

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OSTEOMED LLC,
Petitioner,

v.

STRYKER EUROPEAN OPERATIONS HOLDINGS LLC,
Patent Owner.

IPR2022-00487
Patent 9,078,713 B2

Before HYUN J. JUNG, SUSAN L. C. MITCHELL, and
MICHAEL A. VALEK, *Administrative Patent Judges*.

VALEK, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

OsteoMed LLC (“Petitioner”) filed a Petition (Paper 1, “Pet.”), seeking *inter partes* review of claims 32–39 of U.S. Patent No. 9,078,713 B2 (Ex. 1001, “the ’713 patent”). Stryker European Operations Holdings LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

In its Preliminary Response, Patent Owner requests that the Board apply discretion to deny institution under 35 U.S.C. §§ 325(d) and 314(a). *See* Prelim. Resp. 7–17. Patent Owner also raises certain challenges to the merits of the grounds in the Petition. *Id.* at 17–50.

After considering the arguments and evidence presented at this stage of the proceeding, we are persuaded that Petitioner has demonstrated a reasonable likelihood that it would prevail with respect to at least one claim challenged in the Petition. *See* 35 U.S.C. § 314(a). We also decline to exercise discretion to deny institution under 35 U.S.C. §§ 325(d) or 314(a). Accordingly, we institute *inter partes* review.

II. BACKGROUND

A. *Real Parties in Interest*

Petitioner identifies OsteoMed LLC, Acumed LLC, and Colson Medical, LLC as real parties in interest. *See* Pet. ix. Petitioner additionally identifies Marmon Holdings, Inc. and Berkshire Hathaway Inc. as “parties that may be relevant to the determinations.” *Id.* Patent Owner identifies Stryker European Operations Holding LLC, Stryker Corporation, and Howmedica Osteonics Corp. *See* Paper 5, 2.

B. Related Matters

Petitioner and Patent Owner identify *OsteoMed LLC v. Stryker Corporation.*, 1:20-cv-06821 (N.D. Ill.) as a related matter. Pet. x; Paper 5, 2–3. Patent Owner additionally identifies *OsteoMed LLC v. Wright Medical Technology, Inc.*, 1:20-cv-01621 (D. Del.). Paper 5, 2–3.

Petitioner also identifies IPR2022-00486 and IPR2022-00488, which were filed concurrently with the Petition here and involve the same parties. Pet. x.

C. The '713 Patent

The '713 patent issued on July 14, 2015, and is a continuation of an application filed on October 2, 2009. Ex. 1001, code (63).

The '713 patent relates to “a plate fixed between two bone parts by way of screws engaged in holes formed in the thickness of said plate” that is configured to bring “the two bone parts into a compressive position.” Ex. 1001, Abstr. Figure 3 of the '713 patent provides a perspective view of this plate and is reproduced below.

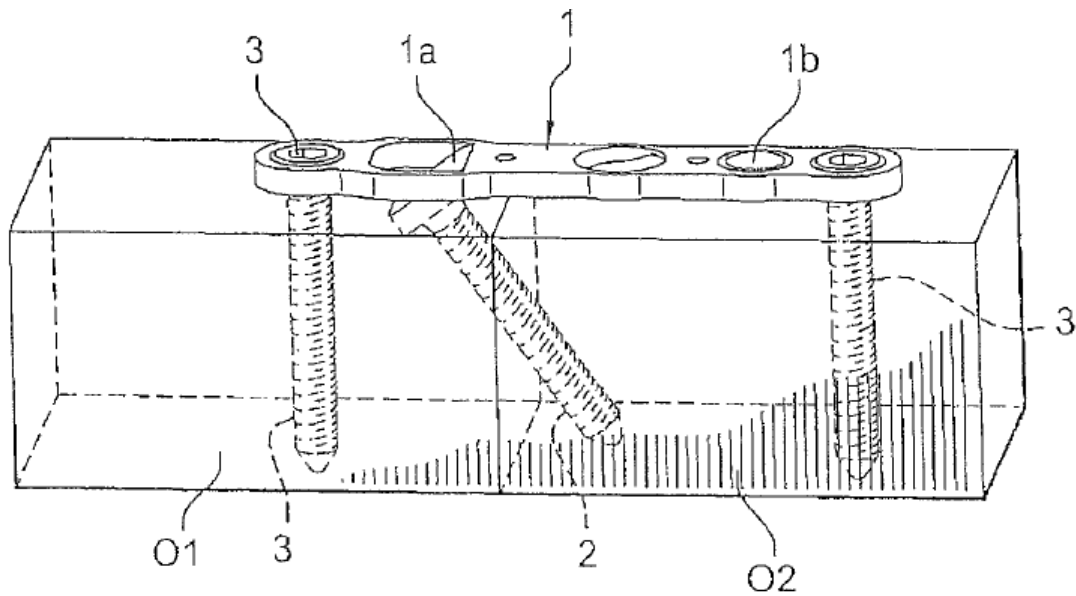


Fig. 3

Figure 3 depicts a plate 1 positioned between two bone parts O1 and O2. Ex. 1001, 2:16–17. Screws 3 are set through holes in the plate to attach it to bone parts O1 and O2. *Id.* at 2:33–35. A third screw 2 is positioned at an angle through a hole in tab 1a such that it extends through both parts O1 and O2. *Id.* at 1:64–66, 2:28–29. According to the Specification, engaging screw 2 in this manner “place[s] the fracture in compression.” *Id.* at 2:28–29.

D. Challenged Claims

The Petition challenges claims 32–39. Claim 32 is the only independent claim and illustrative of the challenged claims. Claim 32 is reproduced below with the same bracketed annotations used in the Petition to identify particular limitations.

32. [32Pre] A method of fusing a joint, the method comprising:
[32a] spanning first and second bones separated by a joint with a bone plate, such that a first hole of the bone plate is

aligned with a first bone of the joint and a second hole of the bone plate is aligned with a second bone of the joint;

[32b] inserting a first fixation member through the first hole of the plate and into the first bone of the joint;

[32c] inserting a second fixation member through the second hole of the plate and into the second bone of the joint;
and

[32d] inserting a third fixation member through a third hole in the plate, into the first bone, across the joint, and into the second bone so that a free end of the third fixation member, not attached to any portion of the plate, resides in the second bone and [32e] a head of the third fixation member is seated in the third hole, [32f] the third hole being angled relative to a longitudinal axis of the plate through a thickness of the plate, [32g] wherein the third fixation member is the only fixation member extending across the joint.

Ex. 1001, 5:1–19.

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §¹	Reference(s)/Basis
32, 33, 36, 37	103(a)	Slater ²
34, 35, 39	103(a)	Slater, Myerson ³
32, 33, 38	103(a)	Slater, Zahiri ⁴

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. § 103 that became effective after the filing of the applications to which the ’713 patent claims priority. Therefore, we apply the pre-AIA version of § 103.

² WO 2007/131287 A1, published November 22, 2007 (Ex. 1004) (“Slater”).

³ US2006/0241608 A1, published October 26, 2006 (Ex. 1008) (“Myerson”).

⁴ US 8,187,276 B1, filed September 26, 2006 and issued May 29, 2012 (Ex. 1007) (“Zahiri”).

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
32, 33, 36–39	103(a)	Arnould, ⁵ Zahiri
34, 35	103(a)	Arnould, Zahiri, Myerson

Petitioner further relies on the declaration of Michael Sherman (Ex. 1002) submitted with the Petition.

Before turning to our analysis of these grounds, we address Patent Owner’s arguments that, notwithstanding the merits of Petitioner’s grounds, we should exercise discretion to deny institution under 35 U.S.C. §§ 325(d) and 314(a).

III. DISCRETION UNDER 35 U.S.C. § 325(d)

Patent Owner argues “[t]he Board should exercise discretion and deny institution under 35 U.S.C. § 325(d) because . . . *three of the four* references relied upon were previously presented to the Patent Office during the prosecution of the ’713 patent.” Prelim. Resp. 1. Patent Owner also contends that Petitioner “failed to address the Board’s precedential decision in *Advanced Bionics*,^[6] which requires Petitioner to demonstrate that the Examiner erred in a manner material to the patentability of the challenged claims.” *Id.*

Section 325(d) provides that the Director may elect not to institute a proceeding if the challenge to the patent is based on prior art or arguments previously presented to the Office. The statute states, in pertinent part, “[i]n

⁵ EP 1,897,509 B1, published December 3, 2008 (Ex. 1005). Exhibit 1006 is a certified translation of EP 1,897,509 B1, which we cite and refer to herein as “Arnould.”

⁶ *Advanced Bionics, LLC v. MED-EL Electromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 10 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”).

determining whether to institute . . . , the Director may take into account whether, and reject the petition . . . because, the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d).

The question of whether the petition presents art or arguments that are “the same or substantially the same” as art or arguments previously presented to the Office is a factual inquiry, which may be resolved by reference to the factors set forth in *Becton, Dickinson*.⁷ The precedential section of that decision sets forth the following non-exclusive factors (“*BD* Factors”) for consideration:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, 17–18.

Advanced Bionics sets out a two-part framework for analyzing these factors. In the first part, we consider factors (a), (b), and (d) to determine

⁷ *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR 2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (“*Becton, Dickinson*”).

whether the art and arguments presented in the petition are the same or substantially the same as those previously presented to the Office. *Advanced Bionics*, 8–10. “If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office,” then we move on to the second part of the analysis to determine “whether the petitioner has demonstrated a material error by the Office” in view of factors (c), (e), and (f). *Id.*

A. Advanced Bionics Part One

Petitioner asserts that the challenged claims “have not been considered in view of any of the prior art relied upon in the asserted grounds of this Petition.” Pet. 7. That assertion is plainly incorrect.

Slater, Myerson, and Arnould appear in the cited references section on the face of the ’713 patent. Ex. 1001, code (56). As Patent Owner points out, Slater and Myerson were submitted by the Applicant in an Information Disclosure Statement (IDS), and the Examiner confirmed that they were considered during examination. Prelim. Resp. 8–9 (citing Ex. 1003, 12, 16, 176, 179). Arnould was also identified in an IDS that was marked as considered by the Examiner. *See* Ex. 1003, 179–180.

Slater and Myerson are the only references asserted for the first two grounds in the Petition. Slater is also the primary reference for Petitioner’s third ground, which is additionally combined with Zahiri. While Zahiri was not considered during prosecution, Petitioner relies on Zahiri only for limitations in two of the dependent claims and as additional evidence for certain limitations in claim 32 that Petitioner contends are already taught by Slater. *See* Pet. 43–55 (ground 3). Accordingly, we agree with Patent Owner

that Petitioner’s Slater-based grounds, which collectively reach all of the challenged claims, present the same or substantially the same art as that previously considered by the Office. *Advanced Bionics*, 7–8 (which states that “[p]reviously presented art includes . . . art provided to the Office, such as on an Information Disclosure Statement (IDS)”).

It is less clear whether the same art or arguments for the Petition’s two Arnould-based grounds were previously considered by the Examiner. While the Petition relies on an English language translation of Arnould, the original reference is in French. The row of the IDS in which Arnould was identified during prosecution of the ’713 patent states “English language translation of Abstract only.” Ex. 1003, 179. In contrast, the Petition primarily relies on Arnould’s figures and specification. *See generally* Pet. 62–88 (discussing the teachings in Arnould). This suggests the Examiner may not have been able to consider the portions of Arnould on which Petitioner’s challenges are based. In any event, we need not resolve this issue because our determination that the Slater-based grounds present the same or substantially the same art as that previously considered by the Office is sufficient, on the facts of this case, to proceed to the second part of the *Advanced Bionics* framework.

B. Advanced Bionics Part Two

Regarding *BD* Factor (c), we note that none of Slater, Myerson, or Arnould were the basis for any of the Examiner’s rejections during prosecution. Thus, the extent to which the Examiner considered the teachings from these references that Petitioner relies upon is not evident. Instead, it appears the Examiner placed greater emphasis on a different

reference, Aikins,⁸ which was cited in anticipation and obviousness rejections of the then-pending claims. *See* Ex. 1003, 131–138.

Petitioner provides a brief overview of the prosecution history, explaining that in response to rejections over Aikins, the challenged claims were amended to “add the claim element ‘so that a free end of the third fixation member, *not attached to any portion of the plate*, resides in the second bone and a head of the third fixation member is seated in the third hole” to claim 32. Pet. 2–3. According to Petitioner, “[b]ased on the proposed amendment, Applicant and Examiner reached an agreement on allowable subject matter, and claims 32–39 were allowed.” *Id.* at 4. The record supports Petitioner’s explanation that the challenged claims were allowed based on the amendment to add the free end limitation, i.e., limitation [32d]. *See* Ex. 1003, 208 (Applicant’s Response arguing that, unlike amended claim 33, which issued as claim 32, the end of the Aikins’s third fixation member “attaches to blade hole 98 in blade 76” of Aikins’s plate), 216 (Notice of Allowance mailed following Applicant’s Response).

Patent Owner does not dispute Petitioner’s explanation of the prosecution history, but contends we should exercise discretion to deny the Petition because Petitioner “did not . . . assert material error, did not attempt to address the *Becton, Dickinson* factors, and did not provide any analysis under *Advanced Bionics*.” Prelim. Resp. 12.

We disagree. Based on the current record, Petitioner has shown that both Slater and Arnould disclose the use of a third fixation member extending through a hole in a bone plate and into a first and second bone

⁸ US 2003/0040748, published February 27, 2003 (Ex. 1009) (“Aikins”).

such that its free end resides in the second bone and is not attached to any portion of the plate, i.e., the limitation added by the Patent Owner to secure issuance of the '713 patent. Pet. 19–20, 66–67 (addressing limitation [32d]). That disclosure undermines the arguments the Applicants made to overcome Examiner's rejections based on Aikins. *See* Ex. 1003, 208. Thus, while it is true that the Petition does not expressly refer to this as a “material error” within the context of addressing *Advanced Bionics* and the *BD* factors, Petitioner's analysis regarding the merits of its grounds, along with its explanation of the prosecution history, is sufficient to demonstrate that the Examiner materially erred by not recognizing the relevance of Slater and Arnould's teachings.

For these reasons, we determine that Petitioner has sufficiently demonstrated a material error, and therefore decline to exercise discretion to deny institution of *inter partes* review under 35 U.S.C. § 325(d).

IV. DISCRETION UNDER 35 U.S.C. § 314(a)

Patent Owner argues “[e]ven though the present Petition is not technically a follow-on petition, the Board has the discretion to deny institution under § 314(a) due to Petitioner's gamesmanship in filing this Petition based on Patent Owner's earlier-filed (and recently instituted) IPRs of Petitioner's patents.”⁹ Prelim. Resp. 13. According to Patent Owner, “many of the rationales behind the *General Plastic*¹⁰ factors apply to

⁹ *See* IPR2021-01450, IPR2021-01451, IPR2021-01452, IPR2021-01453 (all instituted in March 2022).

¹⁰ *General Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) (precedential as to § II.B.4.i) (“*General Plastic*”).

Petitioner's actions in this case," and therefore these factors "weigh in favor of the Board exercising its discretion to deny institution under § 314(a)." *Id.*

We do not agree that the *General Plastic* factors are applicable here. This is the first and only IPR petition that has been filed challenging any of the claims of the '713 patent. *See* Pet. x; Paper 2–3 (identifying no other IPRs challenging the '713 patent). Thus, the concern over "the potential for abuse of the review process by repeated attacks" on the same patent that fuels the *General Plastic* analysis is not implicated here. *See General Plastic*, 17. As for the *General Plastic* factors themselves, the text of those factors makes clear they are a framework for assessing whether to exercise discretion to deny a follow-on petition, i.e., a "second petition" challenging "the same claims of the same patent" that were the subject of a "first petition." *Id.* at 16 (factors 1–5). Thus, Patent Owner's attempt to apply those factors in this case, where the only earlier-filed petitions Patent Owner identifies are those that it filed against entirely different patents owned by Petitioner, is misplaced.

At bottom, Patent Owner's complaint appears to be that Petitioner has taken some of the same references and arguments that Patent Owner first advanced against Petitioner's patents in other proceedings and is now using them to challenge the patentability of some of Patent Owner's own patent claims in this proceeding. *See* Prelim. Resp. 14–15 (arguing that after reviewing Patent Owner's IPR petitions against Petitioner's patents and Patent Owner's contentions in a district court litigation involving Patent Owner's patents, "Petitioner abandoned its own invalidity positions and used Patent Owner's invalidity positions as a roadmap for drafting this Petition"). But, at least on the facts before us here, we see nothing wrong with that

approach¹¹ and certainly nothing that would warrant the exercise of discretion under 35 U.S.C. § 314(a) to deny institution of an otherwise meritorious petition.

V. ANALYSIS OF THE ASSERTED GROUNDS

A. *Legal Standards*

A claim is unpatentable for obviousness if, to one of ordinary skill in the pertinent art, “the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

¹¹ Patent Owner also asserts “Petitioner presents arguments relating to its primary references Slater and Arnould that are inconsistent with the arguments it presented in its earlier-filed POPRs [in the IPRs challenging Petitioner’s patents] and its previous arguments to the Patent Office.” Prelim Resp. 16–17. To the extent Patent Owner believes Petitioner’s arguments in those proceedings undermine the evidence Petitioner presents in this proceeding, it will have the opportunity to address such issues in its subsequent papers at trial.

B. Level of Ordinary Skill in the Art

Relying on the testimony of its declarant, Mr. Sherman, Petitioner contends that a person of ordinary skill in the art (POSITA) of the '713 patent

as of October of 2009, had, among other attributes, a Bachelor's Degree in mechanical engineering, biomedical engineering, biomechanics or similar discipline and had approximately three years of experience with orthopedic implant design. Such a POSITA would have had knowledge of design considerations known in the industry and would have been familiar with then-existing products and solutions. A POSITA would have been familiar with orthopedic implants, bone plates, and intramedullary implants.

Pet. 6 (citing Ex. 1002 ¶¶ 55–57).

Patent Owner does not specifically dispute any aspect of Petitioner's description of a POSITA, but contends that

[i]n the recently-instituted IPRs involving Petitioner's own patents relating to the same bone plate technology, the parties and the Board agreed that a POSITA at the time of the invention would be an individual having at least a bachelor's degree in engineering with at least two years of experience in the field, such as experience with the design of surgical implants, or a clinical practitioner with a medical degree and at least two years of experience as an orthopedic surgeon. For purposes of consistency, the same level of ordinary skill . . . should be used here.

Prelim. Resp. 6 (internal quotations omitted).

At this stage in the proceeding, we find Petitioner's description of the level of ordinary skill in the art to be sufficiently supported by the record and apply it for purposes of this decision. That said, we do not perceive any meaningful difference between the parties' descriptions of the level of

ordinary skill in the art. To the extent either party thinks otherwise, it would be helpful if that party would specifically identify that difference in their subsequent papers and explain how it impacts the obviousness questions before us here.

C. Claim Construction

Neither party identifies any claim term for construction. Pet. 6; Prelim. Resp. 6. We agree that no express claim construction is necessary at this stage of the proceeding. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms that . . . are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

D. References Relied Upon

i. Slater

Slater is a publication of a PCT application filed May 17, 2007, and published November 22, 2007. Ex. 1004, codes (22), (43). Petitioner asserts that Slater qualifies as prior art under 35 U.S.C. § 102(b). Pet. 9. At this stage, Patent Owner does not dispute that Slater is prior art to the challenged claims.

Slater describes “an ankle fusion plate for fusion of the anterior ankle” with “openings in the plate [that] receive fixation screws allowing compression of bones being fused.” Ex. 1004, 1:5–9.¹² According to Slater,

¹² All citations to Exhibit 1004 refer to the page numbers in the original document.

the plate may be fixed to the ankle “in a prescribed manner so that the orientation of the screws provide[s] optimal compression and bone fusion.” *Id.* at 6:26–28.

Figure 1 of Slater, reproduced below, “shows a side elevation view” of this plate “attached via fixation screws to an abbreviated ankle joint.” *Id.* at 9:28–30.

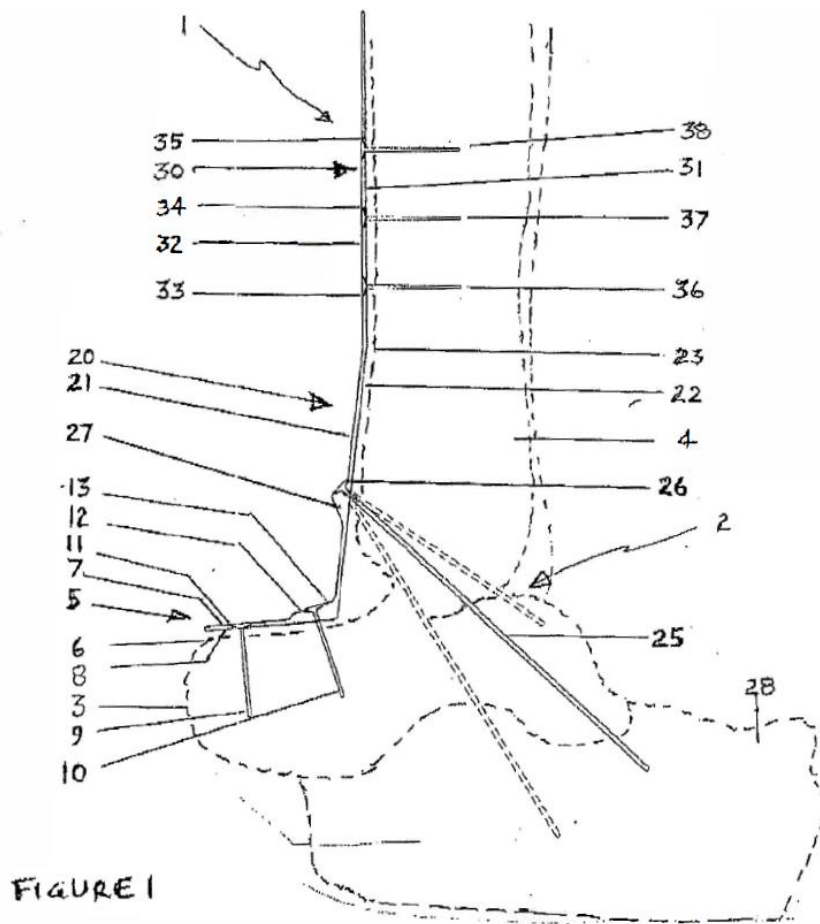


Figure 1 above depicts fusion plate 1 “attached to an ankle joint 2 opposing the Talus bone 3 and Tibial bone 4.” Ex. 1004, 11:2–4. The plate has a portion 5 opposing the anterior surface 6 of the talus with fixation screws 9 and 10 passing through holes in portion 5 and engaging the talus bone. *Id.* at 11:5–10. The plate has a portion 30 “preferably disposed normal or near

normal to the plane of portion 5” with openings that receive screws 36, 37, and 38 to engage the tibia bone. *Id.* at 11:28–32. Formation 27 and opening 26 are disposed in portion 20 of the plate, which opposes the anterior surface of the tibia. *Id.* at 11:18–27. Fixation screw 25 passes through formation 27 and opening 26. *Id.* “Formation 27 is configured so that screw 25 is implanted at an angle within a predetermined allowable angular range,” preferably “within a 40 degree arc.” *Id.*

ii. Arnould

Arnould is a European patent filed September 10, 2007 and published on March 12, 2008. Ex. 1006, codes (22), (43). Petitioner asserts that Arnould qualifies as prior art under 35 U.S.C. § 102(b). Pet. 9. At this stage, Patent Owner does not dispute that Arnould is prior art to the challenged claims.

Arnould describes “an arthrodesis plate for a metatarsal-phalangeal joint, particularly for the joint between the first metatarsal and the first phalanx of the big toe” and “a surgical method for placing such an arthrodesis plate.” Ex. 1006 ¶ 1.

Figure 1 of Arnould, reproduced below, “depicts an arthrodesis plate 1 for a joint between the first metatarsal M and the first phalanx P of the big toe of a left foot.” Ex. 1006 ¶ 11.

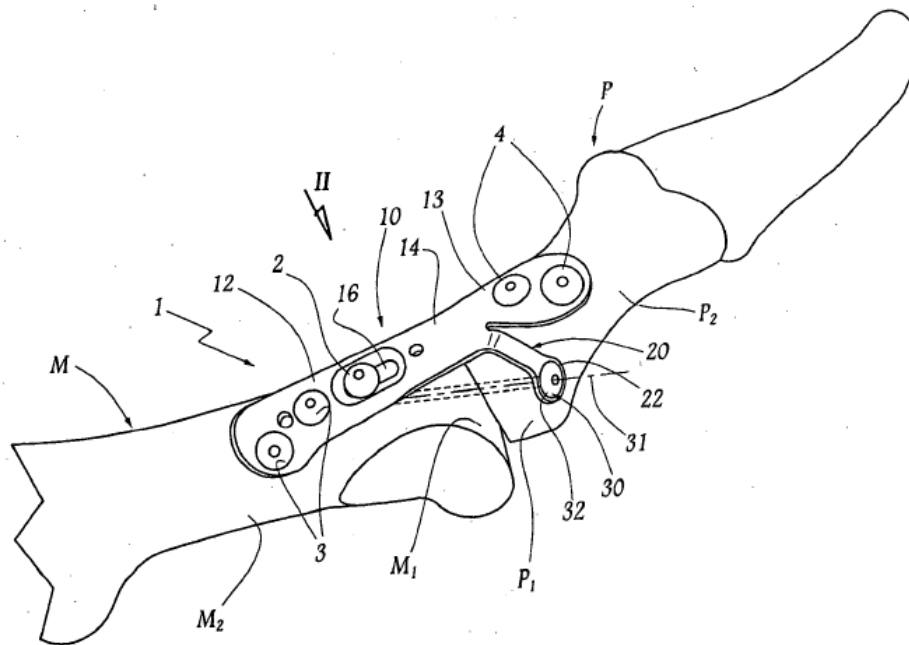
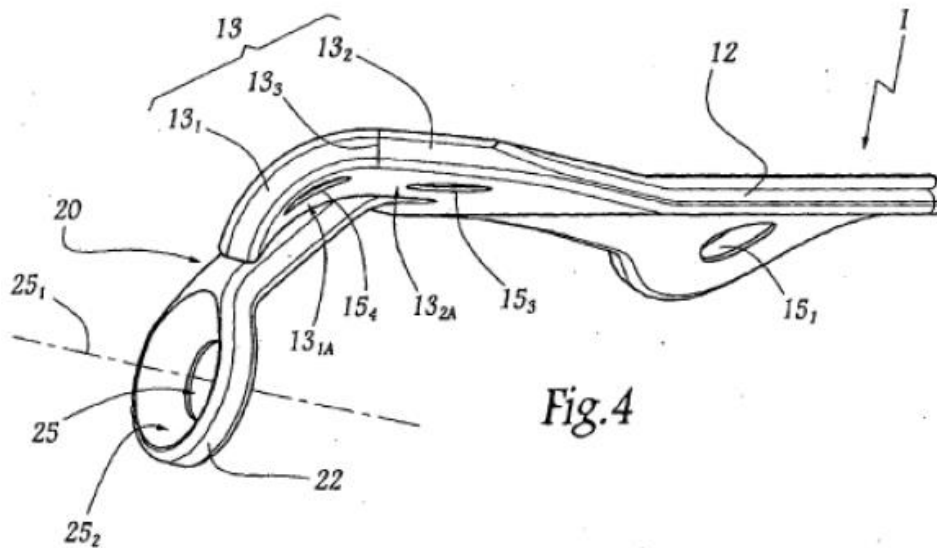


Fig. 1

Figure 1 shows screws 2 and 3 extending through holes in plate 1 to “secure the plate body 10 to the metatarsal M.” *Id.* ¶ 33. “Before or after securing the plate body 10 in relation to the metatarsal M, additional screws 4 are inserted into the holes 15₃ and 15₄ in order to secure the phalangeal portion 13 to the phalanx P.”¹³ *Id.* ¶ 34. Screw 30 is inserted through hole 25 “following a direction of insertion inclined in relation to the plate body 10 at an angle . . . chosen by the surgeon so that this screw, during its screwing, successively passes through the phalangeal epiphysis P₁ and the metatarsal epiphysis M₁” to join those bones. *Id.* ¶ 32; *see also id.* ¶ 6 (explaining that this screw “will extend both through the bone material of the phalanx and into the bone material of the metatarsal”).

¹³ The labels for holes 15₃ and 15₄ do not appear in Figure 1 of Arnould, but are shown in other figures depicting Arnould’s plate. *See, e.g.*, Ex. 1006, Figs. 2–4.

Arnould also teaches that “in order to allow the screw 30 to be screwed in and locked with its axis 31 inclined in relation to the central axis” of hole 25, that hole has “a concave surface which is substantially complementary to an associated surface delimited by this screw head.” Ex. 1006 ¶ 27. Figure 4 of Arnould is reproduced below and provides an elevation view of plate 1 from another angle.



Arnould Figure 4 shows hole 25 with a concave edge 25₂. *Id.* ¶ 27.

According to Arnould, “when screw 31 is fully inserted into the hole 25, its head 32 comes to rest and wedge[s] against at least a portion of the edge 25₂.” *Id.*

iii. Myerson

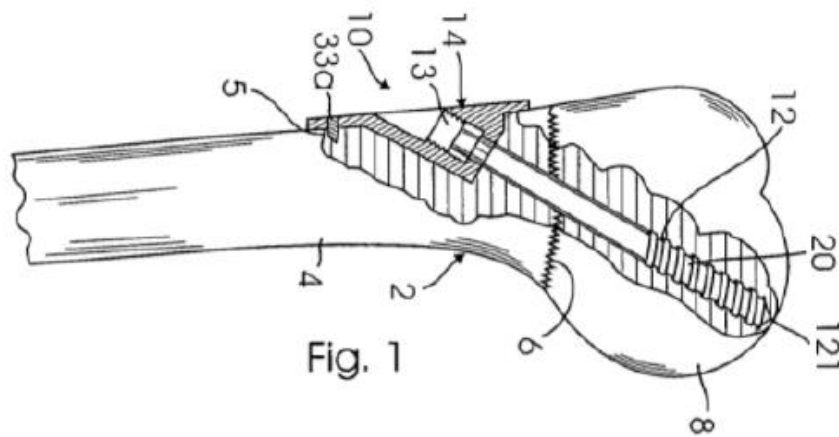
Myerson is a United States patent application published on October 26, 2006. Ex. 1008, code (43). Petitioner asserts that Myerson qualifies as prior art under 35 U.S.C. § 102(b). Pet. 12. At this stage, Patent Owner does not dispute that Myerson is prior art to the challenged claims.

Myerson describes “[a] fixation plate for use in fusion of the metatarsal-phlangeal joint” with a number of screw holes. Ex. 1008, Abstr. Myerson discloses an embodiment in which at least some of these “screw holes are designed to receive locking screws, such as by the incorporation of locking screws . . . within the screw hole.” *Id.* ¶ 22. According to Myerson, “[t]he locking threads can be of a variety of known configurations as dictated by the particular cortical locking screw.” *Id.*

iv. Zahiri

Zahiri is a United States patent filed on September 26, 2006, and issued May 29, 2012. Ex. 1007, codes (22), (45). Petitioner asserts that Zahiri qualifies as prior art under 35 U.S.C. § 102(e). Pet. 11. At this stage, Patent Owner does not dispute that Zahiri is prior art to the challenged claims.

Zahiri describes “fixation devices for compressing bone fractures of a human being.” Ex. 1007, 1:9–11. Figure 1 of Zahiri, reproduced below from the version on page 11 of the Petition, depicts an embodiment of Zahiri’s fixation device.



Zahiri Figure 1 shows the insertion of lag screw 12 through guide plate 14 such that it extends through fracture line 6 in the bone at “an angle of 150 degrees or 170 degrees.” *See id.* at 4:58–67. According to Zahiri, the inclined angle of the “short barrel portion” of the guide plate can vary in “the range of from 90 to 170 degrees.” *Id.* at 3:59–67.

Zahiri also teaches that the plate may include holes for pins “designed to temporarily lock” the plate in position “so that it creates a user friendly condition for a surgeon to place the disclosed device at a desired location.” Ex. 1007, 3:11–18; *see also* Fig. 8 (holes 235a-d).

E. Ground 1: obviousness over Slater

Petitioner contends claims 32, 33, 36, and 37 would have been obvious over Slater. *See* Pet. 12–37. Petitioner presents evidence and argument purporting to show that each of the limitations of these claims is taught or suggested by Slater. *Id.*

Beginning with independent claim 32, we determine that Petitioner has met its burden for institution. Based on the current record, Petitioner has shown that Slater teaches or reasonably suggests all of the steps of the recited method, including placement of a bone plate that spans a first and second bone separated by a joint (i.e., plate 1 with portion 30 aligned with the tibia and portion 5 aligned with the talus as depicted in Slater’s Figure 1), insertion of a first fixation member through a first hole of a plate into a first bone (i.e., the screws extending through openings 33, 34, and 35 into the tibia as depicted in Slater’s Figure 1), insertion of a second fixation member through a second hole into a second bone (i.e., the screws extending through openings 11 and 12 into the talus as depicted in Slater’s Figure 1),

and insertion of a third fixation member seated in a third hole that extends through a thickness of the plate and into both bones (i.e., screw 25 extending through formation 27 as depicted in Slater’s Figure 1.). Pet. 16–25 (citing evidence).

Moreover, Petitioner offers Mr. Sherman’s testimony that a POSITA would understand that the uppermost set of dotted lines depicting the placement of screw 25 in Slater’s Figure 1 “shows an embodiment where the third fixation member passes through a third hole into the first bone, across the joint, and into the second bone in a way that the free end is not attached to any portion of the pate and resides in the second bone.” Ex. 1002 ¶¶ 99–103. Mr. Sherman further explains how the same embodiment teaches or suggests the remaining elements of claim 32. *Id.* ¶¶ 104–118. Based on the current record, we determine that this testimony, when considered along with the rest of Petitioner’s showing, is sufficient to meet the burden for institution.

In its Preliminary Response, Patent Owner raises two arguments against the merits of Petitioner’s first ground. *See* Prelim Resp. 17–26. First, Patent Owner argues that “[t]he Petition fails to address the fact that the challenged claims are all directed to ‘a *method* of fusing a joint,’ not to an apparatus or system.” *Id.* at 17. According to Patent Owner, the Petition merely states that Slater discloses a fusion plate configured as shown in Figure 1, but does not “even attempt[] to show *how* Slater’s plate would be capable of . . . performing the claimed method” or “*why* a POSITA would have been motivated to use the prior art devices in the claimed manner.” *Id.* at 19.

Patent Owner’s first argument is unavailing. The Petition sufficiently demonstrates that Slater’s Figure 1, and the related description in Slater, shows how the fusion plate taught therein is used. As shown in that figure, the plate is placed over the tibia and talus and multiple fixation screws are inserted into those bones to fuse the joint between the two. *See* Ex. 1004, Figure 1. The Petition further cites passages in Slater describing how the plate is positioned and fixed by insertion of these screws. *See* Pet. 13–20 (citing Ex. 1004, 6:14–28, 8:13–24, 11:1–12:2). Thus, on the current record, Petitioner has sufficiently shown that in addition to describing the plate itself, Slater teaches or suggests the use of its plate to practice the method recited in claim 32.

Patent Owner’s second argument is that Petitioner failed to “perform an adequate [obviousness] analysis under *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).” Prelim. Resp. 20. According to Patent Owner, Petitioner “contends Slater and the technical expertise of a POSITA ‘collectively disclose all the elements of claims 32, 33, 36, and 37 of the ’713 patent,’ but ‘fails to explain what it believes to be missing from Slater and why one of ordinary skill in the art would have found it obvious to modify Slater to achieve the claimed limitations.’” *Id.* (quoting Pet. 12). In particular, Patent Owner asserts “[i]t is unclear whether Petitioner contends that Slater alone discloses each of the claim elements or whether Petitioner relies on the technical expertise of a POSITA for some or all of these claim limitations.” *Id.* at 22–23.

On the current record, Patent Owner’s criticism of Petitioner’s obviousness analysis is unavailing. The Petition provides an element-by-element analysis for claims 32, 33, 36, and 37, explaining Petitioner’s

position that Slater “discloses” the element or claim, or that the element “is taught by Slater.” *See* Pet. 15–37. Read in context, we understand this to mean that Petitioner contends that Slater teaches or suggests all of the limitations of these claims. To the extent Patent Owner disagrees, it will have an opportunity to present its arguments and evidence to the contrary at trial.¹⁴

Petitioner’s showing for dependent claims 33, 36, and 37 is also sufficient to meet the burden for institution. *See* Pet. 26–37 (citing evidence). At this stage, Patent Owner does not present any arguments against Petitioner’s showing for these claims beyond its arguments for claim 32, which are unavailing for the reasons explained above.

Accordingly, based on the current record, Petitioner has established a reasonable likelihood it will prevail in demonstrating that claims 32, 33, 36, and 37 would have been obvious over Slater.

F. Ground 2: obviousness over Slater and Myerson

Petitioner contends claims 34, 35, and 39 would have been obvious over Slater and Myerson. *See* Pet. 37–43. In addition to its showing for

¹⁴ Patent Owner points out that Petitioner’s statement that “a POSITA would understand that the fixation screw 25 (third fixation member) is seated in the third hole (opening 26), crosses a joint between two bones, is the only fixation element in the second bone and does not contact the bone plate” appears to be incorrect because “screw 25 is *not* the only screw in the alleged second bone [i.e., the talus].” Prelim. Resp. 24 (quoting Pet. 14). This statement may indeed be an error because Petitioner elsewhere explains that Slater discloses the insertion of other screws in the talus (Pet. 18–19), whereas screw 25 is the “only fixation member extending across the joint,” as recited in element [32g] (*id.* at 25). In any event, the parties may address this issue further in their subsequent papers.

claim 32 in ground 1, Petitioner presents evidence and argument purporting to show that the additional elements recited in claims 34, 35, and 39 are taught by Myerson. *Id.* at 40–43. Petitioner also offers reasons why, in its view, a POSITA would have been motivated to combine Myerson’s teachings regarding these elements with Slater and would have had a reasonable expectation of success in doing so. *See id.* at 37–40.

In view of the current record, we determine that Petitioner’s showing for each of the claims in ground 2 is sufficient to meet its burden for institution. Beginning with claims 34 and 35, Petitioner contends that Myerson teaches a fusion plate with “locking holes” and “threaded” holes as recited in these claims. Pet. 40–41. According to Petitioner, it would have been obvious to use such holes “to improve the fixation of Slater’s plate” because “Slater discloses how the prior art uses a screw locking mechanism” and “the use of locking screws with locking threaded holes to prevent the screws from backing out is a known element to obtain a predictable result in the art.” *Id.* at 38 (citing Ex. 1002 ¶¶ 141–143).

Patent Owner contends that Petitioner’s rationale for combining the references is insufficient because the prior art discussed in Slater, i.e., U.S. Patent No. 5,951,558 (Ex. 2003, “the ’558 patent”), describes a “screw blocking mechanism” as opposed to locking or threaded holes. Prelim. Resp. 30–32. According to Patent Owner, “Petitioner nowhere explains why a POSITA would have gone from considering a screw blocking mechanism as in the ’558 patent to the use of locking screws with locking threaded holes as in Myerson.” *Id.* at 32.

Patent Owner’s argument is unavailing on the current record. The Petition relies on Slater’s discussion of a “screw blocking or locking

mechanism” in the ’558 patent as evidence that a POSITA would have been aware of and concerned with the possibility of the screws backing out after the plate was installed. Pet. 37–38; *see also id.* at 41 (arguing that the “problem of screws loosening and backing out” was “explicitly recognized by Slater”). Petitioner’s declarant testifies that “[i]n looking to improve the fixation of Slater’s plate, a POSITA would look to Myerson, which discloses the advantages of using locking screws and threaded holes to prevent the screws from backing out and a method of implementing them” and would recognize such “as a known element, present in the prior art, to obtain a predictable result.” Ex. 1002 ¶¶ 142–143. Thus, Petitioner’s obviousness theory is premised on the substitution of a known element (i.e., locking and threaded holes as taught in Myerson) to address a known problem and not the use of the particular blocking plate mechanism described in the ’558 patent. Mr. Sherman’s testimony, which is currently unrebutted, is sufficient to support Petitioner’s theory at this stage of the proceeding.

Turning to claim 39, which further limits the joint in claim 32 to one in the foot or hand, Petitioner contends that “Myerson’s bone plate is configured to fuse the MTP joint in the foot and contour to the phalanx.” Pet. 42. According to Petitioner, “internal fixation bone plates are often reconfigured for different applications, and in most cases, are not limited to a single specific bone plate or single specific indication.” *Id.* at 38 (citing Ex. 1002 ¶ 144). Petitioner argues that Slater’s plate is designed to contour to a joint and therefore a POSITA would have understood it “could be contoured to the phalanx as described in Myerson.” *Id.* at 43 (citing Ex. 1002 ¶¶ 152–153).

On the current record, we determine that Petitioner’s argument, which is supported by the testimony of Mr. Sherman, is sufficient for institution. That said, we are sympathetic to Patent Owner’s argument that Petitioner’s argument for claim 39 is “conclusory” because it lacks detail regarding why “a POSITA would have used a Slater bone plate to fuse a joint in the foot” and “how the Slater bone plate allegedly could be reconfigured for such an application.” *See* Prelim. Resp. 33–34. These issues would benefit from further development at trial.

G. Ground 3: obviousness over Slater and Zahiri

Petitioner contends claims 32, 33, and 38 would have been obvious over Slater and Zahiri. *See* Pet. 43–57. In addition to its showing for claims 32 and 33 in ground 1, Petitioner presents evidence and argument purporting to show that element [32e] and the additional limitations recited in claims 33 and 38 are taught by Zahiri. *Id.* at 47–57. Petitioner also offers reasons why, in its view, a POSITA would have been motivated to combine Zahiri’s teachings regarding these elements with Slater and would have had a reasonable expectation of success in doing so. *See id.* at 43–47.

In view of the current record, we determine that Petitioner’s showing for each of the claims in ground 3 is sufficient for institution. We address Patent Owner’s arguments to the contrary below.

Focusing on claim 32 and claim element [32e],¹⁵ Patent Owner argues that the reasoning Petitioner provides for combining the references is insufficient. *See* Prelim. Resp. 34–41. Patent Owner contends that “[u]nlike

¹⁵ Patent Owner does not separately dispute Petitioner’s showing for claims 33 and 38 in its Preliminary Response.

Slater, Zahiri is directed to a fixation device for a large, long bone.” *Id.* at 35. Patent Owner also points to Petitioner’s contention that if “Slater is found to not explicitly disclose this element, a POSITA would have readily looked to Zahiri for a way to improve the integrity of the angled fixation screw” by incorporating the seated head of the lag screw shown in Zahiri’s Figure 1. *Id.* at 36 (quoting Pet. 49). According to Patent Owner, the only support for that contention is paragraph 175 of the Sherman Declaration, which “is substantively identical to the Petition and provides no further explanation.” *Id.* Patent Owner further argues that there is no evidence that “the stated goal” of Slater is maintaining the integrity of the third fixation member. *Id.* at 38–40.

Patent Owner’s arguments are unavailing on the current record. Regarding element [32e], the Petition states that a POSITA would look to Zahiri’s disclosure of “a threaded portion 37 in the short barrel portion 38 (third hole), which provides a press fit engagement with head 22 of the lag screw 12 (third fixation member” to improve the integrity of Slater’s angled fixation screw. Pet. 49–50 (citing and annotating the arrangement in Zahiri’s Figure 1).¹⁶ According to Petitioner, this combination would result in a third fixation members “seated in the third hole” as recited in claim 32.

Petitioner’s rationale for the combination is supported not only by the

¹⁶ Patent Owner also contends that Petitioner “simply ignore[s]” the locking screw taught in Zahiri. Prelim. Resp. 39–40. We disagree. Petitioner’s theory appears to be that a POSITA would use the entire lag screw arrangement shown in Zahiri Figure 1, i.e., short barrel portion 38 with threaded portion 37 that engages locking screw 13 to hold the seated lag screw 22 in place, to improve the structural integrity of Slater’s angled fixation member. *See* Pet. 49–50.

testimony in paragraph 175 of Mr. Sherman’s declaration, but also by Mr. Sherman’s testimony regarding Slater’s teaching of element [32e], which the Petition incorporates from ground one. *See* Pet. 49. In particular, Mr. Sherman states that Slater “discloses the need to maintain the integrity of the screw bone interface, through the cooperation of the fixation screws and the screw insertion hole.” Ex. 1002 ¶ 104 (citing Ex. 1004, 5:28–31; 6:3–9). Thus, contrary to Patent Owner’s argument, the Petition does cite evidence to support Petitioner’s contention that maintaining structural integrity of the angled fixation screw is a “stated goal” of Slater. *See* Pet. 50.

Contrary to Patent Owner’s suggestion, the fact that the testimony in Mr. Sherman’s declaration is in some instances “substantively identical” to the arguments in the Petition does not undermine Petitioner’s position. *See* Prelim. Resp. 36–37. Likewise, referring to Mr. Sherman’s declaration as a “copycat” of the Petition does not show that testimony to be unreliable. *See Id.* at 38, 44. Instead, the question is whether the argument in the Petition and evidence in the declaration are so conclusory that they fail to meet Petitioner’s burden. *See KSR*, 550 U.S. at 418 (explaining that obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”) (internal quotations omitted); *ActiveVideo Networks, Inc. v. Verizon Communications, Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012) (explaining that “generic” testimony that “bears no relation to any specific combination of prior art elements” was insufficient). This is not the case here where Petitioner and Mr. Sherman have articulated specific reasons for combining specific elements, i.e., Zahiri’s lag screw arrangement

(claims 32 and 33) and temporary fixation pins (claim 38), with Slater's plate. *See* Pet. 49–50, 56; Ex. 1002 ¶¶ 104, 163–168, 175, 176, 187.

H. Ground 4: obviousness over Arnould and Zahiri

Petitioner contends claims 32, 33, and 36–39 would have been obvious over Arnould and Zahiri. *See* Pet. 57–88. Petitioner presents evidence and argument purporting to show that the limitations of these claims are taught or suggested by the cited references. *Id.* at 62–85. Petitioner also offers reasons why, in its view, a POSITA would have been motivated to combine Zahiri's and Myerson's teachings with Arnould and would have had a reasonable expectation of success in doing so. *See id.* at Pet. 57–62.

Beginning with independent claim 32, we determine that Petitioner has met its burden for institution. Based on the current record, Petitioner has shown that Arnould teaches or reasonably suggests the steps of the recited method, including placement of a bone plate that spans a first and second bone separated by a joint (i.e., plate 1 having holes 15₃ and 15₄ aligned with the phalanx and holes 15₁ and 15₂ aligned with the metatarsal as depicted in Arnould's Figures 1 and 4), insertion of a first fixation member through a first hole of a plate into a first bone (i.e., screws 4 extending through holes 15₃ and 15₄ into the phalanx as depicted in Arnould's Figures 1 and 4), insertion of a second fixation member through a second hole into a second bone (i.e., screws extending holes 15₁ and 15₂ into the metatarsal as depicted in Arnould's Figures 1 and 4), and insertion of a third fixation member seated in a third hole and extending through a thickness of the plate into both bones such that its free end resides in the second bone and is not attached to

any portion of the plate (i.e., screw 30 with head 32 seated in the concave surface of hole 25 and extending into the phalanx and metatarsal as depicted in Arnould's Figures 1 and 4.). Pet. 63–73 (citing evidence). Petitioner relies on Zahiri as additional evidence for elements [32e], [32f], and [32g] and, based on the current record, has articulated a sufficient rationale for combining Zahiri's teachings regarding those limitations with Arnould to the extent they are not already taught in Arnould itself.

Patent Owner repeats many of the same arguments it made for the grounds based on Slater. First, Patent Owner contends "Petitioner fails to present sufficient evidence and argument that a POSITA would have been motivated to operate the combined structural features of Arnould and Zahiri in a manner that satisfies the claimed method steps." Prelim. Resp. 41.

We disagree. Similar to its showing for the Slater-based grounds, Petitioner demonstrates that Arnould's figures, along with the related description in Arnould, teach a method of using the plate depicted therein. In particular, Arnould's Figure 1 illustrates the use of Arnould's fusion plate by showing it positioned over the phalanx and metatarsal with fixation screws inserted to fuse the joint. *See* Ex. 1006, Fig. 1. The Petition further cites passages in Arnould describing how the plate is positioned and fixed by inserting these screws. *See* Pet. 62–73 (citing Ex. 1006 ¶¶ 11, 27, 32–34). Petitioner provides a similar showing for the teachings from Zahiri that it combines with Arnould. *See, e.g.*, Pet. 68, 71 (annotating Zahiri figure 1 to show operation of Zahiri's lag screw arrangement). Thus, on the current record, Petitioner has sufficiently shown that Arnould and Zahiri teach the use of a fusion plate to practice the method recited in claim 32.

Regarding elements [32e] and [32f], Patent Owner argues that Petitioner’s rationale for combining Zahiri’s seated lag screw arrangement with Arnould is insufficient. *See* Prelim. Resp. 42–47. Patent Owner’s arguments are unavailing on the current record. As an initial matter, the Petition relies on Zahiri only “[t]o the extent that Arnould is found to not explicitly disclose” elements [32e] and [32f]. Pet. 67, 70. As explained above, on the current record, Petitioner has shown that the plate depicted in Arnould Figures 1 and 4 teaches a third fixation member (screw 30) seated in a third hole (hole 25) and extending through at thickness of the plate as recited in elements [32e] and [32f]. Thus, on the current record, Petitioner has met its burden to show the prior art teaches or suggests these elements even without combining the additional teachings in Zahiri.

Regarding Petitioner’s alternative theory that it would have been obvious to combine Zahiri’s lag screw arrangement with Arnould’s plate, the Petition explains, supported by the testimony of Mr. Sherman, that a POSITA would have looked to Zahiri “to improve the placement” and “the integrity of the angled fixation screw.” Pet. 67–68, 70 (citing Ex. 1002 ¶¶ 216, 221). While we agree with Patent Owner that Petitioner’s reasoning for combining the references lacks detail, we nevertheless determine it is sufficient to meet Petitioner’s burden at this stage of the proceeding. Patent Owner will have the opportunity to present evidence and argument in its Response, and these issues in particular would benefit from further development at trial.

Petitioner’s showing for dependent claims 33 and 36–39 is also sufficient for institution. *See* Pet. 73–85 (citing evidence). At this stage, Patent Owner does not present any arguments against Petitioner’s showing

for these claims beyond its arguments for claim 32, which are unavailing for the reasons explained above.

Accordingly, based on the current record, Petitioner has established a reasonable likelihood it will prevail in demonstrating that claims 32, 33, and 36–39 would have been obvious over Arnould and Zahiri.

I. Ground 5: obviousness over Arnould, Zahiri, and Myerson

Petitioner contends claims 34 and 35 would have been obvious over Arnould, Zahiri, and Myerson. *See* Pet. 86–88. In addition to its showing for claim 32 in ground 4, Petitioner presents evidence and argument purporting to show that the “locking holes” and “threaded” holes recited in claims 34 and 35 are taught by Myerson. *Id.* at 87–88. Petitioner argues “the use of locking screws or threaded holes to prevent the screws from backing out,” as taught by Myerson, “is a well-known element of the prior art to obtain a predictable result” and “can be accomplished through a simple substitution to provide a known advantage and accomplish a predictable result.” *Id.* at 86 (citing Ex. 1002 ¶¶ 247–248).

Patent Owner argues that “Petitioner fails to demonstrate that *Arnould* was concerned with screw back-out.” Prelim. Resp. 48. According to Patent Owner, “Petitioner argues only that ‘Arnould describes the desire to completely secure the plate to the bone using [the] screws,’” which “is insufficient to support a motivation to combine Arnould, Zahiri, and Myerson.” Prelim. Resp. 48–50 (quoting Pet. 86).

We determine that Petitioner’s showing is sufficient for institution, notwithstanding Patent Owner’s argument to the contrary. The Petition cites passages in Arnould expressing a desire “to completely secure” the plate

body to the underlying bone, which it says would motivate a POSITA to look to a well-known element such as “locking screws or threaded holes to prevent the screws from backing out.” Pet. 86. In addition, the Petition relies on Mr. Sherman’s testimony that “screws loosening and backing out over time” was a “known problem” in “the field of bone plates” to which Myerson’s locking and threaded holes provide a known and predictable solution *Id.* at 88 (citing Ex. 1002 ¶¶ 250–252). Thus, on the current record, the Petition provides “articulated reasoning with rationale underpinning” for combining the locking and threaded holes taught in Myerson with Arnould’s plate. *See KSR*, 550 U.S. at 418.

VI. CONCLUSION

Based on the current record, we determine Petitioner has shown a reasonable likelihood that it will prevail in establishing that at least one claim of the ’713 patent is unpatentable. Accordingly, we institute review of all claims challenged on all of the grounds in the Petition. *See Consolidated Trial Practice Guide* (Nov. 2019), 64, available at <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf>.

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claim. Our view with regard to any conclusion reached in the foregoing analysis could change upon completion of the record.

VII. ORDER

Accordingly, it is:

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted as to claims 32–39 of the '713 patent based on the unpatentability challenges presented in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this decision.

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