

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNDER ARMOUR, INC.,

Petitioner,

v.

ATHALONZ, LLC,

Patent Owner.

IPR2024-00639
Patent 11,375,768 B2

PATENT OWNER'S NOTICE OF APPEAL

Via EMAIL
eFileSO@uspto.gov

Via P-TACTS
Patent Trial and Appeal Board

Via CM/ECF
United States Court of Appeals for the Federal Circuit

Notice is hereby given, pursuant to 35 U.S.C. §§ 141, 142, and 319, and 37 C.F.R. §§ 90.2-90.3, that Patent Owner Athalonz, LLC hereby appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision entered on September 10, 2025, (Paper 41), and from all underlying findings, determinations, rulings, opinions, orders, and decisions decided adversely to Patent Owner regarding this *inter partes* review of U.S. Patent No. 11,375,768 (“the ’768 patent”). A copy of the Final Written Decision is attached.

In accordance with 37 C.F.R. §90.2(a)(3)(ii), Athalonz, LLC further indicates that the issues on appeal include, but are not limited to, the following: (1) the Board’s determination that claims 1-5 and 8 of the ’768 patent are unpatentable; (2) the Board’s determination that Petitioner demonstrated by a preponderance of evidence that claims 1-5 and 8 of the ’768 patent are unpatentable; (3) the Board’s claim construction ruling and failure to construe other claim terms proposed for construction; (4) whether the Board’s final written decision complies with the requirements of the Administrative Procedure Act and whether it otherwise permits meaningful judicial review; (5) the Board’s consideration of (and failures to consider) the expert testimony, prior art, and other evidence in the record, and failure to consider such evidence as a whole; (6) the Board’s factual findings, conclusions of law or other determinations supporting or relating to the aforementioned issues, including the Board’s application of the applicable burdens of proof and production

and its application of the law of obviousness, as well as (7) all other issues decided adversely to Athalonz, LLC in any orders, decisions, rulings, and opinions.

Pursuant to 35 U.S.C. § 142 and 37 C.F.R. § 90.2(a), this Notice is being filed with the Director of the United States Patent and Trademark Office, and a copy of this Notice is being filed concurrently with the Patent Trial and Appeal Board. In addition, a copy of this Notice and the required docketing fees are being filed with the Clerk's Office for the United States Court of Appeals for the Federal Circuit via CM/ECF.

Respectfully Submitted,

Dated: November 11, 2025
Connor Houghton (Reg. No.
77,830)
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CERTIFICATE OF SERVICE

I hereby certify that on this date, a true and correct copy of the foregoing Patent Owner's Notice of Appeal was served via email to the following addresses:

Frank Cimino; fccimino@venable.com
Megan Woodworth; mswoodworth@venable.com
Robert Bugg; rebugg@venable.com
Justin J. Oliver; JJOliver@venable.com

In accordance with 37 C.F.R. §§ 90.2(a)(1) and 104.2(b), the undersigned hereby certifies that, in addition to being filed electronically through the Board's PTACTS System, **Patent Owner's Notice of Appeal** was filed and served by email on November 11, 2025 with the Director of the United States Patent and Trademark Office, at the following address: efileSO@uspto.gov.

In accordance with 37 C.F.R. § 90.2(a)(2), the undersigned hereby certifies that on November 11, 2025 a true and correct copy of Patent Owner's Notice of Appeal was filed electronically with the Clerk's Office of the United States Court of Appeals for the Federal Circuit via CM/ECF.

Respectfully Submitted,

Dated: November 11, 2025
Connor Houghton (Reg. No.
77,830)
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNDER ARMOUR, INC.,
Petitioner,

v.

ATHALONZ, LLC,
Patent Owner.

IPR2024-00639
Patent 11,375,768 B2

Before HYUN J. JUNG, CARL M. DeFRANCO, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

JUNG, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining All Challenged Claims Unpatentable

35 U.S.C. § 318(a)

Dismissing-in-Part and Denying-in-Part Patent Owner's Motion to Exclude

37 C.F.R. § 42.64(c)

I. INTRODUCTION

We have jurisdiction under 35 U.S.C. § 6 (2024). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 (2023). For the reasons that follow, we determine that Under Armour, Inc. (“Petitioner”) has shown by a preponderance of the evidence that claims 1–5 and 8 of U.S. Patent No. 11,375,768 B2 (Ex. 1001, “the ’768 patent”) are unpatentable. We also dismiss-in-part and deny-in-part Patent Owner’s Motion to Exclude (Paper 32).

A. Background and Summary

Petitioner filed a Petition (Paper 1, “Pet.”) requesting institution of an *inter partes* review of claims 1–5 and 8 of the ’768 patent. Athalonz, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review of claims 1–5 and 8 of the ’768 patent on all presented challenges. Paper 8 (“Inst. Dec.”), 2, 46–47.

After institution, Patent Owner filed a Response (Paper 12, “PO Resp.”), to which Petitioner filed a Reply (Paper 16, “Pet. Reply”), and Patent Owner thereafter filed a Sur-reply (Paper 26, “PO Sur-reply”). Patent Owner also filed an Identification of Improper Reply Arguments (Paper 18), and Petitioner filed Citations Supporting its Reply Arguments (Paper 20).

Patent Owner further filed a Motion to Exclude (Paper 32, “Mot.”), and Petitioner filed an Opposition to the Motion to Exclude (Paper 33, “Opp.”). Patent Owner then filed a Reply in Support of the Motion to Exclude. Paper 35 (“Mot. Reply”). An oral hearing in this proceeding was held on June 17, 2025; a transcript of the hearing is included in the record. Paper 40.

B. Real Parties in Interest

Petitioner identifies itself as a real party in interest. Pet. x. Patent Owner identifies itself as a real party in interest. Paper 4, 1.

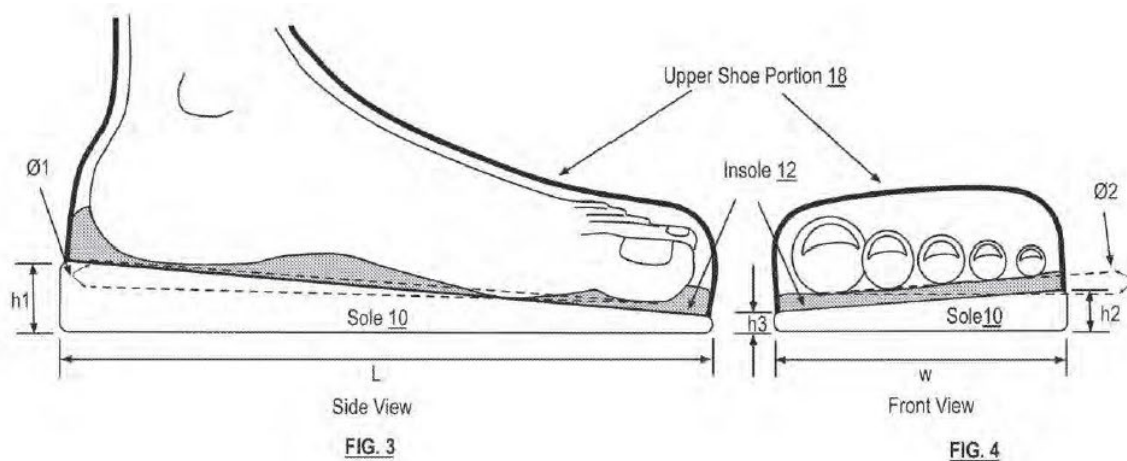
C. Related Matters

The parties identify *Athalonz, LLC v. Under Armour, Inc.*, 2:23-cv-00193-JRG (E.D. Tex.) as a related matter. Pet. x; Paper 4, 1; PO Resp. 14. Patent Owner also identifies IPR2024-00636, IPR2024-00637, IPR2024-00638, and IPR2024-00640 as related matters. PO Resp. 14.

D. The '768 Patent (Ex. 1001)

The '768 patent issued on July 5, 2022, from an application filed on August 29, 2019 that is a continuation of several previously filed continuation applications, the earliest of which was filed on January 23, 2012. Ex. 1001, codes (22), (45), (60), (63), 1:6–22. The '768 patent also claims priority to a provisional application filed on March 8, 2011. *Id.* at code (60), 1:22–25.

The '768 patent particularly relates to “athletic positioning footwear.” Ex. 1001, 1:45–46. Figures 3 and 4 of the '768 patent are below reproduced.



Figures 3 and 4 are cross-sectional side and front views, respectively, of “an apparatus that facilitates athletic positioning via an insole and/or a

sole of a shoe.” Ex. 1001, 2:15–20, 9:13–16. The shoe has upper section 18, insole section 12, and sole section 10. *Id.* at 9:16–18. The apparatus can be insole section 12 and/or sole section 10 and “has an athletic positioning shape as formed by a heel section 21, a mid-foot section 23, and/or a toe section 25.” *Id.* at 9:19–22. “In general, the athletic positioning shape has the heel section 21 higher than the toe section by a particular angle.” *Id.* at 9:22–24.

Figure 93 of the '768 patent is below reproduced.

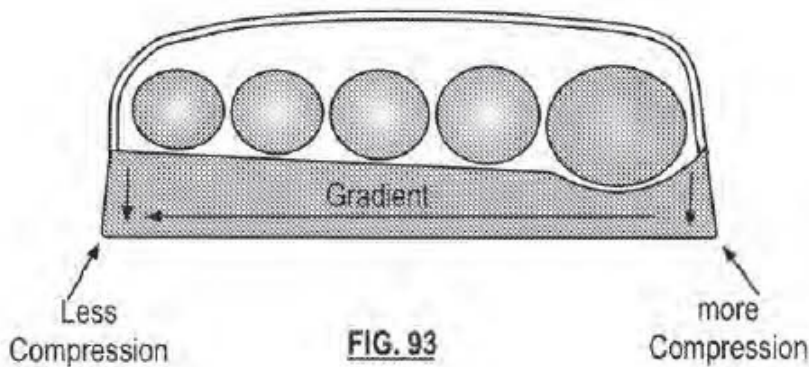


Figure 93 is a cross-sectional front-view diagram of an athletic positioning sole. Ex. 1001, 6:10–12, 27:50–53. An integrated sole and insole can be “comprised of one or more materials that provides a more compressible area towards the big toe/ball of foot area and increasingly less compressible away from the big toe/ball or foot area to facilitate an athletic position.” *Id.* at 27:53–57.

E. Illustrative Claim

The '768 patent includes 8 claims, of which Petitioner challenges claims 1–5 and 8. Of the challenged claims, claim 1, reproduced below, is the only independent claim.

1. An athletic shoe comprises:
 - an upper section; and
 - a sole section coupled to the upper section, wherein the sole section includes:
 - a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and
 - a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression, wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.

Ex. 1001, 43:25–44:7.

F. Asserted Prior Art and Proffered Testimonial Evidence

Petitioner identifies the following references as prior art in the asserted grounds of unpatentability:

Name	Reference	Exhibit
Talarico '911	US 4,642,911, issued Feb. 17, 1987	1008
Won	US 6,158,151, issued Dec. 12, 2000	1005
Norton	US 7,464,428 B2, issued Dec. 16, 2008	1007
Umezawa	US 2007/0107258 A1, published May 17, 2007	1006
Gallas	US 2010/0242307 A1, published Sept. 30, 2010	1020

Petitioner contends that Talarico '911, Won, Norton, and Umezawa are prior art under § 102(b), and Gallas is prior art under § 102(e).¹ Pet. 7. “Patent Owner does not dispute, for purposes of this Patent Owner Response, that all of Petitioner’s prior art predates the priority date of the ’768 patent.” PO Resp. 12. Petitioner also provides a Declaration of Grant Delgatty (Ex. 1002) and a Supplemental Declaration of Grant Delgatty (Ex. 1022). Patent Owner provides a Declaration of Timothy Markison (Ex. 2008). Deposition transcripts for Mr. Delgatty (Exs. 2010, 2022) and Mr. Markison (Ex. 1023) were filed.

G. Asserted Grounds

Petitioner asserts that claims 1–5 and 8 are unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	References/Basis
1–5, 8	103(a)	Umezawa
1–5, 8	103(a)	Umezawa, Gallas
1–5, 8	103(a)	Norton
1–5, 8	103(a)	Won, Norton
1–5, 8	103(a)	Won, Talarico '911
1–5, 8	103(a)	Won, Talarico '911, Gallas

Pet. 2.

¹ The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (Sept. 16, 2011), took effect on March 16, 2013. Because the ’768 patent claims priority to an application filed before that date, our citations to 35 U.S.C. §§ 102 and 103 in this Decision are to their pre-AIA versions. *See also* Pet. 5 (noting that “the ’768 patent, claims the benefit of U.S. Provisional Patent Application No. 60/450,485, filed March 8, 2011, via a chain of continuation applications”); PO Resp. 12 (stating that “[t]he ’768 patent claims priority to, *inter alia*, U.S. Provisional Patent Application No. 61/450,485, filed on March 8, 2011”).

II. MOTION TO EXCLUDE

Patent Owner moves to exclude Exhibit 1024 (U.S. Patent No. 11,206,878 B2, issued Dec. 28, 2021) because Patent Owner asserts it is irrelevant (Mot. 1–2 (citing Fed. R. Evid. 401–403; Pet. Reply 15, 2 n.4)) and moves to exclude Exhibit 1026 because Patent Owner asserts Petitioner has failed to establish its authenticity (*id.* at 1, 3–6 (citing Fed. R. Evid. 901(a), 901(b)(1)–(10); Pet. Reply 15, vi, 3–4; Ex. 1023, 213:22–217:18)). Patent Owner states that it timely objected to these exhibits. *Id.* at 1 (citing Paper 17).

A. Exhibit 1024

Petitioner argues that Exhibit 1024 is relevant to the interpretation of “first” and “second” materials. Opp. 3–4 (citing Prelim. Resp. 20; PO Resp. 16). Patent Owner replies that the exhibit “has no bearing on the parties’ dispute, given the clear definitions supported by the claims and specification.” Mot. Reply 1. Patent Owner also argues that “Petitioner has not shown any contradiction between how Exhibit 1024 uses the terms ‘first material’ and ‘second material’ and how those terms are used in the Challenged Patents.” *Id.* (citing Fed. R. Evid. 403).

Patent Owner does not satisfy its “burden of proof to establish that it is entitled to the requested relief.” 37 C.F.R. § 42.20(c). Evidence of how the inventor viewed claim terms can be useful in considering claim interpretation, and, thus, we agree with Petitioner that the exhibit is relevant. For the reasons stated below, however, we do not need to rely on the exhibit. Accordingly, Patent Owner’s Motion to Exclude Exhibit 1024 is dismissed as moot.

B. Exhibit 1026

Petitioner argues that “Exhibit 1026 is a redacted version of an Under Armour business document showing the materials and construction of the UA Charged Curry shoe produced to Patent Owner in the parallel litigation as UA000000077.” Opp. 4. According to Petitioner, “Patent Owner’s counsel, who is in possession of the unredacted version of UA000000077, does not provide any evidence that the document is anything other than what Petitioner suggests that it is.” *Id.* at 5–6. Petitioner also argues that the exhibit “includes Under Armour’s logo, copyright symbol and date of creation affixed in the course of business, has the general appearance of being a design schematic of a shoe, and was introduced and discussed during the deposition of Patent Owner’s expert.” *Id.* at 6 (citing PO Resp. 3–4; Ex. 1023, 215:6–217:12).

Patent Owner replies that Exhibit 1026 has not been authenticated and is not in fact an authentic copy of any of its documents. Mot. Reply 1. Patent Owner argues that Petitioner offers no testimony or evidence that the exhibit is authentic. *Id.* at 1–2 (citing Opp. 4). Patent Owner also argues that the exhibit has been selectively redacted. *Id.* at 2–5. Patent Owner further argues that the presence of Under Armour’s logo, a copyright symbol, and a date of creation are insufficient because of the alterations to the original document and Patent Owner’s declarant could not authenticate it. *Id.* at 4 (citing Ex. 1023, 213:22–217:18).

Patent Owner does not satisfy its “burden of proof to establish that it is entitled to the requested relief.” 37 C.F.R. § 42.20(c). Patent Owner does not explain sufficiently why the exhibit is not authentic, especially when it includes a logo and date of creation, and Patent Owner apparently created the underlying document. The exhibit also shows the basis for deposition

testimony. Accordingly, Patent Owner's Motion to Exclude Exhibit 1026 is denied.

III. ANALYSIS

A. Legal Standards

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent [claim] it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail in an *inter partes* review, the petitioner must support its challenges by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

Petitioner contends that the challenged claims of the '768 patent are unpatentable under § 103. Pet. 2. A claim is unpatentable under § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *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 skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also "determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at

418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Whether a combination of elements produces a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

B. Level of Ordinary Skill in the Art

Petitioner argues that a person of ordinary skill in the art “would have (1) at least a B.S. or equivalent degree related to industrial or product design and at least two years’ experience designing or developing athletic shoes; or (2) at least five years designing or developing athletic shoes.” Pet. 20–21 (citing Ex. 1002 ¶ 30). According to Petitioner, “the claims are obvious in view of any reasonable definition of a [person of ordinary skill in the art].” *Id.* at 21. We preliminarily adopted Petitioner’s proposed level of ordinary skill. Inst. Dec. 9.

“For purposes of this proceeding, Patent Owner does not dispute Petitioner’s level of ordinary skill.” PO Resp. 12–13 (citing Pet. 20–21). Patent Owner contends that its declarant Mr. Markison “far exceeds the proposed level of ordinary skill in the art” and, because he is registered as a patent attorney and licensed as an attorney, “can offer good faith and objective opinions on the issues in this proceeding.” *Id.* at 13–14 (citing Ex. 2008 ¶¶ 11–13, 17–30, 42–44).

Based on the full record, we maintain and affirm that one of ordinary skill in the art “would have (1) at least a B.S. or equivalent degree related to industrial or product design and at least two years’ experience designing or developing athletic shoes; or (2) at least five years designing or developing athletic shoes.” Pet. 20–21 (citing Ex. 1002 ¶ 30); Inst. Dec. 9; Ex. 1002 ¶ 30; Ex. 2008 ¶ 44. We find that Petitioner’s proposed level of ordinary skill in the art is consistent with the ’768 patent and the asserted prior art.

C. Claim Construction

In an *inter partes* review, the claims are construed

using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

37 C.F.R. § 42.100(b); *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Petitioner argues that all claim limitations are met in the prior art under any interpretation of the challenged claims. Pet. 16. Petitioner, however, offers constructions “for purposes of clarity only.” *Id.*

1. “gradient compression factor”

Petitioner contends that the ’768 patent does not define “gradient compression factor” but indicates a meaning when describing Figure 93. Pet. 17–18 (quoting Ex. 1001, 27:47–67). According to Petitioner, one of ordinary skill in the art would have understood that “a forefoot platform constructed of a second material having a ‘gradient compression factor’ would become ‘increasingly less compressible’ from the inner edge to the outer edge of the forefoot platform” based on that description. *Id.* at 18. Petitioner also cites to a dictionary definition for support. *Id.* (citing Ex. 1019).

Patent Owner adopted the construction for its Preliminary Response. Prelim. Resp. 18. Based on the record at the time, we adopted the parties’ agreed-upon construction for institution, because it was consistent with the plain language of the claim and the Specification. Inst. Dec. 11.

“Patent Owner does not object to adoption of Petitioner’s construction in the proceeding *for the limited purpose of evaluating the unpatentability theories set forth in the Petition*, because . . . Petitioner’s patentability theories fail even if its own proffered construction is adopted.” PO Resp. 14. “Patent Owner[, however,] does not agree that this construction in its entirety is correct, in part because it is inconsistent with the plain meaning of ‘gradient.’” *Id.* (citing Pet. 17–18; Ex. 2008 ¶ 93).

Based on the full record, we maintain the interpretation adopted at institution for “gradient compression factor.” *See also* Ex. 2008 ¶ 94 (applying Petitioner’s proposed construction).

2. “a perimeter of the heel platform”

Petitioner contends that “a perimeter of the heel platform” does not need interpretation for purposes of this proceeding. Pet. 18. Petitioner, however, argues that, in related litigation, Patent Owner appears to interpret the phrase to mean “the perimeter of the portion of the shoe where the heel of the foot sits, not the outer-most perimeter of the shoe” and includes “a heel platform that includes some degree of curvature and height change from its inner edge to its outer edge, and from the front to the rear.” *Id.* at 18–19 (citing Ex. 1002 ¶ 26; Ex. 1012, Ex. E, 23–24; Ex. 1021). Petitioner, therefore, applies Patent Owner’s apparent interpretation of “a perimeter of the heel platform” to the challenges of this proceeding “without conceding alternative arguments in the counterpart litigation.” *Id.* at 19.

Patent Owner adopted the construction for its Preliminary Response. Prelim. Resp. 18. Based on the record at the time, we adopted the parties’ agreed-upon construction at institution, because it was reasonable and consistent with the intrinsic record. Inst. Dec. 12.

“For purposes of evaluating Petitioner’s unpatentability theories in this proceeding, Patent Owner does not object to use of this construction in this proceeding.” PO Resp. 15 (citing Pet. 18–19). Based on the full record, we maintain the interpretation adopted at institution for “a perimeter of the heel platform.”

3. *“first material” and “second material”*

In its arguments for the challenge based on Umezawa, Petitioner notes that, although claim 1 recites a heel platform made of a “first material” and a forefoot platform made of a “second material,” the first and second materials can be the same based on Patent Owner’s apparent interpretation in related litigation. Pet. 25 n.1 (citing Ex. 1012, Ex. E, 38–53). Petitioner applies Patent Owner’s apparent interpretation to the challenges of this proceeding “[w]ithout conceding alternative arguments.” *Id.*

At institution, we were persuaded by Patent Owner’s arguments and adopted a construction that the “first” and “second” materials are “different in some manner.” Inst. Dec. 12–13. Patent Owner responds that we should maintain the same construction and disputes Petitioner’s evidence that the “first” and “second” materials can be the same material. PO Resp. 15–18 (citing Pet. 25 n.1; Inst. Dec. 12–13; Ex. 1012, Ex. E, 38, 52; Ex. 2013, 15). Patent Owner also argues that Petitioner should not be allowed to present new arguments or evidence in reply. *Id.* at 18–19.

Petitioner replies that interpreting “first” and “second” materials to be different materials contradicts the plain language of the claims, the Specification, and Patent Owner’s infringement contentions. Pet. Reply 1–5 (citing Pet. 25 n.1; Prelim. Resp. 20; PO Resp. 4, 16; Ex. 1001, 10:17–26, 17:60–62, 22:4–11, 27:50–54, Figs. 43, 93, claim 6; Ex. 1023, 47:1–48:1, 215:6–217:12, 224:13–225:19; Ex. 1025, 580; Ex. 1026).

Patent Owner replies that Petitioner presents new arguments and evidence in reply. PO Sur-reply 1–5 (citing Pet. 25 n.1; Inst. Dec. 13; PO Resp. 15–19; Pet. Reply 1–3, 14 n.1; Paper 18; Paper 20). Patent Owner also argues that, even if Petitioner’s asserted new arguments and evidence are considered, they fail to support an interpretation of “first” and “second” materials being the same material. *Id.* at 5–8 (citing Inst. Dec. 12–13; PO Resp. 4, 16–17; Pet. Reply 3; Ex. 1001, 17:60–62, 27:53–57, Figs. 43, 93, claim 6; Ex. 1023, 215:6–217:12; Ex. 2013, 19–22).

After considering the full record, we see no reason to disturb the adopted construction that the “first” and “second” materials, as claimed, are different in some manner. The outcome of our analysis below would not, however, change under an interpretation of “first” and “second” materials being the same material.

4. *“near an outer edge of the sole section” and “near an inner edge of the sole section”*

Petitioner did not propose an express interpretation for “near an outer edge of the sole section” and “near an inner edge of the sole section.” *See* Pet. 16–20. Patent Owner proposed that these phrases refer to “near to the outer edge and inner edge (respectively) of the portion of the shoe where the foot sits.” Prelim. Resp. 19–20. Patent Owner argued that the same interpretation should be applied for the ’768 patent and a related patent challenged in IPR2024-00640. Based on the record at the time, we did not need to construe expressly “near an outer edge” and “near an inner edge” to resolve the parties’ dispute at institution. Inst. Dec. 14.

Patent Owner responds that “near an outer edge of the sole section” and “near an inner edge of the sole section” is consistent with how one of ordinary skill in the art would have understood those terms in light of the

Specification. PO Resp. 19–20 (citing Ex. 2008 ¶¶ 107–111). Patent Owner argues that the ’768 patent’s “inner edge” and “outer edge” refer “to how the foot engages with the foot assembly” and “do not refer to the edges of the exterior of the shoe.” *Id.* at 20 (citing Ex. 2008 ¶¶ 107–111). Petitioner does not provide a reply argument. *See* Pet. Reply.

Based on the full record, we adopt Patent Owner’s proposed interpretations of “near an inner edge” and “near an outer edge” to refer to where the foot sits, because it is reasonable.

5. *Other Terms*

Based on the full record, express interpretation of other terms is not necessary to resolve the parties’ dispute. *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. *Asserted Obviousness Based on Umezawa and Gallas*

1. *Umezawa (Ex. 1006)*

Umezawa “relates to shoes suitable for golf, tennis, squash, field hockey, basketball, aerobic exercise or the like.” Ex. 1006 ¶ 3. Figure 1 of Umezawa is below reproduced.

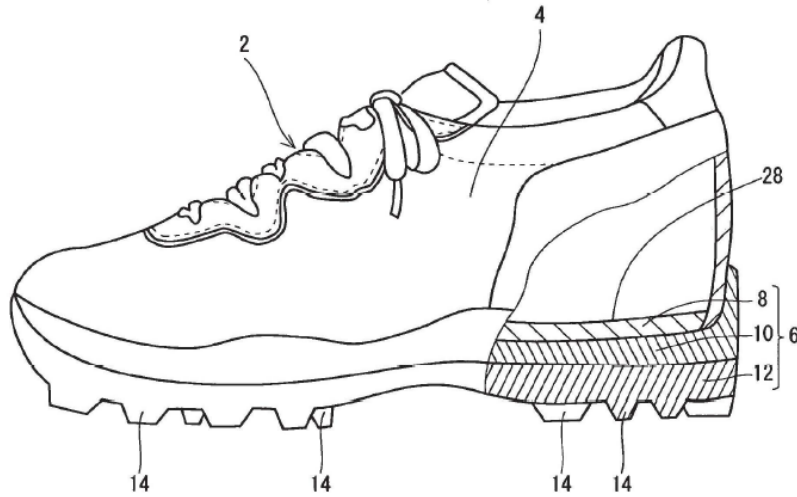


Fig. 1

Figure 1 shows a partially-cutout side view of a golf shoe. Ex. 1006 ¶ 15. Golf shoe 2 includes upper part 4 and bottom part 6 that has insole 8, midsole 10, and outsole 12. *Id.* ¶ 32. Figures 2 and 4 of Umezawa are reproduced below.

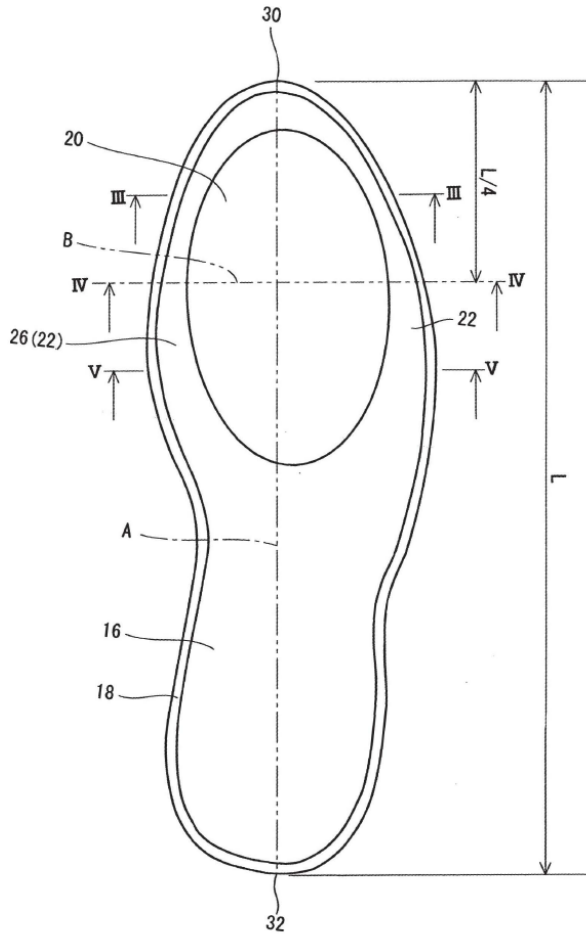


Fig. 2

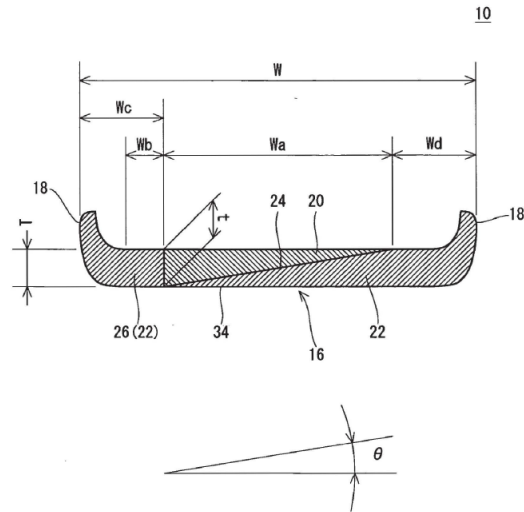


Fig. 4

Figure 2 is a plan view of a midsole of a golf shoe, and Figure 4 is a cross-sectional view taken along line IV-IV in Figure 2. Ex. 1006 ¶¶ 16, 18. Midsole 10 has low elastic part 20 and high elastic part 22. *Id.* ¶ 36. When a compressive load is applied to midsole 10, low elastic part 20 is more easily deformed than high elastic part 22. *Id.* The thickness of low elastic part 20 and high elastic part 22 gradually changes along inclined surface 24. *Id.* ¶ 43. “When a golf player wears these golf shoes 2 and the body weight of the golf player is applied to the bottom part 6, this midsole 10 is compressed.” *Id.* ¶ 38. “Since the thickness of the low elastic part 20 is larger in the inside, the inside compression deformation is larger.” *Id.*

2. *Gallas (Ex. 1020)*

Gallas discloses a golf shoe. Figures 2 and 5 of Gallas are reproduced below.

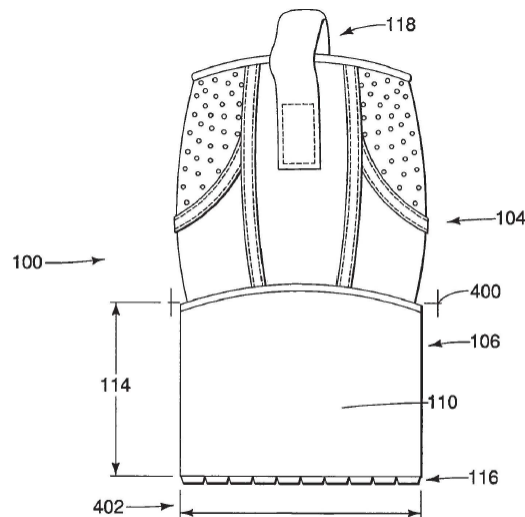
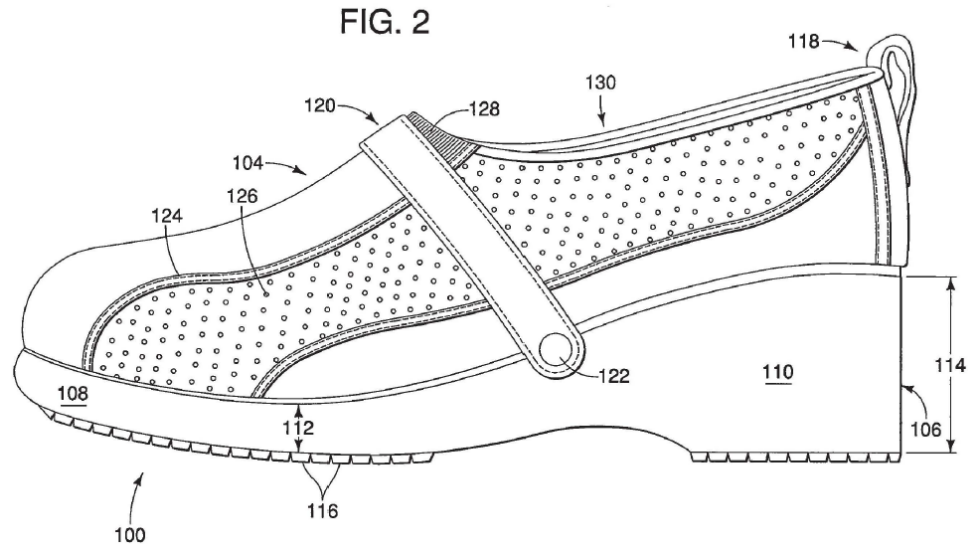


FIG. 5

Figures 2 and 5 show a side view and back view of a golf shoe. Ex. 1020 ¶¶ 5, 8. Golf shoe 100 includes sole 106 and upper portion 104 attached to sole 106. *Id.* ¶ 20. Gallas’s “shoe may position the foot such that the heel of the foot is elevated to a height above the front or toes of the foot,” and “[t]he angle of the shoe, slanting down from the back to the front,

may facilitate weight transfer from the heels to the toes at impact.” *Id.* ¶¶ 12, 17; *see also id.* ¶¶ 18, 21, 28 (describing advantages of elevating the heel and the elevation). “The inside 300 of the shoe 100 may be designed to correct arch deficiencies, provide heel support, correct pronation, or otherwise address foot problems or comfort issues.” *Id.* ¶ 29.

3. *Claim 1*

a) *“An athletic shoe comprises:”*

Petitioner contends that, to the extent the preamble is limiting, Umezawa discloses “[a]n athletic shoe.” Pet. 21 (citing Ex. 1002 § IX.A.a; Ex. 1006 ¶ 3), 35 (citing Ex. 1002 ¶ 86).

The relied-upon portion of Umezawa discloses that Umezawa “relates to shoes suitable for golf, tennis, squash, field hockey, basketball, aerobic exercise or the like.” Ex. 1006 ¶ 3. We also credit Petitioner’s testimonial evidence regarding the preamble because the cited portions of Umezawa support it. Ex. 1002 § IX.A.a; Ex. 1006 ¶ 3, Fig. 1. Patent Owner does not provide a responsive argument regarding the preamble. *See* PO Resp. 33–45.

Based on the full record before us, Petitioner persuades us, and we find, that Umezawa teaches or suggests, to the extent the preamble is limiting, “[a]n athletic shoe.”

b) *“an upper section”*

Petitioner contends that Umezawa’s upper part 4 teaches or suggests “an upper section.” Pet. 21–22 (citing Ex. 1002 § IX.A.b; Ex. 1006 ¶ 32, Fig. 1), 35 (citing Ex. 1002 ¶ 86).

The relied-upon portion discloses that “golf shoe 2 illustrated in FIG. 1 comprises an upper 4.” Ex. 1006 ¶ 32. We also credit Petitioner’s testimonial evidence regarding the limitation because the cited portions of

Umezawa support it. Ex. 1002 § IX.A.b; Ex. 1006 ¶ 32, Fig. 1. Patent Owner does not provide a responsive argument regarding the “upper section.” See PO Resp. 33–45.

Based on the full record before us, Petitioner persuades us, and we find, that Umezawa teaches or suggests “an upper section.”

c) “a sole section coupled to the upper section”

Petitioner contends that Umezawa’s bottom part 6 with insole 8, midsole 10, and outsole 12 teaches or suggests “a sole section coupled to the upper section.” Pet. 22 (citing Ex. 1002 § IX.A.c; Ex. 1006 ¶ 32, Fig. 1), 35 (citing Ex. 1002 ¶ 86).

The relied-upon portion discloses that “golf shoe 2 illustrated in FIG. 1 comprises . . . a bottom part 6” that is coupled to upper 4. Ex. 1006 ¶ 32, Fig. 1. We also credit Petitioner’s testimonial evidence regarding the limitation because the cited portions of Umezawa support it. Ex. 1001, 40:59–41:3; Ex. 1002 § IX.A.c; Ex. 1006 ¶ 32, Fig. 1. Patent Owner does not provide a responsive argument regarding the “sole section coupled to the upper section.” See PO Resp. 33–45.

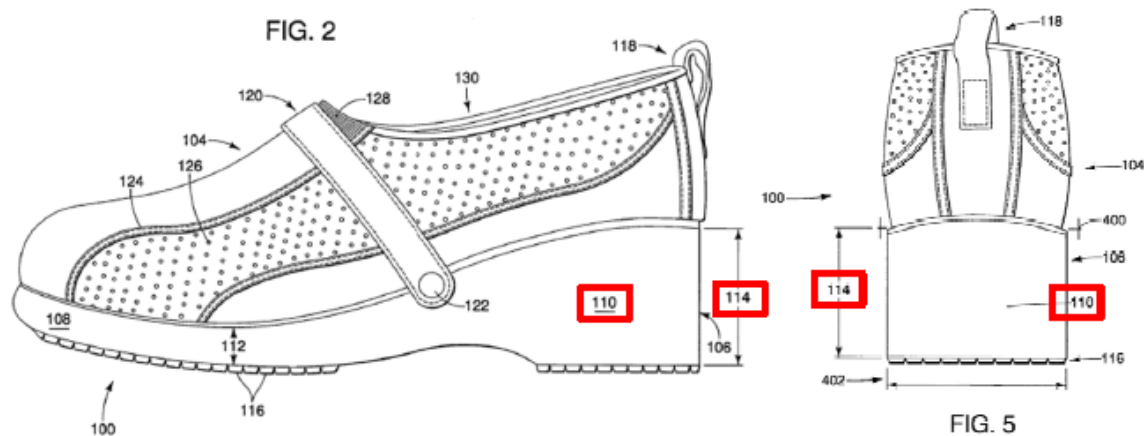
Based on the full record before us, Petitioner persuades us, and we find, that Umezawa teaches or suggests “a sole section coupled to the upper section.”

d) “wherein the sole section includes: a heel platform having a first height that is substantially uniform around a perimeter of the heel platform”

Petitioner argues that one of ordinary skill in the art would have understood that Umezawa’s disclosure of a known golf shoe with a known outsole and “insole having a consistent-thickness heel section” teaches or

suggests the limitation. Pet. 22–24 (citing Ex. 1002 § IX.A.d, ¶ 72; Ex. 1006 ¶ 32, 33, 52, 61–69, 72, Figs. 1–4).

Petitioner also argues that, to the extent that Umezawa does not disclose the claimed heel platform, Gallas discloses “heel platform 10 that has a substantially uniform height around a perimeter of the heel platform.” Pet. 32 (citing Ex. 1002 ¶ 80), 35–36 (citing Ex. 1002 § IX.B.b.; Ex. 1020 ¶¶ 20, 28, 29, Figs. 2, 5). Petitioner’s annotated Figures 2 and 5 of Gallas are reproduced below.



Figures 2 and 5 show a side view and back view, respectively, of a golf shoe with boxes added around reference numbers 110 and 114. Ex. 1020 ¶¶ 5, 8. Reference number 110 is for a rear portion, and reference number 114 is for an elevation. *Id.* ¶ 20.

(1) Patent Owner’s Response

Patent Owner responds that Petitioner does not point to any express disclosure in Umezawa for the claimed heel platform because there is none and instead Petitioner relies on imprecise annotations of schematic diagrams that are inaccurate, internally inconsistent, and rely on “rough, non-scale schematic diagrams as evidence of dimensions.” PO Resp. 39 (citing Pet. 24; Ex. 1002 § IX.A.d, ¶ 72; Ex. 2008 ¶¶ 191–198, 265). Patent Owner

also argues that extrapolating from the consistent thickness of platform 16 to a heel platform with uniform height ignores that the relied-upon portions of Umezawa are cross-sections of the forefoot only and ignores the “perimeter” aspect of the claim language. *Id.* at 40 (citing Pet. 23; Ex. 1006 ¶¶ 17–19; Ex. 2008 ¶ 195). Patent Owner further argues that Petitioner’s argument is inconsistent with the arguments that the midsole is thicker near the heel than at the toe. *Id.* (citing PO Resp. 25–32, 44–45; Ex. 2008 ¶ 202).

Patent Owner also responds that the asserted understanding of generic statements in Umezawa “is unavailing,” would not convey anything about heel platform height, and is based on “contradictory and unreliable” testimony. PO Resp. 40 (citing Pet. 22–23; Ex. 2008 ¶¶ 197, 200–201). Patent Owner further responds that Petitioner’s position amounts to an inherency argument without meeting the high standard required. *Id.* at 40–41.

Patent Owner further responds that Gallas does not disclose the claimed heel platform because the back of the heel has one height and the front of the heel has another height. PO Resp. 41–42 (citing Ex. 1020 ¶¶ 20, 21, Fig. 2). Patent Owner argues that Gallas describes that rear portion 110 may taper toward the front portion and that its shoe can be slanted down from back to front. *Id.* at 42 (quoting Ex. 1020 ¶¶ 17, 21). Patent Owner, thus, argues that Gallas shows and contemplates a slanted heel, not a uniform height heel. *Id.* (citing Ex. 1020 ¶ 17; Ex. 2008 ¶ 200).

(2) Petitioner’s Reply

Petitioner replies that Umezawa expressly discloses that “T” is the thickness of midsole 10, except at sidewall 18. Pet. Reply 12 (citing Ex. 1006 ¶ 52). Petitioner argues that one of ordinary skill in the art would have understood that “a golf shoe having a known or typical outsole and

insole, along with a midsole having a consistent thickness heel section would result in a heel platform with a substantially uniform height around its perimeter.” *Id.* (citing Ex. 1002 ¶ 72). Petitioner also argues that known and conventional shoes included this feature. *Id.* Petitioner further argues that Patent Owner’s declarant relies on Umezawa’s Figure 1, which shows a side view, not a cross section of the heel, and does not show height T. *Id.* (citing Ex. 2008 ¶ 193).

Petitioner also replies that Gallas expressly teaches a singular elevation. Pet. Reply 13 (citing Ex. 1020 ¶¶ 21, 28, 30). Petitioner argues that the rear portion can optionally be tapered, as Patent Owner’s declarant agreed, or can be flat from front to back. *Id.* (citing Ex. 1022 ¶ 16; Ex. 1023, 79:11–81:6). Petitioner also argues that one of ordinary skill in the art would have understood that the heel platform of Gallas “having only a small degree of height change from the front to the back” meets the limitation. *Id.* (citing Ex. 1022 ¶ 17). Petitioner further argues that it would have been understood that “the ‘angle of the shoe slant[s] down from the back to the front’ refers to the height change between the heel and the toe section, not that the heel platform itself must be slanted.” *Id.* at 13–14 (citing Ex. 1022 ¶ 17).

(3) Patent Owner’s Sur-Reply

Patent Owner replies that “Umezawa never discloses heel height” and that Petitioner’s positions regarding different limitations are contradictory, in particular, Petitioner’s arguments that the Umezawa’s heel has a uniform height because the insole has a uniform thickness and that the forefoot is thicker near the heel. PO Sur-reply 17 (citing PO Resp. 39–43; Ex. 2008 ¶¶ 191–207). Patent Owner also argues that Petitioner admits that its position is based on a generic reference to “known” outsoles and insoles. *Id.*

(citing Pet. Reply 12–13). According to Patent Owner, Petitioner presents an inherency argument. *Id.* Patent Owner further argues that Petitioner’s testimonial evidence does not establish that conventional shoes had the claimed feature and is not reliable. *Id.* at 17–18 (citing PO Resp. 25–32; Ex. 1002 ¶¶ 3–9; Ex. 2022, 28:8–29:7).

Patent Owner further replies that the heel platform of Gallas has downward slope and “may” appears 139 times in Gallas before virtually every description. PO Sur-reply 18 (citing PO Resp. 8–9, 41–43; Pet. Reply 13; Ex. 1020 ¶¶ 17, 21; Ex. 2008 ¶ 200). Patent Owner argues that Petitioner mischaracterizes its declarant’s testimony and its declarant rejected that “may” indicates the taper is optional. *Id.* (citing Pet. Reply 13; Ex. 1023, 81:9–11). Patent Owner also argues that there is no disclosure of a non-tapered heel and the tapered heel of Gallas is undisputedly not substantially uniform in height under any reasonable interpretation. *Id.* at 18–19.

(4) Petitioner Shows that Gallas Teaches or Suggests the Limitation

The cited portions of Gallas describe and show that its golf shoe 100 has sole 106 that includes front portion 108 that “may correspond to the toes of the human foot” and rear portion 110 that “may correspond to the heel of the human foot.” Ex. 1020 ¶ 20, Figs. 2, 5. Another cited portion of Gallas describes that “sole 106 may have an elevation, for example, an elevation that corresponds to the front of the foot 112 and an elevation that corresponds to the heel of the foot 114” and that, “[f]or example, the rear portion 110 may be elevated and may taper toward the front portion 108.” *Id.* ¶ 28. We also credit Petitioner’s testimonial evidence regarding the

claimed heel platform because the cited portions of Gallas support it.

Ex. 1002 § IX.B.b.; Ex. 1020 ¶¶ 20, 28, 29, Figs. 2, 5.

Although we agree with Patent Owner that Gallas describes that its golf shoe 100 “may *taper toward* the front portion [108]” (PO Resp. 41–42; Ex. 1020 ¶ 28), we do not agree that Gallas thereby fails to teach or suggest the claimed heel platform. In addition to using the phrase “may taper,” Gallas expressly identifies that a “taper toward the front portion” is an “example,” thus indicating other embodiments within the scope of the disclosure of Gallas may not have a taper. *See id.*

Gallas also expressly describes elevation 114 corresponding to the heel but does not describe elevation 114 as tapering. *See* Ex. 1020 ¶ 28. Gallas further provides ranges of elevation for the entire rear portion 110, not some portion of rear portion 110 that would indicate rear portion 110 has a taper. *See id.*

Even if every embodiment of rear portion 110 had a taper, the claim requires the “heel platform” to have “a first height that is *substantially uniform* around a perimeter of the heel platform.” Ex. 1001, 43:29–30 (emphasis added). Patent Owner does not present an argument how that claim language would exclude rear portion 110 that is partially tapered. *See* PO Resp. 41–42; PO Sur-reply 18–19.

Based on the full record, for the reasons above, Petitioner persuades us, and we find, that Gallas teaches or suggests a sole section that includes “a heel platform having a first height that is substantially uniform around a perimeter of the heel platform.” Below we analyze Petitioner’s proposed combination of Umezawa and Gallas.

- e) *“wherein the heel platform is constructed of a first material having a first compression factor”*

Petitioner contends that one of ordinary skill in the art would have understood that “the heel disclosed in Umezawa would be made of a material inherently having some compression factor.” Pet. 25 (citing Ex. 1002 ¶¶ 72, 74; Ex. 1006 ¶ 36), 35 (citing Ex. 1002 ¶ 86). Petitioner also contends that one of ordinary skill in the art would have understood that the heel of Gallas is “made of a material inherently having some compression factor.” *Id.* at 36 (citing Ex. 1002 ¶ 87).

We credit Petitioner’s testimonial evidence that the heel platforms of Umezawa and Gallas are made of some material having some compression factor. Ex. 1002 ¶¶ 74, 87. Patent Owner does not present an argument for this limitation. *See* PO Resp. 33–45.

Based on the full record, Petitioner persuades us, and we find, that Umezawa and Gallas teach or suggest “wherein the heel platform is constructed of a first material having a first compression factor.”

- f) *“a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression”*

Petitioner contends that Umezawa teaches the above-quoted limitations because Umezawa discloses a midsole having low elastic part 20 and high elastic part 22, with low elastic part 20 being more compressible than high elastic part 22. Pet. 25–27 (citing Ex. 1001, Fig. 112; Ex. 1002 § IX.A.e; Ex. 1006 ¶ 36, Figs. 2, 3, 6), 35 (citing Ex. 1002 ¶ 86). According

to Petitioner, the difference in elastic moduli of low and high elastic parts 20, 22 creates a compression gradient. *Id.* at 27–28 (citing Ex. 1006 ¶¶ 36, 38, 43).

(1) Patent Owner’s Response

Patent Owner responds that Petitioner applies an incorrect claim construction of “first” and “second” materials being the same to all its challenges and, thus, all its challenges must fail under the correct construction. PO Resp. 20–22 (citing Pet. 22–25, 25 n.1, 41–42, 56–59, 66–69), 25. Patent Owner argues that the defect cannot be cured through new reply arguments and Petitioner consciously declined to apply a different interpretation in its Petition. *Id.* at 23–24. Patent Owner, thus, argues that Petitioner fails to show Umezawa discloses a forefoot platform “constructed of a second material” that is somehow different from the first material for the above reasons. *Id.* at 33.

Patent Owner also responds that Petitioner fails to show “a second material having a ‘gradient compression factor’” because Umezawa’s high elastic part 22 is near both the inner and outer edges of its midsole. PO Resp. 33–36 (citing Ex. 1006, code (57), ¶¶ 37, 49, 50, 61, 63, 65, 68, 72, 77, 78, 83, Figs. 2–6; Ex. 2008 ¶¶ 114–118, 181–189). Patent Owner argues that the configuration of low elastic part 20 surrounded by high elastic part 22 is in every embodiment of Umezawa and core and crucial part of Umezawa’s design. *Id.* at 36–37 (citing Ex. 1006 ¶¶ 37, 39, 61, 62, Figs. 2–5, 8–15; Ex. 2008 ¶¶ 117–118, 185–187).

Patent Owner also argues that Umezawa “does not disclose progressively decreasing compressibility” and “teaches away from it.” PO Resp. 37. Patent Owner further argues that “in Umezawa (moving from inside to outside) compressibility (1) remains at a constant low level

throughout the significant area comprising inner high elastic part 26, (2) dramatically *increases* at the junction between ‘inner high elastic part 26’ and ‘low elastic part 20’ and (3) finally returns (at ‘high elastic part 22’) to the *same* low level of compressibility that it started at.” *Id.* at 38 (citing Ex. 2008 ¶¶ 116, 185, 189).

In Patent Owner’s view, whatever the scope of “gradient compression factor,” it would not encompass Umezawa’s no net change in compressibility between the inner and outer edges of its forefoot platform. PO Resp. 38–39 (citing Pet. 19; Ex. 2008 ¶¶ 185, 189). Patent Owner also contends that its arguments establish that Umezawa does not disclose that the level of compression near an inner edge is greater than the level of compression near an outer edge of the shoe. *Id.* at 39 (citing Ex. 2008 ¶¶ 184, 189).

(2) *Reply Arguments*

Petitioner replies that the claims only require more compression “near” or “proximal to” the inner edge, and “edge” is defined as the portion of the shoe where the foot sits. Pet. Reply 9. Petitioner argues that Umezawa plainly discloses the limitation. *Id.* at 9–10 (citing PO Resp. 35; Ex. 1006, Figs. 2–5; Ex. 1022 ¶¶ 11–12; Ex. 1023, 57:2–59:16). Petitioner also argues that Patent Owner points to a measurement that is the width of inner high elastic part 26 and does not correlate to “near” or “proximal to” where the foot sits. *Id.* at 10.

Petitioner further argues that (1) Patent Owner’s declarant agreed that low elastic part 20 extends closer to the edge of the midsole in Figure 3 and (2) Patent Owner’s annotated Figure 3 is incorrect. Pet. Reply 10–11 (citing PO Resp. 37; Ex. 1006, Fig. 3; Ex. 1022 ¶ 13; Ex. 1023, 55:8–21).

Petitioner additionally argues that Patent Owner’s declarant admitted that

Umezawa discloses that its midsole compresses more on the inside than the outside of the forefoot and that “the wearer’s foot inclines upward toward the outside of the shoe,” confirming that the wearer’s foot is on low elastic part 20. *Id.* at 11–12 (citing Ex. 1022 ¶ 14; Ex. 1023, 60:11–16, 61:13–63:5).

Patent Owner replies that “gradient compression factor” requires being increasingly less compressible from inner to outer edge of the forefoot platform. PO Sur-reply 13–14 (citing Pet. 18; Inst. Dec. 11; PO Resp. 33–39; Pet. Reply 9). Patent Owner argues that Umezawa teaches no net change in compressibility from inner to outer edge. *Id.* at 14–15 (citing PO Resp. 33–39; Ex. 1006, Figs. 2–5; Ex. 2008 ¶¶ 114–118). Patent Owner also argues that Petitioner has no meaningful reply and tries to rewrite its proposed interpretation of “gradient compression factor.” *Id.* at 15 (citing Pet. Reply 9 n.5).

Patent Owner further argues that Petitioner ignores “crucial aspects of Umezawa’s disclosure” that inner high elastic part 22 transfers force from the foot to the ground, does not deform much, and contributes to great head speed. PO Sur-reply 15–16 (citing PO Resp. 36–37; Pet. Reply 10; Ex. 1006 ¶ 39; Ex. 2008 ¶¶ 117–118, 185–187). In Patent Owner’s view, low elastic part 20 bounds the inner and outer sides, and Umezawa cannot satisfy Petitioner’s interpretation of “gradient compression factor.” *Id.* at 16 (citing Ex. 2008 ¶¶ 117–118, 185–187).

(3) Petitioner Shows that Umezawa Teaches or Suggests the Limitation

The cited portions of Umezawa disclose and show that “midsole 10 has a low elastic part 20 and a high elastic part 22,” “[t]he elastic modulus of the low elastic part 20 is lower than that of the high elastic part 22,” and

“[w]hen a compression load is applied to the midsole 10, the low elastic part 20 is more easily deformed than the high elastic part 22.” Ex. 1006 ¶ 36, Fig. 2. Other cited portions disclose and show that, in midsole 10, “thickness of the low elastic part 20 and high elastic part 22 gradually changes along the inclined surface 24,” so that “the compression deformation in the midsole 10 changes continuously along the inclined surface 24 from the inside to the outside.” *Id.* ¶ 43, Figs. 3, 6.

Another cited portion of Umezawa describes that:

When a golf player wears these golf shoes 2 and the body weight of the golf player is applied to the bottom part 6, this midsole 10 is compressed. Since the thickness of the low elastic part 20 is larger in the inside, the inside compression deformation is larger. Since the thickness of the high elastic part 22 is larger in the outside, outside compression deformation is smaller. In this midsole 10, applying the body weight generates unbalanced deformation. Deformation of the midsole 10 displaces the position of an upper surface 28 (FIG. 1) of the insole 8. The downward displacement of the upper surface 28 in the inside is larger than the downward displacement of the upper surface 28 in the outside. The insole 8 inclines upward from the inside to the outside.

Ex. 1006 ¶ 38.

We credit Petitioner’s testimonial evidence for the recited forefoot platform, because the cited portions of Umezawa support it. Ex. 1002 § IX.A.e; Ex. 1006 ¶¶ 36, 38, 43, 83, Figs. 1–3, 15.

We find that Figure 2 of Umezawa shows “a forefoot platform juxtaposed to the heel platform.” Patent Owner does not dispute that. *See* PO Resp. 33–45. Based on the cited portions of Umezawa quoted above, we also find that Umezawa discloses that “the forefoot platform is constructed of a second material” because its forefoot platform has low elastic part 20 and its heel platform is made of high elastic part 22 that is different in some

manner to low elastic part 20, specifically its compression deformability.
Ex. 1006 ¶¶ 36, 43, Fig. 2.

Moreover, we would come to the same determination that Umezawa discloses a “forefoot platform [that] is constructed of a second material,” under an interpretation of first and second materials being the same material, because Umezawa’s forefoot platform also has high elastic part 22 that is the same material in its heel platform. Ex. 1006 ¶¶ 36, 43, Fig. 2. Patent Owner’s arguments regarding first and second materials, therefore, do not show a fault in Petitioner’s argument.

Also, based on Petitioner’s citations to Umezawa, we find that it discloses the “second material ha[s] a gradient compression factor,” because the “thickness of the low elastic part 20 and high elastic part 22 gradually changes along the inclined surface 24,” so that “the compression deformation in the midsole 10 changes continuously along the inclined surface 24 from the inside to the outside.” Ex. 1006 ¶ 43, Figs. 3, 6. We also find that Umezawa’s disclosure corresponds with the meaning of “gradient compression factor” indicated by Figure 93 of the ’768 patent and its related description, as argued by Petitioner. Pet. 17–18; Ex. 1001, 27:47–67, Fig. 93.

Regarding Patent Owner’s argument that the “gradient compression factor” must be increasingly less compressible from inner edge to outer edge *of the forefoot platform*, because that is the proposed interpretation, Patent Owner’s argument does not consider the entirety of the claim language. Claim 1 recites that the “second material ha[s] a gradient compression factor” and that “the second material compresses to a first level *near an outer edge* of the sole section and the second material compresses to a second level *near an inner edge* of the sole section.” Ex. 1001, 43:38–44:1

(emphases added). The claim language itself plainly places several limitations on the second material, specifically “having a gradient compression factor” and “compress[ing] to a first level near an outer edge of the sole section” and “to a second level near an inner edge of the sole section.” *See id.*

As we found above, Umezawa expressly indicates that, where the thicknesses of low and high elastic parts 20, 22 gradually change along inclined surface 24, compression deformation continuously changes, because “insole 8 [still] inclines upward from the inside to the outside,” when the “weight of the golf player is applied to the bottom part 6” and “midsole 10 is compressed,” even with the surrounding material of only high elastic part 22. Ex. 1006 ¶¶ 38, 43. Therefore, Umezawa teaches or suggests a second material having a “gradient compression factor” or a material that “become ‘increasingly less compressible’ from the inner edge to the outer edge of the forefoot platform.”

Because paragraph 38 of Umezawa expressly describes compression of its midsole 10 “when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe,” we find that it teaches or suggests a “second material [that] compresses to a first level near an outer edge of the sole section and . . . compresses to a second level near an inner edge of the sole section,” because it also discloses that, “[s]ince the thickness of the low elastic part 20 is larger in the inside, the inside compression deformation is larger” and “[s]ince the thickness of the high elastic part 22 is larger in the outside, outside compression deformation is smaller.” Ex. 1006 ¶ 38. The same paragraph of Umezawa also teaches or suggests that “the second level of compression is greater than the first level of compression,” because it expressly states that “the inside compression deformation is larger.” *Id.*

Based on the full record before us, Petitioner persuades us, and we find, that Umezawa teaches or suggests

a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression.

g) “wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness”

Petitioner asserts the above-quoted limitations are features common in most shoes and that Umezawa would have been understood to teach that “the sole is thicker at a position proximal to the front edge of the heel platform than at the toe portion.” Pet. 28–29 (citing Ex. 1002 § IX.A.f, ¶ 75; Ex. 1006, Fig. 1), 35 (citing Ex. 1002 ¶ 86). Petitioner alternatively argues that the features are described in Applicant’s admitted prior art and that one of ordinary skill in the art would have been motivated to include them in Umezawa. *Id.* (citing Ex. 1001, 1:63–2:6, 2:14–15; Ex. 1002 ¶¶ 76, 77).

In the challenge based on Umezawa and Gallas, Petitioner argues that, to the extent that Umezawa does not disclose the above-quoted limitations, Gallas discloses them. Pet. 32 (citing Ex. 1002 ¶ 80), 36–37 (citing Ex. 1002 § IX.B.c.; Ex. 1020 ¶¶ 12, 17–19, 21, Fig. 2). Petitioner’s annotated Figure 2 of Gallas is reproduced below.

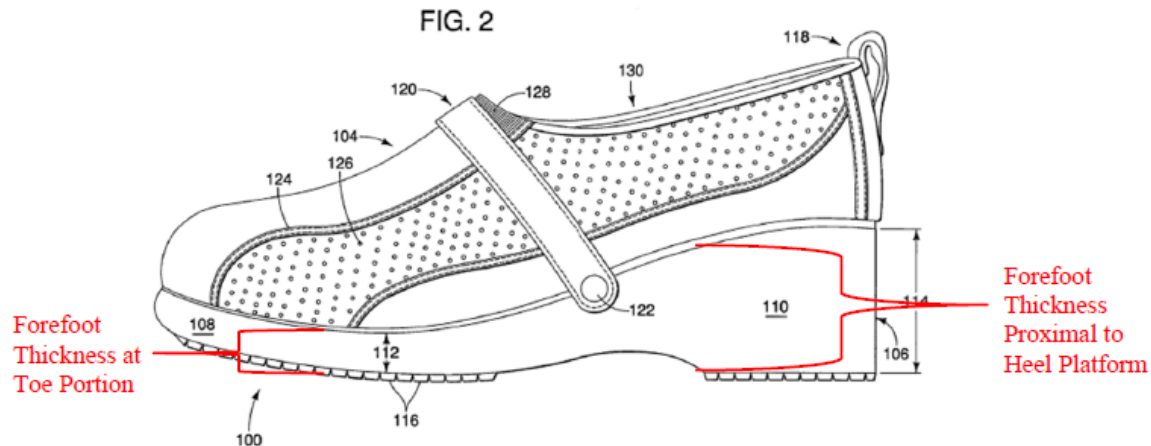


Figure 2 shows a side view of a golf shoe with Petitioner's annotations for "Forefoot Thickness at Toe Portion" and "Forefoot Thickness Proximal to Heel Platform." Ex. 1020 ¶ 5.

(1) Patent Owner's Response

Patent Owner responds that Petitioner's argument contradicts its earlier arguments that platform 16 has a constant thickness throughout. PO Resp. 44 (citing Pet. 23, 29; Ex. 2008 ¶ 202). Patent Owner argues that Umezawa does not disclose the limitations, and that Petitioner ignores the "at the outer edge" requirement. *Id.* (citing Ex. 2008 ¶¶ 203–204). Patent Owner also argues that Petitioner's only evidence is its unreliable testimony regarding conventional features. *Id.* (citing PO Resp. 25–32).

Regarding the proposed combination with Gallas, Patent Owner responds that "Petitioner's proposed motivations are conclusory and based on a misreading of Gallas, and ignore that Gallas' shoe provides an angled heel section," which Petitioner asserts would be undesirable. PO Resp. 45.

(2) Reply Arguments

Petitioner replies that its declarant explained that one of ordinary skill in the art would have understood from "Umezawa's disclosure that the 'material and structure for the outsole 12 are equal to those of known

outsole(s)’ that the sole is thicker near the front edge of the heel platform than at the toe portion.” Pet. Reply 13 (citing Ex. 1002 ¶ 75). Petitioner also argues that Patent Owner is incorrect that there is no disclosure and that Petitioner’s arguments are inconsistent or contradictory. *Id.* at 12–13 (citing Pet. 28–29; Ex. 1002 § IX.A.f.), 13 (citing PO Resp. 44–45). Petitioner also replies that Patent Owner “does not refute that Gallas discloses a thicker forefoot platform at the outer edge proximal the heel platform than at a toe portion.” *Id.* at 14 (citing PO Resp. 45).

Patent Owner replies that Umezawa does not disclose that the forefoot platform is thicker near the heel than near the toe. PO Sur-reply 17 (citing PO Resp. 44–45; Ex. 2008 ¶¶ 191–207). Patent Owner argues that Petitioner’s arguments for this limitation contradict its other argument that Umezawa’s heel has a uniform height because the insole has a uniform thickness. *Id.* Patent Owner also argues that Petitioner admits that its position is based on a generic reference to “known” outsoles and insoles. *Id.* (citing Pet. Reply 12–13). According to Patent Owner, Petitioner presents an inherency argument. *Id.* Patent Owner further argues that Petitioner’s testimonial evidence does not establish that conventional shoes had the claimed feature and is not reliable. *Id.* at 17–18 (citing PO Resp. 25–32; Ex. 1002 ¶¶ 3–9; Ex. 2022, 28:8–29:7).

(3) Petitioner Shows that Gallas Teaches or Suggests the Limitation

Petitioner cites portions of Gallas that describe its sole 106 has “an elevation at the front of the foot 112 and an elevation at the heel of the foot 114” and that “the rear portion 110 may have an elevation 114 which is greater than the elevation 112 of the front portion 108.” Ex. 1020 ¶ 21. Figure 2 of Gallas also shows that, at an edge of its shoe, a thickness near

the heel platform is greater than a thickness at a toe portion.” *See id.* Fig. 2. Another cited portion states that “[t]he shoe may position the foot such that the heel of the foot is elevated to a height above the front or toes of the foot.” *Id.* ¶ 12.

We credit Petitioner’s testimonial evidence regarding the limitation because the cited portions of Gallas support it. Ex. 1002 § IX.B.c.; Ex. 1020 ¶¶ 12, 17–19, 21, Fig. 2. For the reasons discussed above for a sole section including “a heel platform having a first height that is substantially uniform around a perimeter of the heel platform,” we do not agree with Patent Owner that the disclosure of Gallas is limited to shoes with an angled heel section. PO Resp. 45. We discuss below Petitioner’s motivation to combine that Patent Owner argues is conclusory. *See id.*

Based on the full record, Petitioner persuades us, and we find, that Gallas teaches or suggests “wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.”

h) Petitioner’s Asserted Rationale

(1) Analogous Art

Petitioner argues that Umezawa and Gallas are analogous art because both are in the same field. Pet. 33 (citing Ex. 1002 ¶ 83), 35 (citing Ex. 1001, codes (54), (57); Ex. 1002 ¶ 85; Ex. 1006, codes (54), (57); Ex. 1020, codes (54), (57)). The cited portions of Umezawa and Gallas show that they relate to shoes. *See, e.g.*, Ex. 1005, code (54) (“Shoe”); Ex. 1020, code (54) (“Golf Shoe”).

We also credit Petitioner’s testimonial evidence, because the citations to the record support it. Ex. 1002 ¶ 85; Ex. 1006, codes (54), (57); Ex. 1020,

codes (54), (57). Patent Owner does not present any arguments disputing whether Umezawa and Gallas are in the same field. *See* PO Resp. 33–45.

Based on the full record, we determine that Umezawa and Gallas are analogous art.

(2) Reason for Combining

According to Petitioner, one of ordinary skill in the art would have looked to Gallas and would have understood “that providing a drop in height from the heel of the shoe to the toe was common in shoe design and provides several benefits,” such as “improv[ing] the wearer’s weight distribution, spine angle, knee flex, and athletic performance.” Pet. 33 (citing Ex. 1020 ¶¶ 12, 17, 18). Petitioner also argues that incorporating a heel platform with a substantially uniform height around its perimeter, would have “provide[d] a flat surface for the wearer’s heel which provides additional stability.” *Id.* at 33–34 (citing Ex. 1002 ¶ 83; Ex. 1020 ¶ 17).

Patent Owner responds that “Petitioner’s motivations to combine are directly contrary” to descriptions of slanted heels in Gallas. PO Resp. 42–43 (citing Pet. 33–34; Ex. 2008 ¶ 200). Patent Owner also argues that Petitioner’s declarant repeats the argument in the Petition and should be disregarded. *Id.* at 43 (citing Ex. 1002 ¶ 83). Patent Owner further argues that Petitioner’s declarant cites to the disclosure in Gallas about the slanted heel. *Id.* (quoting Ex. 1020 ¶ 17). According to Patent Owner, because Petitioner and its declarant ignore the disclosure, there is a strong indicator of non-obviousness. *Id.*; *see also id.* at 45 (arguing that “Petitioner’s proposed motivations are conclusory and based on a misreading of Gallas, and ignore that Gallas’ shoe provides an angled heel section”).

A cited portion of Gallas discloses that its shoe 100 provides “a more effective weight distribution (e.g., weight on the heels during upswing and

on the toes during downswing), spine angle, and knee flex during the set up and throughout the golf swing,” and that its elevated heel “may facilitate weight transfer from the heels to the toes at impact” and “may compensate for any lack of flexibility, strength, and/or consistency in, for example, amateur players, older players, less athletic players, and others.” Ex. 1020 ¶ 17. Another cited portion discloses that the elevated heel “may improve the golfer’s ability to make a stronger move at the ball 14 on the downswing” and “may create flex in the knees which may further create torque during the backswing and may eliminate locking of the back leg.” *Id.* ¶ 18. We, therefore, credit Petitioner’s testimonial evidence that one of ordinary skill in the art would have combined Umezawa and Gallas for the benefits expressly described in Gallas. Ex. 1002 ¶ 83; Ex. 1020 ¶¶ 12, 17, 18.

As discussed for the recited heel platform, Patent Owner’s arguments regarding a slanted heel do not show a deficiency in Petitioner’s reason to combine Umezawa and Gallas, because we determine that the disclosure of Gallas is not limited to slanted heels. Based on the full record, we determine that one of ordinary skill in the art would have combined Umezawa and Gallas in the manner asserted for the benefits described in Gallas.

(3) Reasonable Expectation of Success

Petitioner argues that the proposed combination would have had a predictable result and that one of ordinary skill in the art would have had a reasonable expectation of success in combining Umezawa and Gallas. Pet. 33 (citing Ex. 1002 ¶ 82), 34 (citing Ex. 1002 ¶ 84).

We credit Petitioner’s testimonial evidence regarding predictable result and reasonable expectation of success. Ex. 1002 ¶ 84. Patent Owner

does not provide arguments specifically for predictable result or reasonable expectation of success. *See* PO Resp. 33–45.

Based on the full record, we determine that one of ordinary skill in the art would have had a reasonable expectation of success in combining Umezawa and Gallas in the manner asserted.

4. Dependent Claims 2–5 and 8

Petitioner refers to previous arguments that Umezawa teaches the additional limitations of dependent claims 2–5 and 8. Pet. 37 (citing Ex. 1002 ¶ 88).

Claim 2 depends from claim 1 and recites “wherein the forefoot section comprises: a mid-foot section; and a toe section proximal to the mid-foot section.” Ex. 1001, 44:8–11. Petitioner argues that Umezawa teaches the limitations of claim 2. Pet. 30 (citing Ex. 1002 § IX.A.g.; Ex. 1006, Figs. 1, 2).

Claim 3 depends from claim 1 and recites “wherein the second material comprises: a resilient material of varying density to provide a compressible gradient to provide the gradient compression factor.” Ex. 1001, 44:12–16. Petitioner argues that Umezawa teaches these additional limitations. Pet. 30–31 (citing Ex. 1002 ¶ 78).

Claim 4 depends from claim 3 and recites “wherein the resilient material comprises one or more of: a rubber, a gel, a foam, a synthetic material.” Ex. 1001, 44:17–19. Petitioner argues that Umezawa teaches a resilient material comprising a synthetic material. Pet. 31 (citing Ex. 1002 § IX.A.i.; Ex. 1006 ¶ 34).

Claim 5 depends from claim 1 and recites

wherein the second material comprises: a plurality of materials configured to provide a shape of the forefoot platform and to

provide the gradient compression factor, wherein a first material of the plurality of materials is one of a foam, a soft rubber, memory foam, a housing that holds a liquid, and a material that compresses under pressure and substantially returns to its uncompressed shape when the pressure is removed.

Ex. 1001, 44:20–28. Petitioner refers to its arguments for claims 1 and 4. Pet. 31–32 (citing Ex. 1002 ¶ 79).

Claim 8 depends from claim 1 and recites “wherein the sole section comprises: an insole; a mid-sole; and an out-sole.” Ex. 1001, 44:35–39. Petitioner argues that Umezawa teaches bottom part 6 with insole 8, midsole 10, and outsole 12. Pet. 32 (citing Ex. 1002 § IX.A.k.; Ex. 1006 ¶ 32).

We determine that Petitioner’s contentions regarding these dependent claims are fully supported by the record. We also credit Petitioner’s testimonial evidence because the cited portions of the record support it. Patent Owner does not provide arguments specifically for the challenged dependent claims. *See* PO Resp. 33–45.

Based on the full record, Petitioner persuades us, and we find, that Umezawa teaches or suggests the limitations of claims 2–5 and 8.

5. Objective Indicia of Non-Obviousness

Patent Owner argues that Petitioner’s declarant admitted that he “did not perform any analysis of any of the secondary considerations.” PO Resp. 67 (citing Ex. 2010, 117:14–118:2, 120:17–122:1). Petitioner replies that its declarant has considered Patent Owner’s objective indicia of nonobviousness and maintains that the claims are unpatentable. Pet. Reply 25 (citing Ex. 1022 ¶ 48). Patent Owner replies that Petitioner’s reply declaration is entitled to no weight because it parrots arguments in Petitioner’s Reply with no analysis. PO Sur-reply 25.

Based on the full record, we are satisfied that Petitioner's declarant has considered Patent Owner's asserted objective indicia of nonobviousness that was presented for the first time in Patent Owner's Response and could not have been considered for the Petition. Ex. 1022 ¶ 48.

a) Nexus

Patent Owner argues that "the requisite nexus exists here, owing to the legally and factually sufficient connection between the evidence of non-obviousness and the patented invention." PO Resp. 66. Petitioner does not present any arguments regarding nexus. *See* Pet. Reply.

Based on the full record, we determine that Patent Owner fails to show nexus between the claimed invention and the asserted objective indicia of nonobviousness. PO Resp. 66–71; PO Sur-reply 25–26. Patent Owner is not entitled to a rebuttable presumption of nexus, because Patent Owner has not shown that the asserted evidence is tied to a specific product that is the disclosed and claimed invention. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). Patent Owner identifies no product that is coextensive or nearly coextensive with the challenged claims. PO Resp. 66–71; PO Sur-reply 25–26.

Patent Owner also does not provide any evidence that the asserted objective indicia of nonobviousness is the direct result of unique characteristics of the claimed invention. *Fox Factory*, 944 F.3d at 1373–75; PO Resp. 66–71; PO Sur-reply 25–26. At best, Patent Owner merely implies that they are the result of unique characteristics of the claimed shoe. *See* PO Resp. 66–71.

For our analysis below, even if nexus were shown, we identify additional reasons why we would give little weight to the asserted objective indicia of nonobviousness.

b) Long-Felt Need

Patent Owner argues that Petitioner’s asserted references show “that the footwear industry has long been working on footwear designs intended to improve athletic performance,” but the shoes of the asserted prior art “are not prevalent in the market,” thereby indicating that there is still a “need for putting athletes into a better athletic position.” PO Resp. 67 (citing Ex. 2008 ¶¶ 277–278; Ex. 2010, 123:8–124:6). Patent Owner, thus, argues that “[t]his suggests that the concepts disclosed in these patents have not been accepted as solving the problem of the need for putting athletes into a better athletic position.” *Id.*

Petitioner replies that Patent Owner fails to show a recognized persistent need, fails to explain why the cited prior art did not meet the need, and fails to show that the claimed invention met the need. Pet. Reply 26 (citing Ex. 1022 ¶ 49). Petitioner also argues that no product practices the claims of the ’768 patent. *Id.* (citing Ex. 1022 ¶ 50). Patent Owner replies that none of the prior art was used in commercial products and failed to solve industry needs, thus demonstrating a long-felt need for the claimed invention. PO Sur-reply 25–26 (citing Ex. 2008 ¶¶ 277–278).

Based on the full record, we agree with Petitioner that Patent Owner fails to show a recognized persistent need, fails to explain why the cited prior art did not meet the need, and fails to show that the claimed invention met the need. Pet. Reply 26. We also determine that prior art shoes would have met Patent Owner’s alleged long-felt “need for putting athletes into a better athletic position.” *See, e.g.*, Ex. 1005, 2:38–41 (“An object of the present invention is to provide golf shoes helpful in smoothly swing without a golfer having to think about weight transfer by smoothly placing the center of body weight on the heel portion.”); Ex. 1006 ¶ 10 (“The object of the

present invention is to provide a shoe in which a wearer's body weight is easily applied to the inside of a foot."); Ex. 1008, 13:20–23 ("According to the present invention new footwear is provided accommodating the foot's natural angulation by providing a sole of dual-density materials which compensates the human foot to its environment."). Thus, even if nexus were shown, we would give no weight to Patent Owner's evidence of long-felt need.

c) Copying

Patent Owner argues that Patent Owner met with personnel from Petitioner and gave a presentation about the patent. PO Resp. 68–70 (citing Ex. 2008 ¶¶ 279–286; Ex. 2012 (Presentation Titled "Athletic Positioning Shoe: Presentation to Under Armour, August 22, 2013"), 13, 68). According to Patent Owner, it offered Petitioner an opportunity to acquire or license the technology, and Petitioner received physical samples for testing. *Id.* at 70 (citing Ex. 2008 ¶¶ 283–285; Ex. 2012, 47–49). Also, according to Patent Owner, Petitioner stopped responding and released a product that copied the athletic positioning claimed by the '768 patent. *Id.* at 70–71 (citing Ex. 1009; Ex. 2008 ¶¶ 285, 286).

Petitioner replies that Patent Owner fails to provide any analysis of Petitioner's products and any evidence that Petitioner's product practices the claims. Pet. Reply 26 (citing Ex. 1022 ¶ 51; Ex. 1023, 220:3–223:12). Patent Owner replies that infringement contentions provide analysis of Petitioner's products, "[d]irect evidence of copying is not required," and "ample, un rebutted circumstantial evidence" shows access and subsequent copying. PO Sur-reply 26 (citing Ex. 1025 (Athalonz's Second Supplemental Infringement Contentions); Ex. 2008 ¶¶ 279–286; Ex. 2012).

There is no dispute that a presentation was given, and subsequently Petitioner produced a shoe that has been accused of infringement. PO Resp. 68–71; Pet. Reply 25. Evidence of copying is more persuasive of nonobviousness when it shows that the other manufacturer has expended great effort to develop its own solution. The full record does not include such evidence. And, even if this were probative evidence of similarity, “[n]ot every competing product that arguably falls within the scope of a patent is evidence of copying” because “[o]therwise every infringement suit would automatically confirm the nonobviousness of the patent.” *Iron Grip Barbell Co. v. USA Sports Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). Thus, even if nexus were shown, we would give little weight to Patent Owner’s evidence of copying.

6. *Petitioner Shows by a Preponderance of the Evidence that Claims 1–5 and 8 are Unpatentable*

“Once all relevant facts are found, the ultimate legal determination [of obviousness] involves weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan.” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1361 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)). Above, based on full record before us, we provide our factual findings regarding (1) the level of ordinary skill in the art, (2) the scope and content of the prior art, (3) any differences between the claimed subject matter and the prior art, and (4) objective evidence of nonobviousness.

In particular, we find that (1) Petitioner’s proposed level of ordinary skill in the art is consistent with the prior art of record, (2) Umezawa and Gallas teach or suggest all the limitations of claims 1–5 and 8, (3) one of

ordinary skill in the art would have combined Umezawa and Gallas in the manner asserted with a reasonable expectation of success, (4) nexus has not been shown for the alleged objective indicia of nonobviousness, and, even if nexus were shown, Patent Owner's evidence of long-felt need and copying is entitled to little weight. Weighing these underlying factual determinations, a preponderance of the evidence persuades us that claims 1–5 and 8 of the '768 patent are unpatentable over Umezawa and Gallas.

E. Obviousness Based on Won and Talarico '911

1. Won (Ex. 1005)

Won relates to a golf shoe. Ex. 1005, code (57), 1:5–6. Figure 3 of Won is below reproduced.

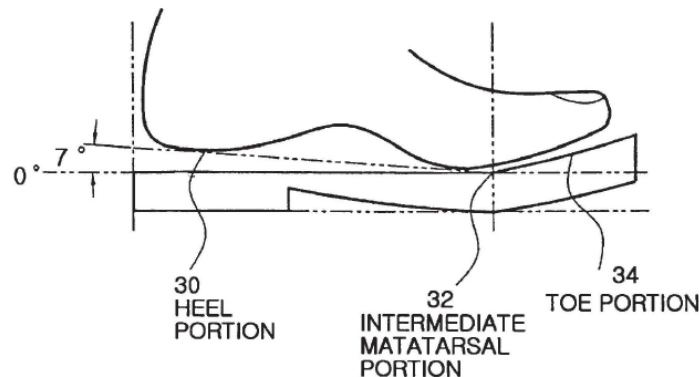


FIG. 3

Figure 3 shows a cross-sectional view illustrating the tilted angle of a sole. Ex. 1005, 3:12–13. The golf shoe includes heel portion (30), toe portion (34) formed forward of heel portion (30), and intermediate metatarsal portion (32) formed between heel portion (30) and toe portion (34). *Id.* at code (57); *see also id.* at 1:42–57 (describing conventional golf shoe). Heel portion (30) is angled between -7° and 7° from a horizontal line. *Id.* at code (57), 2:50–51; *see also id.* at 4:6–12 (describing heel portion tilted at 0°). Won also describes “golf shoes [that]

can be formed such that the inside surface and outside surface separated by a central longitudinal axis of the sole (or mid sole) are different from each other.” *Id.* at 4:47–50, Fig. 5. “The inside surface is soft surfaced and outside surface is hard surfaced, both of which are made from elastic materials.” *Id.* at 4:50–52, Fig. 5.

2. *Talarico '911 (Ex. 1008)*

Talarico '911 provides an article of footwear that includes a sole with a “sole forefoot portion [that] is comprised of different compressibilities of materials . . . thereby providing an effective inclined surface” because of “less compressible material at the lateral aspect of the forefoot than at the medial aspect.” Ex. 1008, code (57). Talarico '911 “is intended for any and all footwear wherein dual-density or dual-compressibility materials . . . may be incorporated into either the midsole, outersole, or innersole.” *Id.* at 1:11–15. In Talarico '911, “‘dual-density’ shall be understood particularly to mean ‘dual-compressibility.’” *Id.* at 1:17–18. Figures 5, 9, and 13 are reproduced below.



FIG. 5

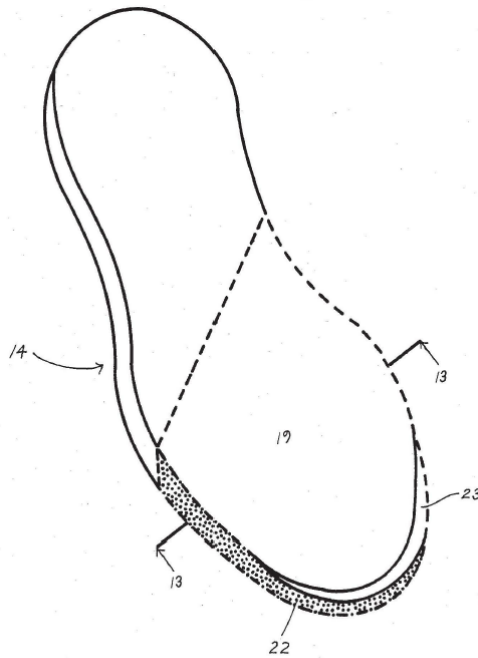


FIG. 9

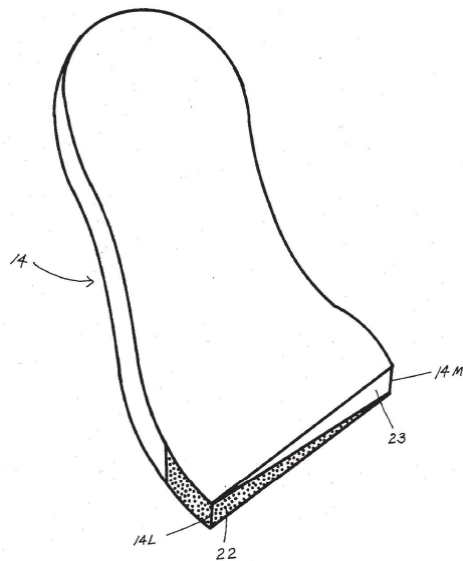


FIG. 13

Figure 5 is a plan view of a skeletal right foot viewed top to bottom showing a “dual-density forefoot valgus compensation” with a broken line.

Ex. 1008, 14:35–42. Figure 9 is a perspective plan view of a right midsole showing the dual-density forefoot valgus compensation in phantom, and Figure 13 is a perspective, cross-sectional view along line 13-13 of Figure 9. *Id.* at 14:67–15:6, 15:23–25.

Midsole 14 includes an area of a 45-degree split dual-density forefoot valgus compensation 19. Ex. 1008, 19:44–46, Fig. 9. Shaded area 22 represents denser material, and non-shaded area 23 represents a less dense material. *Id.* at 19:47–49, Figs. 9, 13. The use of different materials creates an effective upward slope 14L. *Id.* at 19:50–52, Fig. 13.

3. *Claim 1*

a) *“An athletic shoe comprises:”*

Petitioner contends that, to the extent the preamble is limiting, Won teaches or suggests an athletic shoe. Pet. 51 (citing Ex. 1002 § IX.D.a.; Ex. 1005, code (57), Figs. 1–5), 65 (citing Ex. 1002 ¶ 136).

The cited portions of Won describe and show a golf shoe. Ex. 1005, code (57), Figs. 1–5. We also credit Petitioner’s testimonial evidence regarding the preamble because the cited portions of Won support it. Ex. 1002 § IX.D.a.; Ex. 1005, code (57), Figs. 1–5. Patent Owner does not present an argument for the preamble. *See* PO Resp. 55–66.

Based on the full record, Petitioner persuades us, and we find, that, to the extent the preamble is limiting, Won teaches or suggests “[a]n athletic shoe.”

b) *“an upper section”*

Petitioner contends that Won teaches or suggests an upper section. Pet. 51–52 (citing Ex. 1002 § IX.D.b.; Ex. 1005, Fig. 1), 65 (citing Ex. 1002 ¶ 136).

The cited figure of Won shows an upper section. Ex. 1005, Fig. 1. We also credit Petitioner’s testimonial evidence regarding the limitation because the cited portion of Won supports it. Ex. 1002 § IX.D.b.; Ex. 1005, Fig. 1. Patent Owner does not present an argument for this limitation. *See* PO Resp. 55–66.

Based on the full record, Petitioner persuades us, and we find, that Won teaches or suggests “an upper section.”

c) “a sole section coupled to the upper section”

Petitioner refers to arguments based on Won and Norton, in which Petitioner contends that Won teaches or suggests the recited “sole section.” Pet. 52–53 (citing Ex. 1002 § IX.D.c., ¶¶ 116–117; Ex. 1005, code (57), Figs. 1, 3), 65 (citing Ex. 1002 ¶ 136).

The cited portions of Won describe and show a sole section coupled to an upper section. Ex. 1005, code (57) (“The golf shoes according to this invention comprises a sole . . .”), Figs. 1, 3. We also credit Petitioner’s testimonial evidence regarding the limitation because the cited portions of Won support it. Ex. 1002 § IX.D.c.; Ex. 1005, code (57), Figs. 1, 3. Patent Owner does not present an argument for this limitation. *See* PO Resp. 56–66.

Based on the full record, Petitioner persuades us, and we find, that Won teaches or suggests “a sole section coupled to the upper section.”

d) “wherein the sole section includes: a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor”

Petitioner argues that Won teaches the above-quoted limitations for the reasons asserted in the challenge based on Won and Norton and that one of ordinary skill in the art would have concluded from disclosures in

Talarico '911 that its heel platform has a substantially uniform height around its perimeter. Pet. 53–54 (citing Ex. 1002 § IX.D.d.; Ex. 1005, 2:51–53, 4:6–12, Figs. 2–7), 65–66 (citing Ex. 1002 ¶¶ 61–69, 137, 138; Ex. 1008, 6:56–62, 12:1–3, 21:22–23, Figs. 8–15). Petitioner argues that one of ordinary skill in the art would have understood that “the heel platform must be level from the inner edge to the outer edge to obtain the desired zero-degree tilt across the entire width of the heel, and thus uniform in height around the perimeter of the heel platform.” *Id.* at 54 (citing Ex. 1002 ¶ 118).

Petitioner also argues that Won describes a “conventional” shoe that would have been understood to include the claimed heel platform and that Won teaches bottom surfaces of its heel and toe platforms are almost parallel, thereby confirming flat surfaces from inside to outside edges. Pet. 55 (citing Ex. 1002 ¶¶ 61–69, 119; Ex. 1005, 1:42–50). According to Petitioner, one of ordinary skill in the art would have recognized that a conventional heel as shown in Figures 6 and 7 could be used in the embodiment of Figure 5 without altering the forefoot or the remainder of the shoe’s design. *Id.* (citing Ex. 1002 ¶ 120).

Petitioner further argues that one of ordinary skill in the art would have understood that Won’s heel “would be made of a material inherently having some compression factor.” Pet. 55 (citing Ex. 1002 ¶ 121). Petitioner alternatively argues that it would have been obvious to incorporate the heel platform of Talarico '911 into Won. *Id.* at 66 (citing Ex. 1002 ¶ 138).

(1) Patent Owner’s Response

Patent Owner responds that Won fails to show the recited heel platform, because Petitioner relies on “vague disclosures that do not say or show that the heel platform has a uniform height around the perimeter,” falls

back on purported knowledge in the art of conventional shoe designs, and “offers a conclusory, undeveloped backup obviousness argument.” PO Resp. 61. Patent Owner argues that the cited figures “only show the heel platform from the side, which does not show that the heel platform is of a uniform height all around the perimeter.” *Id.* (citing Pet. 54; Ex. 2008 ¶ 260). According to Patent Owner, “[n]o figure shows a heel platform with a uniform height all around the perimeter.” *Id.* (citing Ex. 2008 ¶¶ 260–262).

Patent Owner also responds that “Won *does not* disclose that the ‘heel portion is . . . substantially 0 degrees’ *from rear to front*” and those disclosures “all relate to the angle between the heel and the toe, not the height of the perimeter of the heel platform.” PO Resp. 62 (citing Pet. 54; Ex. 1005, 2:51–57; Ex. 2008 ¶ 261). Patent Owner argues that “Petitioner’s arguments hinge on the improper inference that a flat heel platform necessarily has a uniform height perimeter” and “a wide variety of non-uniform height perimeter designs may be used in conjunction with a flat base or flat bottom.” *Id.* (citing Ex. 2008 ¶ 262). Patent Owner further responds with reference to previous arguments that Petitioner’s contention based on the ordinarily skilled artisan’s understanding of a conventional shoe “is based exclusively on Mr. Delgatty’s unreliable opinions.” *Id.*; *see also id.* at 25–32 (arguing that Petitioner’s testimonial evidence regarding conventional shoes is entitled to little weight).

(2) Reply Arguments

Petitioner replies that Figures 2, 3, 6, and 7 of Won show a substantially flat heel from front to rear. Pet. Reply 22 (citing PO Resp. 62; Ex. 1002 ¶¶ 118–122). Petitioner argues that conventional shoes included the design trait. *Id.* (citing Pet. Reply 6–9).

Patent Owner replies that Petitioner's conventional shoe analysis fails, and that Won's figures are "wholly insufficient" to show measurable dimensions. PO Sur-reply 24 (citing PO Resp. 25–32; PO Sur-reply 11–13; Ex. 1022 ¶ 8; Ex. 2008 ¶¶ 265–268).

(3) Petitioner Shows that Won Teaches or Suggests the Limitation

Petitioner cites portions of Won that state "[i]t is preferred that said heel portion is tilted -5° ~ 5° and more preferable, substantially 0° " and that "[w]hen the heel portion is tilted 0° from the horizontal line . . . it is the best way to provide the best stabilized stance in addressing." Ex. 1005, 2:51–53, 4:6–12. Petitioner also relies on, at least, Figure 2 that clearly shows heel portion (30) meeting a 0° line and the 0° line being parallel to the ground. *See id.* Fig. 2.

We agree with Petitioner's declarant that one of ordinary skill in the art would have understood that Won describes and shows a uniform height heel section, because the cited portions of Won support that testimony. Ex. 1002 § IX.D.d., ¶ 118; Ex. 1005, 2:51–53, 4:6–12, Figs. 2–7. We, thus, agree with Petitioner's declarant that one of ordinary skill in the art would have understood that "the heel platform must be level from the inner edge to the outer edge to obtain the desired zero-degree tilt across the entire width of the heel." Ex. 1002 ¶ 118.

The parties do not dispute that Won's heel platform is constructed of some material. Pet. 55; PO Resp. 55–66. The parties' dispute regarding the interpretation of "first" and "second" materials does not affect our analysis of this limitation.

We do not agree with Patent Owner that the cited portions relate to the angle between heel portion (30) and toe portion (34), because Won describes

the relationship of each with respect to a “horizontal line.” PO Resp. 62; Ex. 1005, 2:51–57 (describing that “the golf shoes according to the present invention having the angle between the heel portion and horizontal line of $7\sim 7^\circ$, and an angle between the toe portion and horizontal line of $1\sim 5^\circ$ ”), 4:6–12 (describing that “the heel portion is tilted 0° from the horizontal line” and “toe portion (34) is tilted upward $1\sim 5^\circ$ from the horizontal line”).

Won expressly specifies, and illustrates, that the heel portion is tilted 0° with respect to the ground (and toe portion (34)) so as “to provide the best stabilized stance in addressing.” Ex. 1005, 4:6–12, Figs. 2, 6, 7. One of ordinary skill in the art would have also understood from Won’s Figure 5 and its related description that heel portion (30) does not cause a tilt to the insides of the shoes. *Id.* at 4:46–58, Fig. 5; *see also id.* at 6:28–36 (reciting “wherein the sole of said toe portion and said intermediate metatarsal portion excluding said heel portion is divided at a centerline in the longitudinal direction forming an outside sole surface of a first material and an inside sole surface of a second softer and more elastic material”). One of ordinary skill in the art, thus, would have understood that, “to provide the best stabilized stance in addressing,” Won’s heel portion (30) is not tilted from outside to inside of the shoe and has a substantially uniform height around the perimeter of the heel platform. *Id.* at 4:6–12, 4:46–58, Figs. 2, 5–7.

We also credit Petitioner’s testimonial evidence over Patent Owner’s testimonial evidence, because Won better supports Petitioner’s declarant. Ex. 1002 ¶ 118; Ex. 2008 ¶¶ 260–262. Based on our findings, we do not need to reach Petitioner’s alternate argument based on the conventional heel. Pet. 54; *see also* PO Resp. 25–32 (arguing that the testimony regarding conventional shoes is entitled to little weight), 62 (responding to argument based on the conventional shoe).

For the reasons above, based on the full record, Petitioner persuades us, and we find, that Won teaches or suggests a sole section that includes “a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor.”

- e) *“a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression”*

Petitioner argues that Won teaches the recited forefoot platform. Pet. 56–57 (citing Ex. 1002 § IX.D.e., Ex. 1005, 4:46–58, 6:28–36, Fig. 5), 66 (citing Ex. 1002 § IX.E.c.). Petitioner alternatively argues that, to the extent the limitation requires the forefoot platform to be “increasingly less compressible” from inner to outer edges, it would have been obvious in view of Talarico ’911’s express disclosures of “dual-density or dual-compressibility materials.” *Id.* at 66–68 (citing Ex. 1001, Fig. 112; Ex. 1008, 1:11–18, 11:42–55, 12:41–47, Figs. 9, 13).

According to Petitioner, Talarico ’911 discloses that “the varied density across the forefoot platform would cause the sole elements to compress more near their inner edge than near their outer edge when the weight of an athlete is applied to the shoe.” *Id.* at 68 (citing Ex. 1002 ¶ 139; Ex. 1008, code (57), 19:50–63). Petitioner argues that, during prosecution, the Examiner made a similar finding. *Id.* at 68–69 (citing Ex. 1002 ¶ 140; Ex. 1011, 15).

(1) Patent Owner's Response

Patent Owner responds that “Petitioner acknowledges that Won does not disclose a forefoot platform having a gradient compression factor.” PO Resp. 55 (citing Pet. 47–48, 56–57). Patent Owner argues that the cited portions of Won relate to an exterior surface at the bottom of the golf shoe. *Id.* at 55–56 (citing Ex. 1005, 4:45–49, Fig. 5; Ex. 2008 ¶ 139). Patent Owner also argues that Petitioner’s declarant agreed that this surface was a feature of an outsole. *Id.* at 56 (citing Ex. 2020, 116:19–117:13). Patent Owner further argues that its declarant explains that an exterior surface is not a forefoot platform and, consistent with this understanding, Petitioner’s other challenges do not map the forefoot platform to an exterior surface of a sole. *Id.* (citing Pet. 59–60; Ex. 2008 ¶ 139).

According to Patent Owner, Won shows a surface with negligible thickness consistent with the understanding and meaning of “surface” and the compressibility of a surface, if any, would be irrelevant to the limitation. PO Resp. 57 (citing Ex. 1005, Figs. 2–4; Ex. 2008 ¶¶ 139, 250). Patent Owner argues that Won’s negligibly thick surface does not have a gradient compression factor and Won never mentions compressibility. *Id.* (citing Ex. 2008 ¶¶ 140–145, 252).

Patent Owner also argues that one of ordinary skill in the art would not have viewed Won as being enabled (and, thus, not a credible reference), because its soft section would not be able to push spikes into the ground and the spikes on the hard section would be pushed further than the spikes on the soft section. PO Resp. 57–58 (citing Ex. 2008 ¶¶ 140–145, 252).

Patent Owner further argues that Petitioner never argued that Talarico ’911 would have been incorporated into Won as a second material, never identified any material for Won’s heel platform, and did not explain how the

heel platform material is different from the forefoot material in the proposed combination. PO Resp. 65 (citing Pet. 62–64, 66–69).

(2) Petitioner’s Reply

Petitioner replies that Talarico ’911 discloses that its features may be incorporated into “the midsole, outersole, or innersole,” and that both Won and Talarico ’911 disclose that the heel portions can be different from the forefoot. Pet. Reply 24 (citing Ex. 1005, 4:46–58, 6:28–36, Fig. 5; Ex. 1008, 1:14–16, 11:42–68, 15:15–22, 20:1–13, Figs. 8–15; Ex. 1022 ¶¶ 41–47; Ex. 1023, 70:11–71:19, 73:11–75:7). Petitioner, thus, argues that it would have been obvious to replace the forefoot platform of Won with Talarico ’911’s variable-compression sole element or to replace all of Won’s midsole with Talarico ’911’s midsole. *Id.* (citing Inst. Dec. 44; Ex. 1022 ¶¶ 45, 46).

Petitioner also replies that Patent Owner’s declarant acknowledged that Won’s sole or midsole can have the softer forefoot material and that Won does not support that the softer material is only on a surface with no thickness. Pet. Reply 19 (citing Pet. 56–59; PO Resp. 55–56; Ex. 1005, 3:14–15; Ex. 1022 ¶¶ 26–33; Ex. 1023, 21:2–19, 22:19–22). Petitioner also argues that Won discloses improved weight distribution, stability, and balance that can only be achieved by a compressible forefoot platform, not just a surface. *Id.* at 19 (citing Ex. 1005, 1:5–8, 2:36–63, claim 1).

Petitioner further argues that Patent Owner’s declarant admitted that Won’s shoes tilt inward toward the softer inside of the forefoot, thereby “confirming a softer material compressing more than the harder material on the outside.” *Id.* at 19–20 (citing Ex. 1023, 24:22–25:12, 35:13–18, 38:1–6; Ex. 1022 ¶¶ 30–33).

Regarding enablement, Petitioner replies that Patent Owner's declarant admits his understanding of Won does not make sense and would not work as described and claimed. Pet. Reply 20 (citing Ex. 1022 ¶ 34; Ex. 2008 ¶¶ 140–145). Petitioner, thus, argues that the enablement argument is based on a misunderstanding of Won's teachings. *Id.* (citing PO Resp. 57–58).

(3) Patent Owner's Sur-Reply

Patent Owner replies that, according to Petitioner's argument, “‘down’ means ‘up.’” PO Sur-reply 21 (citing Pet. Reply 20; Ex. 1022 ¶ 29; Ex. 2022, 55:9–10), 25 (citing Pet. 62–63; PO Resp. 66; Pet. Reply 24–25). Patent Owner argues that Won states that its spikes are pressed down to penetrate the ground and generate tilt. *Id.* at 21–22 (citing Ex. 1005, 4:52–57; Ex. 2008 ¶ 140).

Patent Owner also argues that Won never describes compression of the forefoot platform, and that Petitioner attempts to put forth a new theory based on how Won would be read. PO Sur-reply 22 (citing Pet. Reply 19–20). Patent Owner further argues that Petitioner mischaracterizes deposition testimony, and that Patent Owner's declarant testified that Won only refers to surfaces, not the materials of the sole. *Id.* (citing Ex. 1023, 20:13–21:1). In Patent Owner's view, Petitioner's declarant admitted that spikes are attached to a surface, a part of the outsole, and Petitioner admits that Won's teachings, as written, would not work. *Id.* (citing Pet. Reply 20; Ex. 2010, 116:19–117:13).

(4) Petitioner Shows that Won and Talarico '911 Teach or Suggest the Limitation

Based on the full record, we find that the cited portions of Won disclose and show “a forefoot platform juxtaposed to the heel platform.”

Ex. 1005, 6:28–36 (“wherein the sole of said toe portion and said intermediate metatarsal portion excluding said heel portion is divided”), Fig. 5. Patent Owner does not dispute that Won has “a forefoot platform juxtaposed to the heel platform.” *See* PO Resp. 55–66.

Another cited portion of Won describes that its “golf shoes can be formed such that the inside surface and outside surface separated by a central longitudinal axis of the sole (or mid sole) are different from each other,” and that “[t]he inside surface is soft surfaced and outside surface is hard surfaced, both of which are made from elastic materials.” Ex. 1005, 4:46–52; *see also id.* at 6:28–33 (reciting in claim 1 “wherein the sole of said toe portion and said intermediate metatarsal portion excluding said heel portion is divided at a centerline in the longitudinal direction forming an *outside sole surface of a first material and an inside sole surface of a second softer and more elastic material*”) (emphasis added).

Because Won describes that the “inside surface and outside surface . . . are different from each other,” the “inside surface is soft surfaced,” and the “outside surface is hard surfaced” (Ex. 1005, 4:46–52), we find that Won teaches or suggests a forefoot platform that “compresses to a first level near an outer edge of the sole section,” “compresses to a second level near an inner edge of the sole section,” and “the second level of compression is greater than the first level of compression,” as required by claim 1.

Also, because Won describes that the “inside surface is soft surfaced” and the “outside surface is hard surfaced,” we determine that one of ordinary skill in the art would have understood that Won’s inside material is made of an “elastic material” that is “soft surfaced” and its outside material is made of another “elastic material” that is “hard surfaced.” Ex. 1005, 4:46–52 (“The inside surface is soft surfaced and outside surface is hard surfaced,

both of which are made from *elastic materials*.”) (emphasis added), 6:28–36 (reciting “wherein the sole of said toe portion and said intermediate metatarsal portion excluding said heel portion is divided at a centerline in the longitudinal direction forming an *outside sole surface of a first material* and an *inside sole surface of a second softer and more elastic material*”) (emphases added), Fig. 5 (showing different materials).

Even if we agreed with Patent Owner’s reading of Won that its disclosure is limited to the inside and outside surfaces of the outsole (PO Resp. 55–57), Won still describes a forefoot platform that is constructed such that its inside and outside surfaces have different levels of compression, with the greater compression near the inner edge, thereby teaching or suggesting the limitation.

Regarding the parties’ dispute about whether Won is enabling or not, a non-enabling reference may be prior art to determine obviousness. *See Symbol Techs. Inc. v. Opticon Inc.*, 935 F.2d 1569, 1578 (Fed. Cir. 1991). We determine that Won is enabled, at least, for a sole that is divided at a centerline in the longitudinal direction to form an outer portion of a first material and an inner portion of a second softer and more elastic material. Ex. 1005, 4:46–52, 6:28–33, Fig. 5. We find that making such a sole would be within the undisputed level of ordinary skill in the art. Pet. 17–18; PO Resp. 13.

Turning to Talarico ’911, Petitioner cites portions that describe it “is intended for any and all footwear wherein dual-density or dual-compressibility materials . . . may be incorporated into either the midsole, outersole, or innersole” and that “‘dual-density’ shall be understood particularly to mean ‘dual-compressibility.’” Ex. 1008, 1:11–15, 1:17–18. Petitioner also cites Figures 9 and 13 of Talarico ’911 that show midsole 14

includes an area of a 45-degree split dual-density forefoot valgus compensation 19 that has shaded area 22 representing denser material and non-shaded area 23 representing a less dense material. *Id.* at 19:44–49. Talarico '911 describes that the use of different materials creates an effective upward slope 14L. *Id.* at 19:50–52, Fig. 13.

We credit Petitioner's testimonial evidence that one of ordinary skill in the art would have understood that "the varied density across the forefoot platform disclosed in Talarico '911 would cause the sole elements to compress more near their inner edge than near their outer edge when the weight of an athlete is applied to the shoe," because the cited portions of Talarico '911 support it. Ex. 1002 ¶ 139; Ex. 1008, code (57), 19:50–63.

Patent Owner responds that Won and Talarico '911 would not have rendered obvious a forefoot platform "constructed of a second material having a gradient compression factor." PO Resp. 65–66. We address those arguments below in our analysis of Petitioner's proposed combination.

Based on the full record before us, Petitioner persuades us, and we find, that Won and Talarico '911 teach or suggest

a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression.

- f) *“wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness”*

Petitioner argues that Won teaches or suggests the above-quoted wherein clause. Pet. 59 (citing Ex. 1002 § IX.D.f., ¶ 124; Ex. 1005, Fig. 6), 65 (citing Ex. 1002 ¶ 136). Petitioner also contends that “Won also teaches that the bottom surface of the toe portion may be parallel with the bottom surface of the heel portion, and that the upper surface of the toe portion is lower than that of the upper surface of the heel portion.” *Id.* at 60 (citing Ex. 1008, 1:46–53). Petitioner, thus, argues that Won “confirm[s] that the thickness of the forefoot platform proximal to the heel portion is greater than the thickness at the toe portion.” *Id.* (citing Ex. 1002 ¶ 126).

Petitioner further argues that the wherein clause recites features “common in almost all shoes, and has been a conventional design feature in athletic shoes, including in golf shoes, long before the ’768 patent’s priority date as it places the foot in a more natural position and is more comfortable for running, walking, and sports-related activities.” Pet. 59 (citing Ex. 1002 ¶ 124). According to Petitioner, one of ordinary skill in the art would have understood that Figures 6 and 7 of Won show a conventional shoe with the recited thicknesses or that the conventional forefoot platform shown could have been used in the embodiment of Figure 5. *Id.* at 59–60 (citing Ex. 1002 ¶¶ 61–69, 124, 125; Ex. 1005, Figs. 6, 7).

(1) Patent Owner’s Response

Patent Owner responds that Won does not disclose the recited thicknesses and that Petitioner relies only on Won for the limitation. PO Resp. 63, 65. Patent Owner argues that Figures 6 and 7 of Won show that its forefoot has a uniform thickness throughout. *Id.* at 63–64 (citing Ex. 2008

¶¶ 265–266). Patent Owner also argues that Won does not indicate that the embodiment of Figure 5 is intended to be used with other embodiments, and that Petitioner provides no reason to do so. *Id.* at 64. Patent Owner further argues that Petitioner’s conventional shoe arguments fail because they rely on unsupported opinion. *Id.* at 64–65 (citing PO Resp. 25–33; Pet. Reply 6–9; Ex. 1002 ¶ 67; Ex. 2008 ¶¶ 267–268).

(2) Reply Arguments

Petitioner replies that one of ordinary skill in the art would have plainly seen that Won’s forefoot is thicker near the heel than at the toe. Pet. Reply 22–23 (citing Pet. 59; PO Resp. 63, 64; Ex. 1002 ¶¶ 124–125), 25. Petitioner also argues that Patent Owner did not address that “Won teaches that the bottom surface of the toe portion may be parallel with the bottom surface of the heel portion, and that the upper surface of the toe portion is lower than that of the upper surface of the heel portion.” *Id.* at 23 (citing Pet. 60; Ex. 1008, 1:46–53), 25.

Patent Owner replies that Petitioner’s conventional shoe analysis fails, and that Won’s figures are “wholly insufficient” to show measurable dimensions. PO Sur-reply 24 (citing PO Resp. 25–32, 63–65; PO Sur-reply 11–13; Ex. 1022 ¶ 8; Ex. 2008 ¶¶ 265–268; Ex. 2022, 28:8–29:7). Patent Owner also argues that “nothing in Won’s description of this prior art shoe is probative of the *thickness* of the forefoot section (which Won depicts as uniform) as opposed to its orientation with respect to the heel.” *Id.* at 24–25 (citing Pet. Reply 25; Ex. 1008, 1:46–53).

(3) Petitioner Shows that Won Teaches or Suggests the Limitation

The cited portions of Won disclose and show that “[t]he bottom surface of the heel portion and the bottom surface (12) of the toe portion (8)

are almost in parallel.” Ex. 1005, 1:46–47, Fig. 6. They also disclose and show that “the upper surface of an intermediate metatarsal portion (10) of the toe portion of the sole is formed to be lower than that of the heel portion.” *Id.* at 1:51–53, Fig. 6. Petitioner’s annotated Figure 6 of Won is reproduced below.

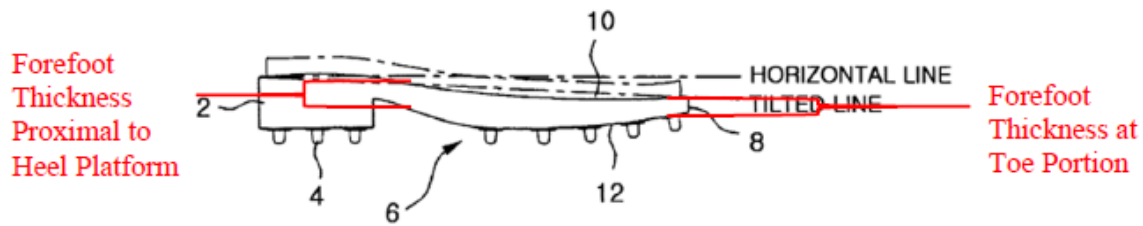


FIG. 6

Figure 6 shows “a cross sectional view illustrating the sole of a conventional golf shoe” with thickness lines labeled “Forefoot Thickness Proximal to Heel Platform” and “Forefoot Thickness at Toe Portion.” Pet. 59; Ex. 1005, 1:42–43, 3:16–17, Fig. 6. We credit Petitioner’s testimonial evidence, because the cited portions of Won support it. Ex. 1002 § IX.D.f., ¶¶ 124, 126, 136; Ex. 1005, Figs. 6, 7.

Also, because Won’s invention addresses the tilts of the toe portion and heel portion or the inside and outside surfaces of its sole, we find that one of ordinary skill in the art would have understood that the thicknesses of the forefoot proximal to the heel platform and the toe platform, as shown in Figure 6, would not be affected by adjusting the tilts of the toe and heel portions or the surfaces of the sole, as shown in Figure 5. Ex. 1005, 2:41–53, 4:45–57, Fig. 5. In particular, the scope of Won’s disclosure includes applying the surfaces shown in its Figure 5 to a conventional shoe as shown its in Figure 6. *See id.* at 4:45–57, Fig. 5.

Based on the full record, Petitioner persuades us, and we find, that Won teaches or suggests “wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.”

4. *Claims 2–5 and 8*

For claims 2 and 8, Petitioner refers to arguments based on Won and Norton. Pet. 65 (citing Ex. 1002 ¶ 136). For claims 3–5, Petitioner argues that Talarico ’911 teaches their limitations. *Id.* at 69 (citing Ex. 1002 § IX.E.e., ¶¶ 141, 143; Ex. 1008, 18:45–47). For claim 4, Petitioner argues that Won also discloses its limitations. *Id.* (citing Ex. 1002 § IX.E.e., ¶ 142; Ex. 1005, 4:50–52).

We determine that the record fully supports Petitioner’s contentions regarding these dependent claims. We also credit Petitioner’s testimonial evidence because the cited portions of the record support it. Patent Owner does not provide arguments specifically for the challenged dependent claims. *See* PO Resp. 45–65.

Based on the full record, Petitioner persuades us, and we find, that Won and Talarico ’911 teach or suggest the limitations of claims 2–5 and 8.

5. *Petitioner’s Asserted Rationale*

a) *Analogous Art*

Petitioner argues that Won and Talarico ’911 are in the same field. Pet. 63 (citing Ex. 1002 ¶ 133), 64–65 (citing Ex. 1001, codes (54), (57); Ex. 1002 ¶ 135; Ex. 1005, codes (54), (57); Ex. 1008, codes (54), (57)).

The cited portions of Won and Talarico ’911 show that they relate to shoe designs that incorporate compressibility differentials within the sole. Ex. 1005, code (57) (“This invention is related to a golf shoe that naturally

shifts the center of weight into a heel portion and cause smooth swing”); Ex. 1008, code (57) (“An article of footwear is provided” that includes a “sole forefoot portion [that] is comprised of different compressibilities of materials.”).

We also credit Petitioner’s testimonial evidence, because the citations to the record support it. Ex. 1002 ¶¶ 133, 135; Ex. 1005, codes (54), (57); Ex. 1008, codes (54), (57). Patent Owner does not present any arguments disputing whether Won and Talarico ’911 are in the same field. *See* PO Resp. 55–66.

Based on the full record, we determine that Won and Talarico ’911 are analogous art.

b) Motivation to Combine

According to Petitioner, one of ordinary skill in the art would have looked to Talarico ’911 and “would have understood that a sole that is increasingly less compressible from the inside to the outside of the forefoot” has “several benefits.” Pet. 63 (citing Ex. 1002 ¶ 133); *see also id.* at 68 (arguing that the ordinarily skilled artisan “would have been motivated to replace the vertical intersection of the two sole materials disclosed in Won with the angled intersection between the materials as disclosed in Talarico ’911 to gain the described benefits”) (citing Ex. 1002 ¶ 139).

Petitioner argues that, as explained in Talarico ’911, “its design is ‘generally preferred to the medial and lateral half dual-density methods because of a more even and gradual alteration of the weight-bearing gravitational forces as they are delivered and directed across the forefoot section of the footwear.’” Pet. 63 (citing Ex. 1008, 12:41–47, 13:23–45).

Based on the full record, we find that the cited portions of Talarico ’911 describe benefits of its design, as argued by Petitioner. Ex. 1008,

12:41–47, 13:23–45. Patent Owner does not dispute that Talarico '911's design provides benefits. *See* PO Resp. 65–66.

We, thus, credit Petitioner's testimonial evidence that one of ordinary skill in the art "would have understood that a sole that is increasingly less compressible from the inside to the outside of the forefoot to provide several benefits" because the cited portions of Talarico '911 support it. Ex. 1002 ¶ 133; Ex. 1008, 12:41–47, 13:23–45. We also agree with Petitioner's declarant that there would have been motivation "to replace the vertical intersection of the two sole materials disclosed in Won with the angled intersection between the materials as disclosed in Talarico '911 to gain the described benefits." Ex. 1002 ¶ 139.

The cited portions of Talarico '911 also support the testimony that "the varied density across the forefoot platform disclosed in Talarico '911 would cause the sole elements to compress more near their inner edge than near their outer edge when the weight of an athlete is applied to the shoe." Ex. 1002 ¶ 139; Ex. 1008, code (57), 19:50–63. We agree with Petitioner's declarant that incorporating Talarico '911 into Won would have had a predictable result. Ex. 1002 ¶ 132.

As discussed above, Won teaches or suggests "a forefoot platform juxtaposed to the heel platform," and both Won and Talarico '911 teach or suggest that, when the shoe is worn and weight is applied to the shoe, "the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression." Ex. 1005, 4:46–52, 6:28–36, Fig. 5; Ex. 1008, 1:11–15, 1:17–18, 19:44–52, Fig. 13.

Regarding a “forefoot platform [that] is constructed of a second material,” we find that the cited portions of Won teach or suggest that the heel portion is different from the forefoot, as argued by Petitioner. Pet. Reply 24; Ex. 1005, 4:46–58 (describing that the “inside surface is soft surfaced and outside surface is hard surfaced, both of which are made from elastic materials), 6:28–36 (reciting “wherein the sole of said toe portion and said intermediate metatarsal portion excluding said heel portion is divided at a centerline in the longitudinal direction forming an outside sole surface of a first material and an inside sole surface of a second softer and more elastic material”), Fig. 5 (showing different materials). Because Won’s use of soft and hard surfaces does not extend to its heel portion, we find that the material of Won’s heel portion and the materials used in the remainder of the sole are different in some manner. *See id.* at 6:28–36 (claiming that “the sole . . . excluding said heel portion is divided . . . forming an outside sole surface of a first material and an inside sole surface of a second softer and more elastic material”).

We also find that the cited portions of Talarico ’911 teach or suggest that the heel portion can be different from the forefoot, as argued by Petitioner. Pet. Reply 24; Ex. 1008, 11:42–68, 15:15–22, 20:1–13, Figs. 8–15. We further find that the materials in the heel portion and forefoot are different in some manner, specifically denser material 22 in the heel portion and dual-density materials 22, 23 in the forefoot are different. Ex. 1008, 11:42–68, 15:15–22, 20:1–13, Figs. 8–15; Ex. 1023, 70:11–71:19 (testifying that Talarico ’911 shows different materials 22 (shaded), 23 (not-shaded) in its Fig. 9), 73:11–75:7 (agreeing that Talarico ’911’s heel portion is not shaded in Fig. 13). Even if we adopted an interpretation of “first” and “second” materials being the same material, Talarico ’911 describes less

dense material 23 extending into both the heel portion and forefoot, thereby teaching the limitations “wherein the heel platform is constructed of a first material,” less dense material 23, and “wherein the forefoot platform is constructed of a second material,” same less dense material 23 along with denser material 22. *See, e.g., id.* at Fig. 9.

Patent Owner does not dispute that the heel portions and forefoots of Won and Talarico '911 are different. *See* PO Sur-reply 21 (arguing that Petitioner’s arguments are based on a mischaracterization of Won). Because we find that Won and Talarico '911 teach or suggest that heel portions and forefoots are different in the materials used in some manner, we find that Won and Talarico '911 each teaches or suggests a “forefoot platform [that] is constructed of a second material.”

Moreover, as determined above, Won discloses a heel platform preferably tilted 0° “to provide the best stabilized stance in addressing.” Ex. 1005, 2:51–53, 4:6–12. Talarico '911 discloses that a “sole forefoot portion is comprised of different compressibilities of materials” so that “the sole effectively slopes at an angle.” Ex. 1008, code (57). The material of Won’s heel platform “to provide the best stabilized stance” would be different from a forefoot “comprised of different compressibilities of materials” in Petitioner’s alternative combination. Pet. Reply 24; Ex. 1005, 2:51–53, 4:6–12; Ex. 1008, code (57).

For the reasons above, we determine that one of ordinary skill in the art would have been motivated “to replace the vertical intersection of the two sole materials disclosed in Won with the angled intersection between the materials as disclosed in Talarico '911” to gain the benefits described in Talarico '911, thereby providing a forefoot platform that is increasingly less

compressible from inner to outer edges. Pet. 68; Ex. 1002 ¶ 102. The proposed combination would have, thus, rendered obvious:

a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein, when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athlete shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression.

c) Reasonable Expectation of Success

Petitioner argues that the ordinarily skilled artisan would have had a reasonable expectation of success in making the proposed combination. Pet. 64 (citing Ex. 1002 ¶ 134). Patent Owner responds that Petitioner fails to explain how replacing Won's outer surface with affixed spikes with Talarico '911's sole could be reasonably expected to succeed. PO Resp. 59–60 (citing Ex. 2008 ¶¶ 256–259; Ex. 2010, 117:7–10), 66 (citing Ex. 2008 ¶¶ 269–270).

Petitioner replies that Patent Owner ignores what the references would suggest to an ordinarily skilled artisan and knowledge in the art. Pet. Reply 24–25 (citing PO Resp. 66). Petitioner also argues that one of ordinary skill in the art “would know how to incorporate Talarico '911's variably-compressible sole element with the sole or midsole of Won, and expect success in doing so.” *Id.* at 25 (citing Ex. 1022 ¶ 47).

Patent Owner replies that “Petitioner never explains how the proposed combination could be operable given Won's stated principle of operation” and its “arguments all hinge on fundamentally altering Won so that ‘down’ means up, and Won's exterior ‘surface’ can instead be any part of the sole.”

PO Sur-reply 25 (citing Pet. 62–63; PO Resp. 66; Pet. Reply 24–25; PO Sur-reply 21–25).

Based on the full record, we agree with Petitioner’s declarant that one of ordinary skill in the art would have been able to implement “the angled intersection between the materials as disclosed in Talarico ’911, as shown in Figs. 9 and 13” in place of the “vertical intersection of the two sole materials disclosed in Won.” Ex. 1002 ¶ 134. Both Won and Talarico ’911 evidence that both the vertical intersection between two materials and an angled intersection between materials were within ordinary skill in the art.

Also, as discussed above, we determine that one of ordinary skill in the art would have understood that Won’s inside material is made of a “soft surfaced,” “elastic material” and its outside material is made of a “hard surfaced,” “elastic material.” Ex. 1005, 4:46–52, 6:28–36, Fig. 5. We further find that Talarico ’911 teaches or suggests a forefoot with denser material 22 and less dense material 23 with upward slope 14L so as to provide a “sole forefoot portion [that] is comprised of different compressibilities of materials” because of “less compressible material at the lateral aspect of the forefoot than at the medial aspect.” Ex. 1008, code (57), 19:44–52, Figs. 9, 13. Talarico ’911 “is intended for any and all footwear wherein dual-density or dual-compressibility materials . . . may be incorporated into either the midsole, outersole, or innersole.” *Id.* at 1:11–15. In view of their comparable disclosures, we determine that applying Talarico ’911 to Won in the manner proposed by Petitioner would not affect the operability of Won.

For the reasons above, Petitioner persuades that one of ordinary skill in the art would have had a reasonable expectation of success in modifying Won in view of Talarico ’911 as proposed by Petitioner.

6. *Petitioner Shows by a Preponderance of the Evidence that Claims 1–5 and 8 are Unpatentable*

Weighing the underlying factual determinations, a preponderance of the evidence persuades us that claims 1–5 and 8 of the ’768 patent are unpatentable over Won and Talarico ’911. *Arctic Cat*, 876 F.3d at 1361.

F. *Obviousness Based on Won, Talarico ’911, and Gallas*

1. *Claims 1–5 and 8*

Petitioner argues that, to the extent that Won and Talarico ’911 do not disclose a heel platform “having a first height that is substantially uniform around a perimeter of the heel platform,” Gallas discloses the limitation, and Won, Talarico ’911 and Gallas would have rendered obvious claims 1–5 and 8. Pet. 70 (citing Ex. 1002 ¶¶ 144, 145), 72 (citing Ex. 1002 ¶ 151).

For the reasons given for the challenge based on Umezawa and Gallas, we find that Gallas teaches or suggests a sole section that includes “a heel platform having a first height that is substantially uniform around a perimeter of the heel platform.” Patent Owner responds that Gallas does not teach or suggest the recited heel platform and teaches away from it for the reasons asserted in response to the challenge based on Umezawa and Gallas. PO Resp. 66 (referencing *id.* at 39–43). As discussed above for that challenge, Patent Owner does not show a deficiency in Petitioner’s arguments.

For the preamble and remaining limitations of claim 1, Petitioner refers to arguments based on Won and Talarico ’911. Pet. 72 (citing Ex. 1002 ¶ 150). For the reasons above, Petitioner persuades us, and we find, that Won and Talarico ’911 teaches or suggests the preamble and remaining limitations of claim 1.

For dependent claims 2–5 and 8, Petitioner refers to arguments based on Won and Talarico '911. Pet. 72 (citing Ex. 1002 ¶ 150). For the reasons above, Petitioner persuades us, and we find, that Won and Talarico '911 teach or suggest the limitations of dependent claims 2–5 and 8.

2. *Petitioner's Asserted Rationale*

a) *Analogous Art*

Petitioner argues that Won, Talarico '911, and Gallas are in the same field. Pet. 70 (citing Ex. 1002 ¶ 147), 72 (citing Ex. 1001, codes (54), (57); Ex. 1002 ¶ 149; Ex. 1005, codes (54), (57); Ex. 1008, codes (54), (57); Ex. 1020, codes (54), (57)).

The cited portions of Won, Talarico '911, and Gallas show that they relate to shoes. Ex. 1005, code (57) (“This invention is related to a golf shoe”); Ex. 1008, code (57) (“An article of footwear is provided”); Ex. 1020, code (54) (“Golf Shoe”). We also credit Petitioner’s testimonial evidence, because the citations to the record support it. Ex. 1002 ¶¶ 147, 149; Ex. 1005, codes (54), (57); Ex. 1008, codes (54), (57); Ex. 1020, codes (54), (57). Patent Owner does not present any arguments disputing whether Won, Talarico '911, and Gallas are in the same field. *See* PO Resp. 65–66.

Based on the full record, we determine that Won, Talarico '911, and Gallas are analogous art.

b) *Reason to Combine*

According to Petitioner, one of ordinary skill in the art would have looked to Gallas and would have understood that incorporating a heel platform with a substantially uniform height around its perimeter, “as opposed to a heel platform that is angled, . . . provides a flat surface for the wearer’s heel which provides additional stability, e.g., during the player’s upswing, when weight is placed on the heels.” *Id.* at 71 (citing Ex. 1002

¶ 147; Ex. 1020 ¶ 17). Patent Owner does not provide arguments specifically for Petitioner's reason to combine Won, Talarico '911, and Gallas. *See* PO Resp. 65–66.

For the reasons given for the challenge based on Umezawa and Gallas, we determine that one of ordinary skill in the art would have further combined Won and Talarico '911 with Gallas in the manner asserted for the benefits described in Gallas.

c) Reasonable Expectation of Success

Petitioner argues that the ordinarily skilled artisan would have had a reasonable expectation of success in making the proposed combination. Pet. 71–72 (citing Ex. 1002 ¶ 148). We credit Petitioner's testimonial evidence regarding predictable result and reasonable expectation of success. Ex. 1002 ¶ 148. Patent Owner does not provide arguments specifically for predictable result or reasonable expectation of success. *See* PO Resp. 65–66.

Based on the full record, we determine that one of ordinary skill in the art would have had a reasonable expectation of success in combining Won, Talarico '911, and Gallas in the manner asserted.

3. Petitioner Shows by a Preponderance of the Evidence that Claims 1–5 and 8 are Unpatentable

Weighing the underlying factual determinations, a preponderance of the evidence persuades us that claims 1–5 and 8 of the '768 patent are unpatentable over Won, Talarico '911, and Gallas. *Arctic Cat*, 876 F.3d at 1361.

G. Remaining Challenges

Having determined that all of the challenged claims are unpatentable over Umezawa and Gallas, Won and Talarico '911, and Won, Talarico '911,

and Gallas, we need not reach Petitioner’s argument that those same claims are also rendered obvious in view of Umezawa alone, Norton alone, and Won and Norton. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that the “Board need not address issues that are not necessary to the resolution of the proceeding” and, thus, agreeing that the Board has “discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”). Accordingly, we do not reach the other grounds.

IV. CONCLUSION²

In summary:

Claims	35 U.S.C. §	References/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–5, 8	103(a)	Umezawa ³		
1–5, 8	103(a)	Umezawa, Gallas		1–5, 8
1–5, 8	103(a)	Norton ⁴		
1–5, 8	103(a)	Won, Norton ⁵		
1–5, 8	103(a)	Won, Talarico '911		1–5, 8
1–5, 8	103(a)	Won, Talarico '911, Gallas		1–5, 8
Overall Outcome				1–5, 8

² Should Patent Owner wish to pursue amendment of the challenged claim in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

³ As explained in Section III.G, we do not reach this ground.

⁴ As explained in Section III.G, we do not reach this ground.

⁵ As explained in Section III.G, we do not reach this ground.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–5 and 8 of U.S. Patent No. 11,375,768 B2 have been shown, by a preponderance of the evidence, to be unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Exclude (Paper 32) is dismissed-in-part and denied-in-part; and

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

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