

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FUSION ORTHOPEDICS, LLC,
Petitioner,

v.

EXTREMITY MEDICAL, LLC,
Patent Owner.

Case IPR2023-00894
Patent 11,298,166

**PETITIONER SUR-REPLY IN OPPOSITION
TO REVISED MOTION TO AMEND**

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I. THE PROPOSED NEW CLAIMS ARE UNPATENTABLE.

A. Mazur anticipation and obviousness

1. Mazur clearly discloses interchangeability of hub features.

Patent Owner mischaracterizes Mazur (Ex. 1056) when it argues that Mazur's straight hub is inapplicable to Fig. 16A–E (Reply 2–3). Mazur discloses in paragraph [0094] that the straight hub may be used with the “above combinations.” Figs. 16A–E are introduced in paragraph [0055]. Patent Owner does not explain how disclosure in paragraph [0055] is not “above” paragraph [0094]. Nor does Patent Owner account for Mazur's disclosure in paragraph [0095] that Figs. 12A–20B are “further examples of the hubs discussed above,” which clearly include Figs. 11A–D.

Mazur also indicates unambiguously that the straight hub is applicable to the Figs. 16A–E embodiment. As Dr. Ledet acknowledges, Figs. 16A–E show the same embodiment as Figs. 12G–I. Ex. 2037 ¶ 34 (“the curved hub in Figures 16A–16E and *in situ* Figures 12G–12I”). Mazur discloses that Figs. 12G–I “show details of a curved hub 400 similar to hub 302 illustrated in FIGS. 11A–D.” Ex. 1056 ¶ [0096]. Consequently, Figs. 16A–E are describing a curved hub as shown in Figs. 11A–D. Inspection of drawings from each figure group immediately demonstrates that they are showing identical or similar hubs:

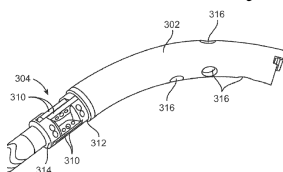


Fig. 11A (detail)

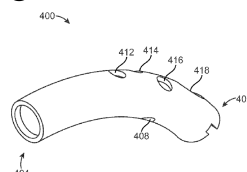


Fig. 12A (detail)

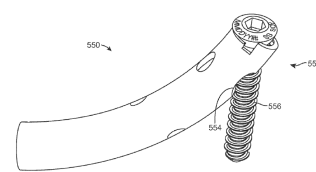


Fig. 16A (detail)

Patent Owner acknowledges that Mazur’s disclosure of a straight hub is applicable to Figures 11A–D. Reply 2 (“But ‘above combinations’ refers to combinations of components discussed earlier in paragraph [0094] with respect [to] ‘[d]evice 300,’ which is the embodiment in Figures 11A-11D”). Patent Owner’s subsequent assertion that Figs. 16A–E constitute a “different” embodiment (*id.*) thus directly contradicts both Mazur and Patent Owner’s earlier characterization of Mazur. By Patent Owner’s own admission, Figs. 16A–E are the same as Figs. 12G–I, which show a curved hub “similar” to Figs. 11A–D. Thus Figures 11, 12, and 16 are all showing the same or similar hubs.

Mazur even indicates when parts are *not* combinable, *e.g.*: “either screw 422 or 424 . . . but not both at the same time” (Ex. 1056 ¶ [0099]), thus underscoring the significance of occasions when Mazur points out interchangeability. The disclosure in paragraph [0094] indicates that the straight hub is applicable to Figs. 16A-16E.

2. Nothing recited in the proposed claims excludes an aperture formed with a side notch.

Patent Owner provides no basis to substantiate its argument that the recited first aperture excludes voids formed from the intersection of a tube opening and a side notch. Reply 3–4. Patent Owner refers to the “purpose of the claimed aperture” (*id.*) rather than to any structural limitation of that aperture recited in the proposed claims. Patent Owner does not point out where or how the proposed

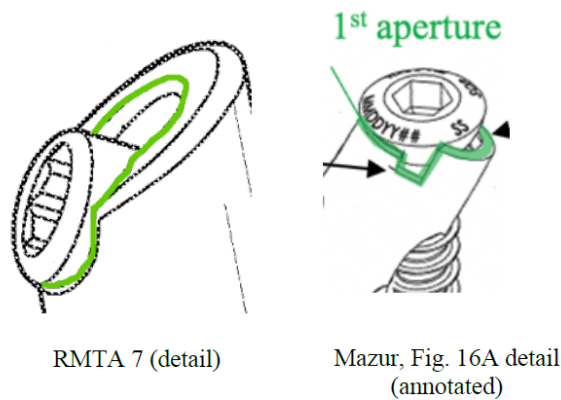
claims recite any “purpose” of the aperture.

Patent Owner argues that Mazur’s first member “does not engage with the notch” (Reply 4), but Patent Owner does not identify where the proposed claims recite a limitation requiring “engagement” of the first member with the aperture at both the first and second exterior surfaces. Mazur’s screw engages the hub rim.

Patent Owner’s belated attempt to redefine the proposed claims by importing the “purpose” of the aperture into the claim both violates claim construction principles (*e.g.*, *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004)) (“it is important not to import into a claim limitations that are not a part of the claim.”) and sandbags Petitioner by raising a new issue on reply. *See* 37 C.F.R. § 42.23(b) (“A reply may only respond to arguments raised in the corresponding opposition”). Patent Owner originally took the position that no terms in the proposed claims require any construction. RMTA (Paper 44), 15–16. Patent Owner cannot use its Reply to retrofit a new construction in an attempt to circumvent the prior art Petitioner identified. It was for Patent Owner to propose any relevant claim constructions in its revised motion so that Petitioner would have a reasonable opportunity to oppose those constructions with expert testimony and to identify prior art in light of those constructions.

Nor does Patent Owner explain how or why an aperture formed from the intersection of a tube opening and a sidewall notch fails to fulfill the functional

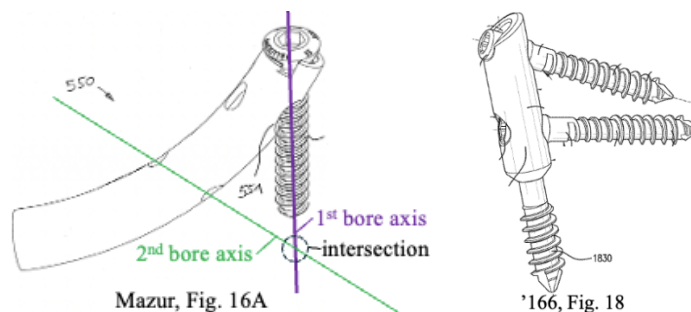
requirements it now urges. For example, Patent Owner argues that “the first member must fit through the aperture if it is to fit through the bore” (Reply 3), but Mazur’s first member (screw 556) manifestly fits through its aperture. It does not occupy the entire aperture, but neither does the ’166 patent first member:



Opposition to RMTA (Paper 49), 2.

3. Mazur discloses intersection of the first bore axis and the second bore axis outside the third member (proposed claim 24)

Patent Owner appears to infer co-planarity of the first and second bore axes, and their intersection, from the illustration of Figure 18. Mazur’s illustration of the axes’ intersection is at least as good as the disclosure in the ’166 patent in this regard:



4. Patent Owner argues bodily incorporation, contradicts Mazur, and relies on unsupported expert say-so.

Patent Owner’s argument that Mazur lacks motivation to combine the embodiments of Figure 7 and Figures 16A-16E due to the “differences between the straight hub embodiment . . . and the curved hub embodiment” (Reply 5), amounts to an impermissible bodily incorporation of one embodiment into another.

“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference[.]” *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (quoting *In re Keller*, 642 F.2d 413, 425 (C.C.P.A. 1981)). Instead, the question is whether “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention[.]” *Id.* (quoting *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007)); *see also In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) (“It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements.”); *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc) (explaining that whether one reference can be incorporated in another is “basically irrelevant” since the test for obviousness is “not whether the references could be physically combined but whether the claimed inventions are rendered obvious by the teachings of the prior

art as a whole”).

Patent Owner dismisses Petitioner’s argument as a “conclusory statement” (Reply 5), but Petitioner explained how and where Mazur describes the interchangeability of parts and invites the POSA to modify the embodiments as the context requires. Opposition 3, 1st full para.

Patent owner argues that the Figs. 1–9 embodiment is “specifically dimensioned and configured” for the proximal ulna while the Figs. 16A–E embodiment is designed for the distal radius (Reply 6), but Mazur itself expressly contradicts this argument. Mazur discloses in paragraph [0088] that the Figs. 1–9 embodiment can be “used in many locations within the body” including “the radial styloid process (distal); [and] on the ulna, at the head of the ulna (proximal).” Ex. 1056 ¶ [0088], ll. 2–3, 9–11. Mazur thus discloses that both embodiments can be used in the distal radius.

Although Dr. Ledet opines that a “POSITA would know that a straight hub could not be used in the distal radius because it would have to be inserted through the articular surface of the distal radius, thereby completely disrupting the wrist” Reply 5 (citing Ex. 2037 ¶ 34), he provides no underlying facts or data to support his contention. His assertion in this regard is therefore entitled to little or no weight. *See* 37 C.F.R. § 42.65(a).

Dr. Ledet also opines that the embodiments differ in that the Figs. 1–9 embodiment includes grippers whereas the Figs. 16A–E embodiment does not.

Reply 5 (citing Ex. 2037 ¶ 32). But, once again, Mazur expressly contradicts this argument. Mazur discloses that, in the Figs. 1–9 embodiment, “fasteners without grippers may be used to secure device 100 within bone 106.” Ex. 1056 ¶ [0081], ll. 15–16. The embodiments therefore do not differ in the manner Dr. Ledet claims.

Patent Owner’s arguments do not undermine Petitioner’s showings of anticipation and obviousness over Mazur because Patent Owner misapplies claim construction principles, fails to account for evidence in Mazur contradicting its positions, indulges in bodily incorporation arguments, and relies on conclusory expert testimony.

B. Cognet obviousness combinations

1. It is unnecessary to reiterate arguments already of record.

The Cognet unpatentability arguments were fully briefed in the case-in-chief and are well known to the parties and the Board. Petitioner’s Opposition to the RMTA focuses on the new proposed limitation in the interest of compact briefing, just as did Patent Owner’s RMTA. Patent Owner does not explain how this mutual efficient use of resources offends the interests of justice (Reply 6–9).

2. Zhang discloses an aperture on top and side surfaces of the third member.

Patent Owner’s criticism of Petitioner’s Interpreted Model is irrelevant because Petitioner’s reliance on Zhang is based fully on Zhang’s figure and

specification as published. The Model was offered as an interpretive aid to show how a POSA would have understood Zhang's disclosure. Patent Owner does not explain how Petitioner's unpatentability argument is undermined by the "assumptions" Mr. Dominguez made to develop the Model from Zhang's disclosure.

Instead, Patent Owner argues two points: that (a) Zhang's nail tail is "bulbous" or "spherical" (Zhang describes it as "hemispherical," Ex. 1058, 4:33) and therefore lacks two surfaces (Reply 10); and (b) Zhang's groove does not form part of the aperture for reasons analogous to Patent Owner's discussion of Mazur's sidewall notch. *Id.* Patent Owner's second argument lacks basis in the proposed claims, as discussed above.

As to the first argument, Zhang's figure discloses a flat portion on the nail tail (top surface), thereby distinguishing a top surface from a side surface:

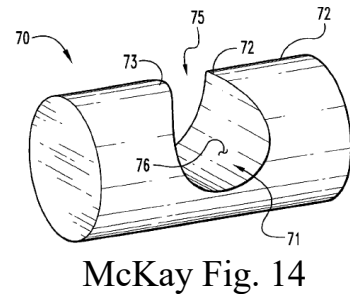
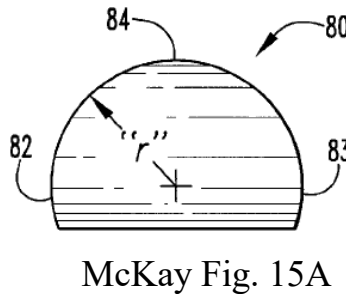
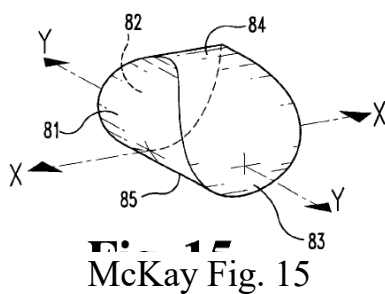


Zhang, Figure detail (annotated)

Zhang shows the screw traversing the flat and curved portions and thus discloses an aperture on the top and side exterior surfaces.¹

¹ Dr. Ledet proposes alternative Zhang models. Ex. 2037 ¶ 44. Patent Owner does not cite them in its Reply, but they each show a flat top separated by an edge from curved sides. Dr. Ledet thus acknowledges that Zhang discloses a flat top.

Patent Owner also fails to explain how or why the proposed claims require a discontinuity between the top and side exterior surfaces. That is, Patent Owner has not identified any limitation in the proposed claims that requires, for example, an edge between the surfaces. The record in this case demonstrates that the prior art at least sometimes identifies the top and sides of a curved shape as distinct surfaces. McKay (Ex. 1044) discloses member 80 having “top surface 84” and “end surface 83” which are smoothly continuous with one another and which, when inserted into channel 71, form a “uniform exterior surface”:



Ex. 1044, 11:31–39. Patent Owner offers no claim construction or other justification, therefore, for regarding Zhang’s hemispherical structure as lacking a “top exterior surface” and a “side exterior surface.”

3. The critique of Cognet’s bore angle is another bodily incorporation argument.

Patent Owner’s argument that a POSA would not know how to prevent Cognet’s screw from “protrud[ing] through the articular surface” when changing Cognet’s bore angle (Reply 11-12) is merely another exercise in impermissible bodily incorporation. As Petitioner explained, Cognet itself instructs the POSA to

modify multiple dimensions “[d]epending on the anatomical variations of the patients being operated on.” Opposition 19–20. Petitioner relies on Cognet not for the exact dimensions shown in Fig. 1, but rather as evidence of what the POSA knew about design of bone implant devices at the time the ’166 patent was filed. Patent Owner does not explain why its POSA, an engineer with “at least three years of experience with implant devices used for internal fixation of bones” and an “appreciation for orthopaedic fusion techniques and the medical issues and concerns faced by a doctor/surgeon [] when performing operations to implant orthopaedic devices” (Ex. 2012 ¶ 32, reaffirmed at Ex. 2037 ¶ 11) would not have understood how to implement Cognet’s teachings safely and effectively.

4. Gooch shows a first aperture through the top surface and the side surface.

Patent Owner’s argument that Gooch Fig. 20 might disclose a bone anchor with a side-only bore (Reply 12) is an unreasonable interpretation of Gooch because Gooch already discloses exactly that configuration in Fig. 18. Ex. 1063 ¶ [0047] (“the screw . . . has been inserted into the anchoring mechanism(s) at a side location”). To interpret Fig. 20 as re-depicting the same arrangement as Fig. 18 but from a point of view that obscures the configuration introduces unjustified redundancy and confusion into Gooch.

Patent Owner argues that the POSA would have interpreted Gooch Fig. 20 as

either depicting an anchor having a screw aperture on both the top and side exterior surfaces or else on the side exterior surface only. Reply 12 (citing Ex. 2037 ¶ 54). But if the POSA appreciated that Gooch disclosed these two possibilities, then the POSA would have “at once envisaged” both possibilities, thereby indicating that Gooch meets the limitation. *See In re Petering*, 301 F.2d 676, 681 (C.C.P.A. 1962) (reference disclosing limited class meets limitation where one of ordinary skill would “at once envisage” each member of the limited class).

II. CONCLUSION

The Board should deny the revised motion to amend.

Respectfully submitted,
Fusion Orthopedics, LLC

By:

Dated: September 3, 2024

/Jennifer R. Brinkerhoff/

Jennifer R. Brinkerhoff

Reg. No. 78,696

Counsel for Petitioner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6, I certify that on the date listed below, a copy of this paper was served on Abhishek Bapna (abapna@kelleydrye.com), Vincent M. Ferraro (vferraro@kelleydrye.com), and Michael Zinna (mzinna@kelleydrye.com).

Dated: September 3, 2024

/Jennifer R. Brinkerhoff/

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