a whole.

Thus, like the preceding applications, nothing in the ’218 Application suggests that the inventors envisioned the concept of a generic “first member” with an eyelet that could be formed either in a flexible loop or a rigid implant.

3. The ’601 Application (Filed in 2014) Deleted the Criticism of the Flexible Loop Species—Broadening the Disclosure and Introducing New Matter.

The ’601 Application (filed May 8, 2014) purports to be a “continuation” of the ’218. However, there are substantial differences, which are evident in Exhibit 1009—a “redline” comparison. The ’601 rewrites the “Background of the Invention” to remove all criticism of the “suture loop” embodiment and any suggestion of a need for a device that allows the free sliding of suture. The ’601 also deletes Patent Owner’s previous admission that the original ’280 Application related specifically to a “flexible loop” configuration.

Instead, the new “Background of the Invention” section refers generically to the need for suture anchors that allow surgeons to attach tissue to bone without “having to tie suture knots.” Likewise, the ’601 Application rewrites the “Summary of the Invention” to refer to knotless suture anchors generically—deleting any mention of permitting the suture to “freely slide through the aperture.”

These “extensive and substantive” changes are “classical new matter.” *Anascape*, 601 F.3d at 1338. Thus, the ’601 is a continuation-in-part of the ’218, which does not support generic claims 1-13 or 16-28. *Id*. *See also supra* n.1.

Indeed, Patent Owner attempted the same strategy that the Federal Circuit rejected in *Anascape*: deleting an earlier application's criticism of the prior art and then asserting that generic claims in the new application are entitled to priority based on the earlier application's filing date. 601 F.3d at 1336-37. Here, the '601 Application deletes the '218 Application's criticism of flexible loops and rewrites the Summary of the Invention section to delete all references to an eyelet "implant." Instead, the new Summary of the Invention Section refers generically to a "first member" with an "eyelet." Likewise, the accompanying independent claims refer generically to a "first member."

Prior to the '601 Application, none of Patent Owner's disclosures permitted a POSA to "clearly conclude that that the inventor[s]" had invented a genus of suture securing assemblies with a "first member" having an eyelet that could be either a "loop of suture" or a "rigid implant." *Lockwood*, 107 F.3d at 1572. Instead, a POSA would understand from the previous applications that the inventors had ***initially*** considered a "flexible loop" configuration (described in the 1999 and 2000 applications) before realizing that it was flawed because the loop "disadvantageously impedes sliding of the suture or graft," as emphasized in every intervening application between 2003 and 2013. McAllister ¶¶ 123-124, 135, 138, 140. The intervening applications support only the "rigid implant" species, which was designed to avoid the problems with the "flexible loop" configuration.

Patent Owner plainly recognized the limited disclosures in these intervening applications when rewriting the ’601 Application (just like the patent owner in *Anascape*) in the hope of supporting broader claims.

Moreover, as previously discussed, the earlier patent applications collectively confirm the unique properties of the flexible loop and rigid implant species. Having “explicitly written” each specification (before the ’601 Application in 2014) to “attribute unique properties to” the applicable “claimed species,” Patent Owner is not entitled to a priority date for the genus claims any earlier than the May 8, 2014 filing date of the ’601 Application itself. *In re Curtis*, 354 F.3d at 1356-57 (“Where the specification unequivocally identifies the species as unique and different, it cannot convey the knowledge that the overall genus has the same qualities.”).

4. Patent Owner’s Priority Claim Would Improperly Evade “Rigid Implant” Prior Art Based on *Broader* Claims

Affording Patent Owner a priority date earlier than the 2014 filing date of the ’907 patent would subvert the “vital role” that the written description requirement serves “in curtailing claims…that have not been invented, and thus cannot be described.” *Ariad*, 598 F.3d at 1352. Section 112 “ensure[s] that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor’s contribution to the field of art as described in the patent specification.” *Id*. at 1354.

Here, claims 1-13 and 15-28 ostensibly exclude others from practicing the entire genus of suture securing assemblies with a "first member" containing an eyelet. At the same time, Patent Owner asserts that these claims have an effective filing date of ***June 22, 2000***, such that later products or printed publications would be irrelevant to their patentability. Yet Patent Owner concedes that claims 15 and 30—limited to the rigid implant species—are only entitled to priority as of the ***April 3, 2003*** filing date of the '707 Application. Ex. 1018. This is more than a year after the "flexible loop" species was published in ElAttrache (Ex. 1010).

These dates underscore the fundamental problem with Patent Owner's position—a problem that Patent Owner sought to mask when it filed the '601 Application in 2014 and improperly characterized it as a "continuation" despite deleting the criticism of the "flexible loop" species.

On the one hand, Patent Owner maintains that genus claims 1-13 and 16-28 are entitled to a June 2000 priority date, such that ElAttrache (published in 2002) would be irrelevant to patentability. At the same time, Patent Owner acknowledges (as it must) that a POSA reading the '263 Provisional Application (filed in June 2000) or the '280 Application (filed in June 2001) would not have understood the inventors to be in possession of a suture securing assembly that incorporated a "rigid implant" as the eyelet. Patent Owner concedes that dependent claims 15 and 30 are not entitled to a priority date earlier than April 3, 2003.

Patent Owner's positions are irreconcilable. If—contrary to fact—the '280 Application (and thus ElAttrache—§102(b) prior art to claims 15 and 30) disclosed the "first member" genus, then species claims 15 and 30 would necessarily be invalid unless the actual disclosure in the '280 Application did ***not*** permit a POSA to "envision every member of the class." *AbbVie Inc. v. Mathilda & Terence Kennedy Inst. of Rheumatology Trust*, 764 F.3d 1366, 1378-81 (Fed. Cir. 2014) ("[S]pecies are unpatentable when prior art disclosures describe the genus containing those species such that a person of ordinary skill in the art would be able to envision every member of the class.").

Yet that conclusion would create a paradox. For the '280 Application to support the genus claims (as Patent Owner contends), it would need to permit a POSA to "***visualize or recognize***" the subject matter that the genus encompasses. *Ariad*, 598 F.3d at 1350. In other words, a POSA reading the "flexible loop" description would also need to envision a "rigid implant." If this were true, species claims 15 and 30 would necessarily be anticipated.

Patent Owner plainly understood this law—and the associated problem—in 2003 when drafting the '707 Application Having publicly disclosed the "flexible loop" species more than a year earlier, Patent Owner crafted a disclosure that stressed the problems with the "flexible loop" and emphasized the need for an improved assembly having a "fixed aperture" that allows suture "to freely slide."

With this background, Patent Owner positioned itself to argue that the "rigid implant" species would not have been obvious over the "flexible loop" species.

Patent Owner in turn included identical language criticizing the "flexible loop" species in every subsequent application between 2003 and 2013.
A POSA reading these disclosures would have understood that the inventors recognized the problems with the "flexible loop" and instead had progressed to a "fixed aperture," which in Patent Owner's view was patentable over the "flexible loop" disclosure. At the same time, a POSA would have scrutinized such "rigid implant" claims using April 3, 2003 as the effective filing date. Under this date, Martinek is indisputable §102(b) prior art..

In 2014, however, Patent Owner reversed course and deleted criticism of the "flexible loop" in the hope of supporting claims to an assembly with a generic "first member," either flexible or rigid. Prior to 2014, none of Patent Owner's disclosures conveyed that the inventors possessed such a genus. Instead, a POSA interested in practicing the "rigid implant" approach would have looked to April 3, 2003 as the applicable priority date when identifying prior art (such as Martinek).

It would defy logic and fairness to credit June 22, 2000 as the priority date for claims 1-13 and 15-28. Such a finding would permit Patent Owner to circumvent references such as Martinek as to the broader genus claims, yet still assert those claims against products incorporating a "rigid implant"—

notwithstanding that Martinek is indisputable prior art to the "rigid implant" species claims (15 and 30). Patent Owner's approach would allow for the paradoxical result of a dependent claim being anticipated or obvious without the corresponding independent claim also necessarily being invalid. *See, e.g.*, *Callaway Golf v. Acushnet*, 576 F.3d 1331, 1344 (Fed. Cir. 2009) ("A broader independent claim cannot be nonobvious where a dependent claim stemming from that independent claim is invalid for obviousness."); *Ormco*, 498 F.3d at 1319–20.

VIII. THRESHOLD REQUIREMENT FOR *INTER PARTES* REVIEW

This Petition and the supporting evidence demonstrate "a reasonable likelihood that petitioner would prevail" as "to at least one of the claims challenged in the petition." 35 U.S.C. § 314(a). Claims 1, 4, 8, 10-12, 16, 18, 25-28, and 30 are anticipated over the prior art references relied upon in this Petition, as explained in detail by Dr. McAllister (Ex. 1019).

IX. CLAIM-BY-CLAIM EXPLANATION OF GROUNDS

A. ElAttrache Anticipates Claims 1, 4, 8, 10-12, 16, 18, and 25-28

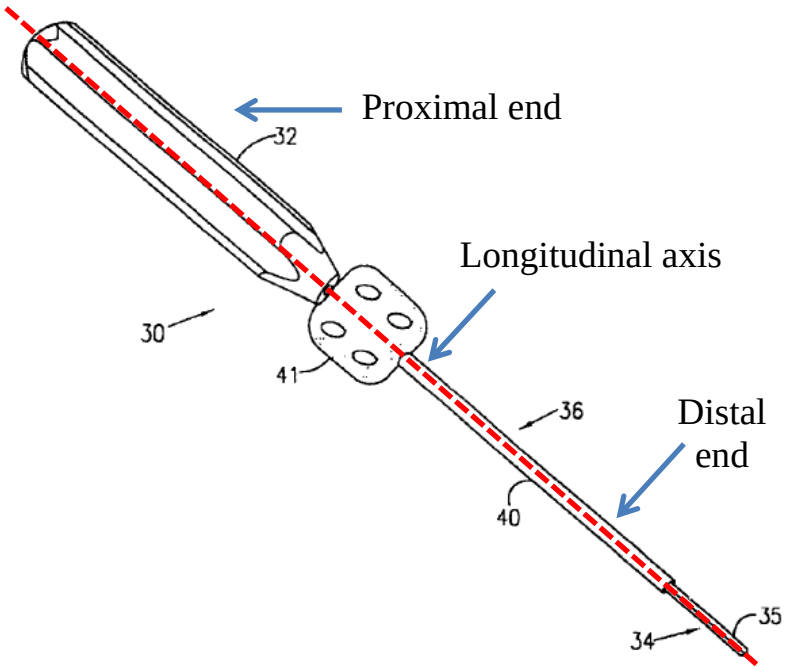
ElAttrache is prior art to claims 1, 4, 8, 10-12, 16, 18, and 25-28 of the '907 patent under pre-AIA §102(b) and post-AIA §102(a)(1) as explained above. Indeed, ElAttrache would be prior art unless the challenged claims were entitled to a priority date of June 22, 2001 or earlier. They are not, as detailed in Section VII.

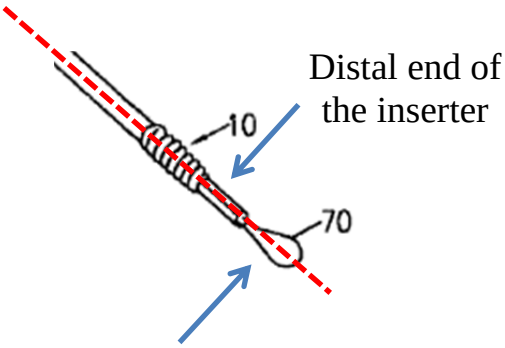
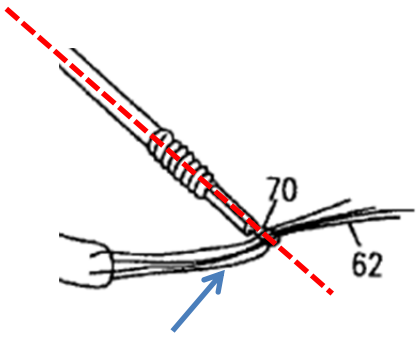
ElAttrache corresponds to the ’280 application discussed in Section VII.B.1. ElAttrache is an ancestor of the ’907 patent and discloses a suture securing assembly with a loop of suture defining the eyelet—just like the suture loop embodiment described in the ’907 patent.

Indeed, Figures 1-20 and the corresponding text of ElAttrache are essentially identical to Figures 1-20 and the corresponding text of the ’907 patent.

As discussed in Section VII, ElAttrache does not support claims 1, 4, 8, 10-12, 16, 18, and 25-28 of the ’907 patent because it fails to indicate that the inventors had developed a suture securing assembly with a generic “first member” containing an eyelet regardless of whether it is rigid or flexible. However, ElAttrache discloses the flexible loop species. As detailed in the claim charts below, this species anticipates claims 1, 4, 8, 10-12, 16, 18, and 25-28 even though ElAttrache does not support these claims under §112. *E.g.*, *Tronzo*, 156 F.3d at 1160 (affirming that foreign counterpart to parent application anticipated CIP claims even though parent did not support those claims).

’907 CLAIM 1	**ELATTRACHE**
1[pr.] A suture securing assembly, comprising:	[0008] (“A cannulated plug or screw is pre-loaded onto the distal end of a cannulated driver… The screw or plug is then fully advanced into the hole using the driver to frictionally secure either the suture attached to the graft or the graft itself into the bone hole.”)

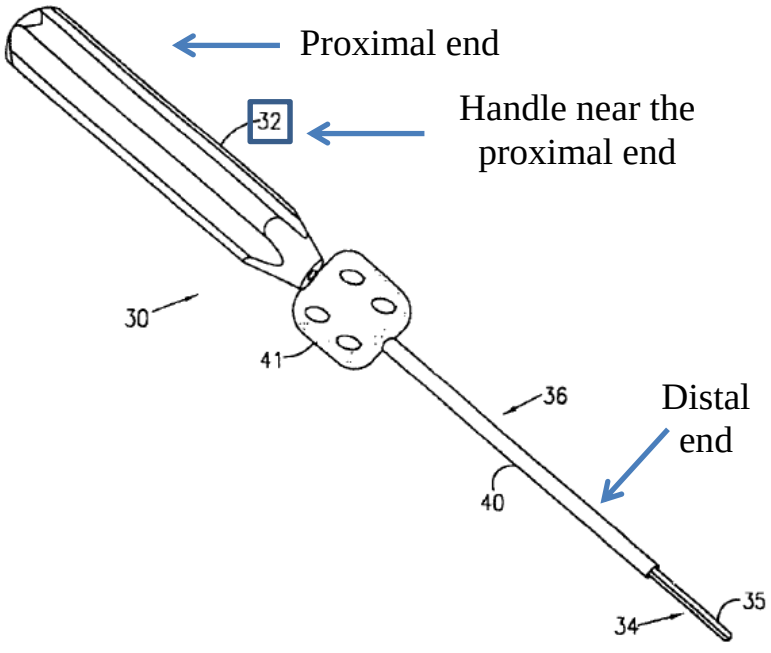
’907 CLAIM 1	ELATTRACHE
1[A] an inserter including a distal end, a proximal end, and a longitudinal axis between the distal end and the proximal end;	[0035] (“[D]river 30 includes a handle 32, inner shaft 34, and outer shaft 36. FIG. 8 shows a handle having a connector 31 for coupling with driver 30.”); *see also* annotated Figure 7 below:  Claim 6 (referring to a “distal” and “proximal” “end of the driver”).
1[B1] a first member including an eyelet oriented to thread suture across the longitudinal axis,	[0046] (“Traction suture 68 is passed into the cannula of the driver, such that ***a looped end 70 is exposed at the distal end of the driver***. Sutures 62 attached to graft 60 are then passed through ***traction suture loop 70*** at the end of driver 30 as seen in FIG. 16….”); *see also* annotated Figures 15 and 16, below:
1[B2] the first member being situated near the distal end of the inserter,	

’907 CLAIM 1	ELATTRACHE
	 A first member including an eyelet oriented to thread suture across the longitudinal axis  Suture threaded across the longitudinal axis
1[B3] the first member being configured to be placed in bone; and	[0046] (“Traction suture 68 is passed into the cannula of the driver, such that ***a looped end 70 is exposed at the distal end of the driver***.”) Claim 5 (“passing suture through the cannula of the driver such that a ***loop of suture*** is exposed at the distal end of the driver…and inserting the distal end of the driver into the hole [in bone, per claim 1]”)

’907 CLAIM 1	ELATTRACHE
1[C1] a second member situated near the distal end of the inserter,	[0046] (“[A]s shown in FIG. 15, driver 30 is pre-loaded with ***screw 10*** with outer shaft 36 in the fully retracted position and the distal end of the screw abutting shoulder 37 of inner shaft 34 and the distal end surface of outer shaft 36.”)
1[C2] the second member being moveable by a portion of the inserter relative to the first member in a distal direction toward the eyelet into a suture securing position	[0047] (“[T]he driver is manipulated so that the first thread edge of the screw engages the bone at the edge of the hole 66. The driver is turned by rotating handle 32 and thus inner shaft 34 while preventing outer shaft 36 from rotating by holding thumb pad 41 in place during rotation of handle 32. This maneuver causes the outer shaft to move distally along the inner shaft … the outer shaft guides insertion of the screw into the socket … In this manner, the screw advances along the hex section of the driver until the screw is fully installed to the position shown in FIGS. 18A and 18B, with sutures 62 or the graft 60 pinned and/or wound between the base and sidewall of socket 66 and interference screw 10.”)
1[C3] where the second member locks suture in place.	[0047] (“In this manner, the screw advances along the hex section of the driver until the screw is fully installed to the position shown in FIGS. 18A and 18B, ***with sutures 62 or the graft 60 pinned and/or wound between the base and sidewall of socket 66 and interference screw 10***.”) [0052] (“Another advantage achieved by the present invention is that the sutures attached to the graft or the graft is ***secured both along the bottom of the bone socket by the tip of the interference screw or plug, as well as along the sidewall of the socket between the bone and the screw or plug***.”)

’907 CLAIM 4	ELATTRACHE
4. The assembly of claim 1, wherein the second member locks the suture in place against an exterior surface of the second member when the second member is in the suture securing position.	*See* 1[C3]

’907 CLAIM 8	ELATTRACHE
8. The assembly of claim 1, wherein the second member comprises a screw.	[0046] (“[A]s shown in FIG. 15, driver 30 is pre-loaded ***with screw 10*** ….”)

’907 CLAIM 10	ELATTRACHE
10. The assembly of claim 1, wherein	
the inserter comprises a handle near the proximal end;	[0035] (“[D]river 30 includes a ***handle 32***, ***inner shaft 34***, and ***outer shaft 36***.”); *see also* annotated Figure 7 below:
a first shaft and a second shaft;	

’907 CLAIM 10	ELATTRACHE
the first shaft facilitates inserting the first member into bone; and	[0047] (“Referring now to FIG. 17, the driver 30 is held with gentle pressure with the distal end of ***hex section 35*** at the bottom of the hole 66, keeping the screw 10 just outside the hole … the driver is manipulated so that the first thread edge of the screw engages the bone at the edge of the hole.”) Hex section 35 is part of the first (inner) shaft. *See* [0036] (“Inner shaft 34 includes a shaft body 38 having a threaded proximal section 39 and a hex-shaped distal section 35.”)
the second shaft facilitates moving the second member into the suture securing position.	[0047] (“This maneuver causes the ***outer shaft*** to move distally along the inner shaft…In this manner, ***the screw advances*** along the hex section of the driver until the screw is fully installed to the position shown in FIGS. 18A and 18B….”); *see also* 1[C3].

’907 CLAIM 11	ELATTRACHE
11. The assembly of claim 10, wherein the second shaft is moveable relative to the first shaft for moving the second member into the suture securing position.	[0047] (“This maneuver causes ***the outer shaft to move distally along the inner shaft*** by the interaction of the inner threads in the outer shaft 62 with the threads on threaded portion 39 of inner shaft 34, while also causing the screw threads to engage the sides of the hole and pull the screw into the hole. The inner shaft of the driver thus rotates without advancing further into the hole, while ***the outer shaft guides the insertion of the screw into the socket***. In this manner, the screw advances along the hex section of the driver until the screw is fully installed to the position shown in FIGS. 18A and 18B, with sutures 62 or the graft 60 pinned and/or wound between the base and sidewall of socket 66 and interference screw 10.”)

Claim 12 depends from claim 11 and requires "a cap that is moveable relative to the handle and connected with the second shaft for moving the second shaft to cause the second member to move into the suture securing position." As discussed in Section VI.C, the '907 specification does not reference any "cap" that fulfills the recited functional requirements. Instead, the BRI encompasses any structure connected with the second shaft and capable of fulfilling the recited function.

Accordingly, thumb pad 41 in ElAttrache discloses the cap as claimed. The pad is connected to the second (outer) shaft 36 as shown in Figure 10. [0037] The thumb pad is moveable in that it moves relative to the handle when the handle is rotated. [0047]. "This maneuver causes the outer [second] shaft to move distally," thus "guid[ing] the screw into the [bone] socket…until the screw is fully installed" in the suture securing position (i.e., such that the sutures are "pinned" between the screw and the bone wall). *Id*.

'907 CLAIM 16	**ELATTRACHE**
16[pr.] A suture securing assembly, comprising:	*See* 1[pr]
16[A] a driver having a length and a width, the length being greater than the width, the length being parallel to an insertion direction;	[0035] ("FIG. 7 illustrates a driver 30 according to the present invention for driving the interference screw described above. Generally, driver 30 includes a handle 32, inner shaft 34, and outer shaft 36. FIG. 8 shows a handle having a connector 31 for coupling with driver 30.")

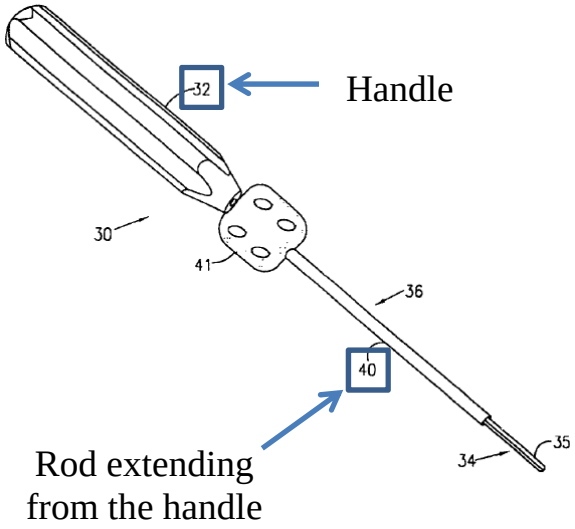
’907 CLAIM 16	ELATTRACHE
16[B1] a first member supported by the driver,	[0046] (“Traction suture 68 is passed into the cannula of the driver, such that ***a looped end 70 is exposed at the distal end of the driver***. Sutures 62 attached to graft 60 are then passed through ***traction suture loop 70*** at the end of driver 30 as seen in FIG. 16, to position the graft at an appropriate distance from the distal end of driver 30, either at a distance corresponding to the length of the screw or so that the graft is located directly at the distal end of the driver.”)
16[B2] the first member comprising an eyelet that is transverse to the length, the eyelet being configured to allow suture to be threaded through the eyelet transverse to the length	
16[B3] the first member being situated to be moved in the insertion direction to be received in bone; and	[0046] (“Traction suture 68 is passed into the cannula of the driver, such that ***a looped end 70 is exposed at the distal end of the driver***.”) Claim 5 (“passing suture through the cannula of the driver such that a loop of suture is exposed at the distal end of the driver…and ***inserting the distal end of the driver into the hole*** [in a bone, per claim 1]”)
16[C1] a second member supported by the driver,	[0046] (“Next, as shown in FIG. 15, driver 30 is pre-loaded with ***screw 10*** with outer shaft 36 in the fully retracted position and the distal end of the screw abutting shoulder 37 of inner shaft 34 and the distal end surface of outer shaft 36.”)

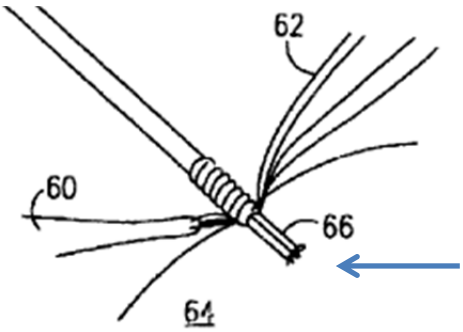
’907 CLAIM 16	ELATTRACHE
16[C2] the second member being situated to be moved by a portion of the driver in the insertion direction relative to at least the first member into a suture securing position	[0047] (“This maneuver causes ***the outer shaft to move distally along the inner shaft*** by the interaction of the inner threads in the outer shaft 62 with the threads on threaded portion 39 of inner shaft 34, while also causing the screw threads to engage the sides of the hole and pull the screw into the hole. The inner shaft of the driver thus rotates without advancing further into the hole, while ***the outer shaft guides the insertion of the screw into the socket***. In this manner, the screw advances along the hex section of the driver until the screw is fully installed to the position shown in FIGS. 18A and 18B, with sutures 62 or the graft 60 pinned and/or wound between the base and sidewall of socket 66 and interference screw 10.”)
16[C3] where the second member locks suture in place.	*See* 1[C3]

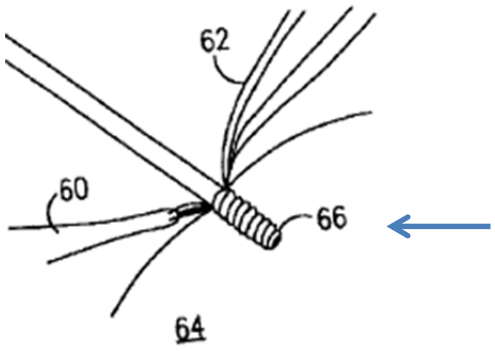
’907 CLAIM 18	ELATTRACHE
18. The assembly of claim 16, wherein the driver has a distal end and a proximal end;	[0035] (“FIG. 7 illustrates a driver 30 according to the present invention for driving the interference screw described above. Generally, driver 30 includes a handle 32, inner shaft 34, and outer shaft 36. FIG. 8 shows a handle having a connector 31 for coupling with driver 30.”)

’907 CLAIM 18	ELATTRACHE
the insertion direction corresponds to a direction from the proximal end toward the distal end; and the first member is situated at least partially beyond the distal end of the driver.	[0046] (“Traction suture 68 is passed into the cannula of the driver, such that ***a looped end 70 is exposed at the distal end of the driver***. Sutures 62 attached to graft 60 are then passed through ***traction suture loop 70*** at the end of driver 30 as seen in FIG. 16, to position the graft at an appropriate distance from the distal end of driver 30, either at a distance corresponding to the length of the screw or so that the graft is located directly at the distal end of the driver.”); [0047] (“Referring now to FIG. 17, the driver 30 is held with gentle pressure with the distal end of hex section 35 at the bottom of the hole 66, keeping the screw 10 just outside the hole.”)

’907 CLAIMS 19 AND 20	ELATTRACHE
19. The assembly of claim 16, wherein the second member locks suture in place against an exterior surface of the second member when the second member is in the suture securing position. ***20.*** The assembly of claim 19, wherein the second member is configured to lock suture in place by wedging suture between the second member and bone.	[0047] (“In this manner, the screw advances along the hex section of the driver until the screw is fully installed to the position shown in FIGS. 18A and 18B, ***with sutures 62 or the graft 60 pinned and/or wound between the base and sidewall of socket 66 and interference screw 10***.”) [0053] (“Another advantage achieved by the present invention is that the sutures attached to the graft or the graft is ***secured both along the bottom of the bone socket by the tip of the interference screw or plug, as well as along the sidewall of the socket between the bone and the screw or plug***.”)

’907 CLAIMS 25-26	ELATTRACHE
25[pr.] The assembly of claim 16, wherein the driver comprises a handle and a rod extending from the handle;	[0035] (“[D]river 30 includes a ***handle 32***… FIG. 8 shows a ***handle having a connector 31 for coupling with driver 30***.”) [0037] (“FIG. 10 shows the outer shaft 36 of the driver 30. Outer shaft 36 includes a ***sleeve 40 which covers and is slidable over shaft body 38***….”); *see also* annotated Figure 7 below: 
25[A] the rod includes a first shaft and a second shaft;	[0035] (“[D]river 30 includes … ***inner shaft 34***, and ***outer shaft 36***.”) [0037] (“FIG. 10 shows the outer shaft 36 of the driver 30. Outer shaft 36 includes a ***sleeve 40*** which ***covers and is slidable over shaft body 38***, and a thumb pad 41 for being gripped by a user. ***Outer shaft 36 is cannulated through its entire length***, of course, with the diameter of the cannula being slightly larger than the outer diameter of the central portion of ***inner shaft body 38***. The portion of the cannula through thumb pad 41 is threaded to mate with the threads on the threaded proximal section 39 on ***inner shaft 34***. The inner diameter of the inner threads in thumb pad 41 is smaller than the outer diameter of the central portion of shaft body 38, so as to limit the proximal movement of the ***outer shaft 36*** relative to the ***inner shaft 34***.”)

’907 CLAIMS 25-26	ELATTRACHE
25[B] the first shaft facilitates inserting the first member into bone; and	[0047] (“Referring now to FIG. 17, the driver 30 is held with gentle pressure with the ***distal end of hex section 35*** at the bottom of the hole 66, keeping the screw 10 just outside the hole. Tension can then be placed on the graft sutures 62 by drawing on traction suture 68 to tighten suture loop 70.”); see also annotated Figure 17, below:  First member (i.e., suture loop 70) inserted into bone (i.e., hole 66).
25[C] the second shaft facilitates moving the second member into the suture securing position.	[0047] (“This maneuver causes the outer shaft to move distally along the inner shaft by the interaction of the inner threads in the outer shaft 62 with the threads on threaded portion 39 of inner shaft 34, while also causing the screw threads to engage the sides of the hole and pull the screw into the hole. The inner shaft of the driver thus rotates without advancing further into the hole, while the outer shaft guides the insertion of the screw into the socket. In this manner, the screw advances along the hex section of the driver until the screw is fully installed to the position shown in FIGS. 18A and 18B, with sutures 62 or the graft 60 pinned and/or wound between the base and sidewall of socket 66 and interference screw 10.”); *see also* annotated Figure 18A, below:

’907 CLAIMS 25-26	ELATTRACHE
	 Second member (i.e., screw 10) inserted into suture securing position (i.e., into socket 66).
26. The assembly of claim 25, wherein the second shaft is moveable relative to the first shaft for moving the second member into the suture securing position.	*See* 25[C].

Claim 27 depends from claim 26 and requires that the “handle is at least partially moveable relative to at least the first shaft for moving the second shaft to cause the second member to move into the suture securing portion.” ElAttrache discloses an embodiment (Figures 8-9) in which the handle is “releasably attached” to first (inner) shaft 34 “by means of a collet 33 at the proximal end of the threaded section 39 being fittable within a connector 31 at the distal end of handle 32.”

Attaching the handle to the first shaft (and thus moving the handle relative to the first shaft) is necessary to rotate the handle such that the second (outer) shaft "move[s] distally along the inner shaft" and "guides the insertion of the screw into the [bone] socket" and ultimately the suture securing position discussed above in connection with claim 25. [0047]; *see also* McAllister ¶¶ 229-232. Even after the handle is attached to the first shaft, the handle is somewhat moveable relative to the first shaft given that the attachment occurs by means of collet 33 fittable within connector 31. [0036]; *see also* McAllister ¶¶ 229-232.

'907 CLAIM 28	**ELATTRACHE**
28. The assembly of claim 25, wherein one of the first shaft or the second shaft is at least partially received within the other of the second shaft or the first shaft.	[0046] ("[The driver is turned by rotating handle 32 and thus inner shaft 34 while preventing outer shaft 36 from rotating by holding thumb pad 41 in place during rotation of handle 32. This maneuver causes the outer shaft to move distally along the inner shaft ….The inner shaft of the driver thus rotates without advancing further into the hole, while the outer shaft guides the insertion of the screw into the socket."); *see also* Figs. 8-10.

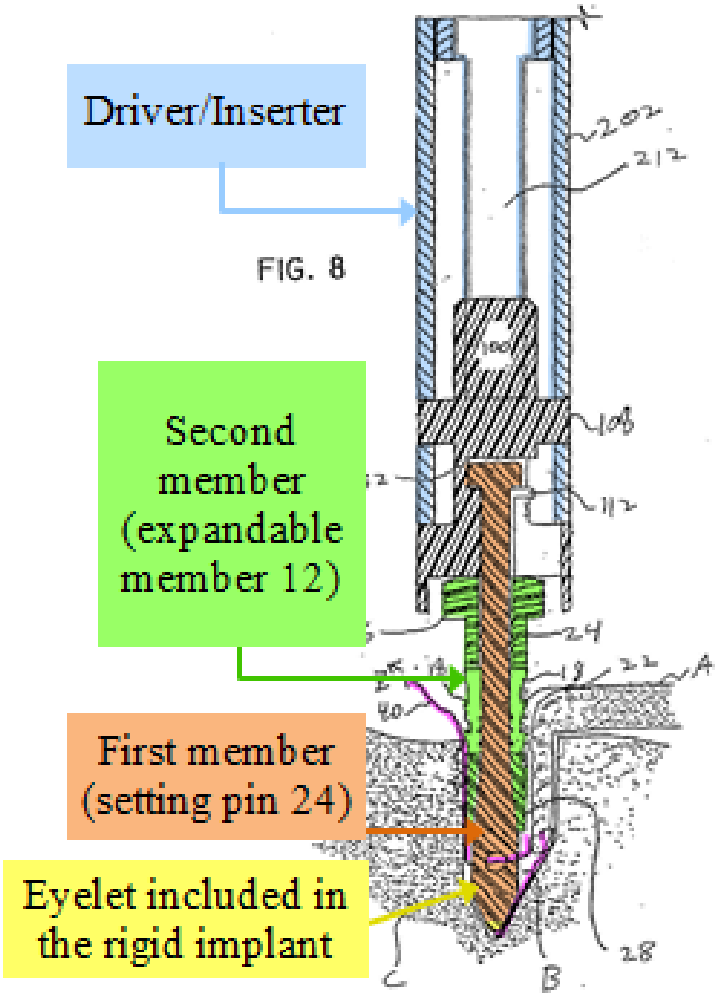
B. Martinek Anticipates Claims 1, 15-16, and 30

Martinek is prior art to claims 1, 15, 16, and 30 under pre-AIA §102(b) and post-AIA §102(a)(1) as explained above. Indeed, Martinek would be prior art unless the challenged claims were entitled to a priority date of June 22, 2001 or earlier. They are not, as detailed in Section VII. Indeed, Patent Owner has conceded that claims 15 and 30 are not entitled to priority before April 2003.

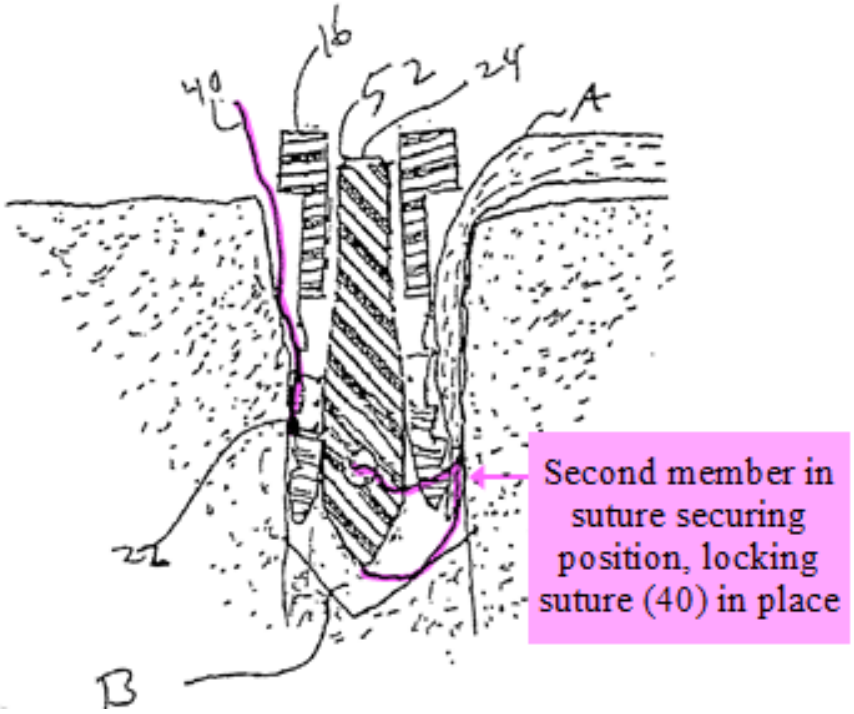
Martinek is identical in relevant respect to the Martinek patent that the Examiner cited during prosecution as anticipating all pending claims. As detailed in Section V.C, Patent Owner responded by wrongly asserting that the claims were entitled to priority based on the '263 provisional application.[13] Rather than analyzing the issue, the Examiner proceeded to a different reference.

Martinek anticipates claims 1, 15, 16, and 30 as detailed below. Martinek describes a suture securing assembling with a driver along with a rigid first member (in the form of setting pin 24, including eyelet 50) and an expandable second member:

[13] Unlike the claims challenged in this Section, none of the claims pending at the time were limited to the "rigid implant" species, which Patent Owner concedes is not entitled to priority before April 2003.



The expandable second member includes legs that expand outwardly “in response to the distal movement of the expandable member.” (page 2). The end result is that “the suture is secured between the expandable member and bone.” (page 18, claim 12). This is illustrated in Figure 9:



For these reasons, and in view of the additional disclosures summarized below, Martinek anticipates claims 1 and 16.

’907 CLAIM 1	MARTINEK
1[pr.] A suture securing assembly, comprising:	Page 1(“The present disclosure relates to knotless tissue and suture anchors and, more particularly to radially expandable anchors and methods for use of the expandable anchors.”)
1[A] an inserter including a distal end, a proximal end, and a longitudinal axis between the distal end and the proximal end;	Page 10 (“[I]mplantation apparatus 200 includes an elongated portion 202 extending distally from a handle portion 204.”)
1[B1] a first member including an eyelet oriented to thread suture across the longitudinal axis,	Page 8 (“***Setting pin 24***…includes an elongated shaft 26. … At its distal end portion, shaft 26 includes … bulbous portion 34 which includes a proximally facing camming surface 36 and distally facing beveled tip 38….A ***transverse bore 50 for receipt of suture 40*** is provided in bulbous portion 38.”)

’907 CLAIM 1	MARTINEK
1[B2] the first member being situated near the distal end of the inserter;	Page 8 (“A mounting member 100 is provided to mount tissue fastener 10 on an implantation apparatus and together therewith forms a disposable loading unit 150. Mounting member 100 is a tissue fastener mounting portion which is an independent structure for supporting… setting pin 24. The entire disposable loading unit 150 mounts to the distal end of the implantation apparatus, as described below.”)
1[B3] the first member being configured to be placed in bone; and	Page 13 (“As shown in FIG. 9, after actuation, ***setting pin 24*** is disposed inwardly of head 16 of expandable member 12….Actuation of the expandable member 12 secures and locks the suture in place ***within bore B***.” *See also id*. (referencing “bone C within bore B”).
1[C1] a second member situated near the distal end of the inserter,	Page 8 (“A mounting member 100 is provided to mount tissue fastener 10 on an implantation apparatus and together therewith forms a disposable loading unit 150. Mounting member 100 is a tissue fastener mounting portion which is an independent structure for supporting both ***expandable body 12*** of tissue fastener 10 … ***The entire disposable loading unit 150 mounts to the distal end of the implantation apparatus***, as described below.”)
1[C2] the second member being moveable by a portion of the inserter relative to the first member in a distal direction toward the eyelet into a suture securing position	Page 4 (“The expandable member is expanded by driving the expandable member distally relative to the inner member to thereby expand the expandable member into engagement with the suture against the bone.”), Page 11 (“[O]peration of trigger will drive expandable body 12 distally relative to setting pin 24 to thereby expand legs 18 radially outward.”), Page 12 (“Referring to FIGS. 8–10, actuation of implantation apparatus 200 drives a pair of pusher prongs 212 through access chamber 116 in mounting member 100 to engage head 16 of expandable member 12 and thus drive expandable member 12 distally relative to setting 24.”).

’907 CLAIM 1	MARTINEK
1[C3] where the second member locks suture in place.	Page 13 (“Actuation of the expandable member 12 secures and locks the suture in place within bore B….”)

’907 CLAIM 16	MARTINEK
16[pr.] A suture securing assembly, comprising:	See 1[pr]
16[A] a driver having a length and a width, the length being greater than the width, the length being parallel to an insertion direction;	See 1[A]
16[B1] a first member supported by the driver,	See 1[B2]
16[B2] the first member comprising an eyelet that is transverse to the length, the eyelet being configured to allow suture to be threaded through the eyelet transverse to the length	See 1[B1]
16[B3] the first member being situated to be moved in the insertion direction to be received in bone; and	See 1[B3]
16[C1] a second member supported by the driver,	See 1[C1]
16[C2] the second member being situated to be moved by a portion of the driver in the insertion direction relative to at least the first member into a suture securing position	See 1[C2]

’907 CLAIM 16	MARTINEK
16[C3] where the second member locks suture in place.	See 1[C3]

Martinek also anticipates claims 16 and 30 given that the “first member” (i.e., setting pin 24) includes “an expanded diameter bulbous portion,” with a “transverse bore 50.” (page 8):

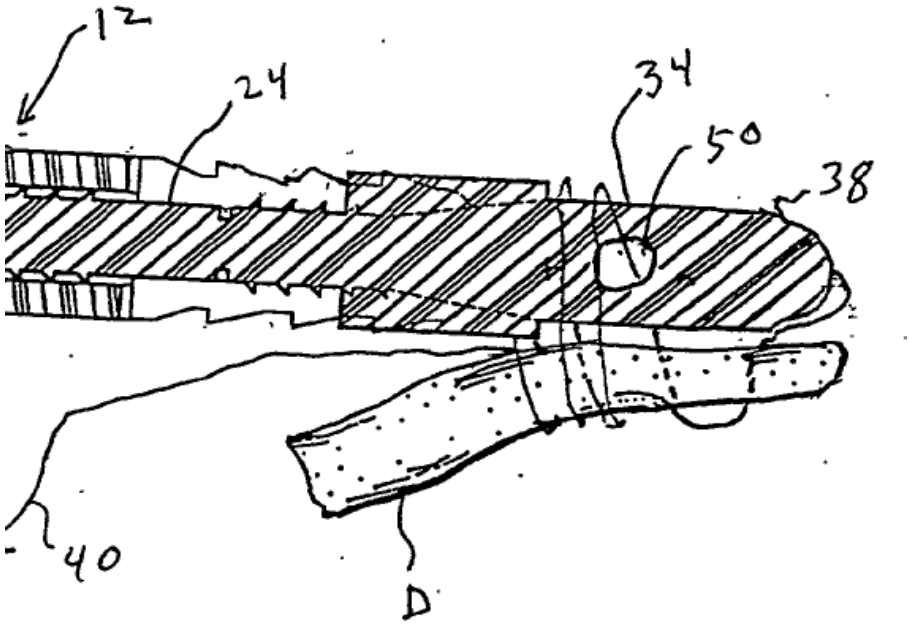


FIG. 12

A POSA would understand the setting pin is a rigid member defining an eyelet (i.e., bore 50). McAllister ¶¶ 265-266, 299-300.

X. CONCLUSION

Inter partes review of claims 1, 4, 8, 10, 11, 12, 15, 16, 18, 25-28, and 30 of the ’907 patent is requested.

Respectfully submitted,
Smith & Nephew, Inc. and ArthroCare Corporation

Dated: November 15, 2016

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CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6 (e)(4)

I certify that on November 15, 2016, I will cause a copy of the foregoing document, including any exhibits or appendices referred to therein, to be served via overnight courier (FedEx) upon the attorney of record for the patent at the following address:

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BIRMINGHAM, MI 48009

Date: November 15, 2016

/MacAulay S. Rush/
MacAulay S. Rush

CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24

Pursuant to 37 C.F.R. §42.24, the undersigned certifies that the foregoing Petition for *Inter Partes* Review contains 13,550 words excluding the table of contents, table of authorities, mandatory notices under §42.8, certificate of service or word count, or appendix of exhibits or claim listing.

Date: November 15, 2016

/s/ Michael N. Rader
Michael N. Rader