

## **APPENDIX**

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**APPENDIX A**

NOTE: This disposition is nonprecedential.

UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT

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2021-1903

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NIKE, INC.,

*Appellant*

v.

ADIDAS AG,

*Appellee*

KATHERINE K. VIDAL, UNDER SECRETARY OF  
COMMERCE FOR INTELLECTUAL PROPERTY  
AND DIRECTOR OF THE UNITED STATES PATENT  
AND TRADEMARK OFFICE,

*Intervenor*

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Appeal from the United States Patent and  
Trademark Office, Patent Trial and Appeal Board  
in No. IPR2013-00067

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Decided: September 1, 2022

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represented by CHRISTOPHER J. RENK; BRIDGETTE  
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Before PROST, CHEN, and STOLL, *Circuit Judges*.

CHEN, *Circuit Judge*.

This is an appeal from a third final written decision by the Patent Trial and Appeal Board (Board) in an *inter partes* review instituted in 2012. On two prior occasions, we affirmed-in-part, vacated-in-part, and remanded to the Board. *See generally Nike, Inc. v. Adidas AG*, 812 F.3d 1326 (Fed. Cir. 2016) (*Nike I*), *overruled on other grounds by Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1296 n.1 (Fed. Cir. 2017) (en banc); *Nike, Inc. v. Adidas AG*, 955 F.3d 45 (Fed. Cir. 2020) (*Nike II*).

Nike, Inc. (Nike) now appeals the Board's determination that proposed substitute claim 49 of U.S. Patent No. 7,347,011 ('011 patent) is unpatentable under 35 U.S.C. § 103. Nike argues: (1) that the Board erred in finding that the Board, rather than the petitioner, bears the burden of persuasion for unpatentability challenges to proposed substitute claims raised sua sponte by the Board; (2) that the Board in this case effectively placed the burden of persuasion on Nike; and (3) that the Board's obviousness analysis is unsupported by substantial evidence and violates the

Administrative Procedure Act (APA). We need not address Nike's first argument because both the Board and adidas AG (Adidas) met the burden of persuasion in this case. As a result, the Board did not improperly place the burden on Nike. Finally, substantial evidence supports the Board's obviousness analysis and Nike's APA-based argument lacks merit. We therefore *affirm*.

## BACKGROUND

### I

Conventional athletic footwear comprises two primary elements: a sole structure and an upper. The sole structure cushions the foot and provides traction, while the upper covers and positions the foot. '011 patent col. 1 ll. 13–24.

The '011 patent discloses footwear with a knitted textile upper and a sole structure secured to the upper. *Id.* at col. 1 ll. 7–10, col. 3 ll. 20–47. The knitted textile upper may include areas formed from different stitch configurations with varying textures and may be formed using “flat knitting,” where the textile is knit as a sheet or flat piece of textile. *Id.* at col. 3 ll. 25–32, col. 7 ll. 5–8, col. 11 ll. 19–41. As discussed below, the only remaining claim at issue after our decisions in *Nike I* and *II* is proposed substitute claim 49, which depends from proposed substitute claim 47 and recites “a plurality of apertures in the flat knit textile element” that are “formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces.” J.A. 19.

The Board's first final written decision in this *inter partes* review granted a request from Nike to cancel claims 1–46 but denied Nike's request to enter substitute claims 47–50, finding those claims unpatentable under 35 U.S.C. § 103 over the combination of U.S. Patent No. 5,345,638 (Nishida) and U.S. Patent Nos. 2,178,941 and 2,150,730 (collectively, Schuessler References). *See Adidas AG v. Nike, Inc.*, No. IPR2013-00067, 2014 WL 1713368, at \*21 (P.T.A.B. Apr. 28, 2014) (*Final Written Decision*).

Nike appealed, and we found that substantial evidence supported the Board's finding that a skilled artisan would have been motivated to combine Nishida with the Schuessler References with a reasonable expectation of success to arrive at the textile upper recited in claims 47–50. *See Nike I*, 812 F.3d at 1335–38. We also affirmed the Board's conclusion that the patent owner bears the burden of proving patentability of substitute claims presented in a motion to amend. *Id.* at 1332–34.

We identified two errors in the Board's decision, however. First, the Board's analysis of objective indicia of non-obviousness failed to examine Nike's evidence of long-felt need. *Id.* at 1339–40. Second, the Board failed to determine if substitute claims 48 and 49, which Nike proposed to replace challenged claim 19, were patentably distinct from each other. *Id.* at 1341–42. Relevant to this appeal, we remanded for the Board to determine the patentability of substitute claim 49, explaining that “Nishida's specification never specifically discusses the lacing holes of its upper; they are only shown in Figure 3,” and that the Board neither “point[ed] to any disclosure in Nishida that explains the manner in which” the holes in Figure 3

were created, nor “address[ed] the presence of the holes in either claim 49 or Nishida.” *Id.* at 1344. We noted the Board may have “intended to convey that claim 49 was obvious in light of Nishida because *skipping stitches to form apertures, even though not expressly disclosed in Nishida, was a well-known technique in the art* and that understanding perhaps would be a basis to conclude that one of skill in the art would utilize this technique to create holes for accepting shoe laces.” *Id.* at 1344–45 (footnote omitted) (emphasis added). But the Board “did not articulate these findings,” and we thus remanded to the Board for further proceedings. *Id.*

### III

After our decision in *Nike I*, this court issued its en banc decision in *Aqua Products*, overruling *Nike I*’s holding that the patent owner bears the burden of persuasion with respect to the patentability of substitute claims. *See Aqua Prods.*, 872 F.3d at 1324–25. Both parties submitted briefs to the Board addressing the impact of *Aqua Products* on the remand proceedings. Adidas did not attempt to revise its invalidity arguments or assert any new prior art references to demonstrate the unpatentability of substitute claim 49.

The Board then issued a second final written decision addressing the two errors we identified in *Nike I*. The Board concluded that Adidas proved by a preponderance of the evidence that substitute claims 47–50 are unpatentable as obvious. *Adidas AG v. Nike, Inc.*, No. IPR2013 00067, 2018 WL 4501969, at \*13 (P.T.A.B. Sept. 18, 2018) (*Final Written Decision II*). Regarding substitute claim 49, the Board found that “Nishida does not disclose apertures ‘formed by omitting stitches,’ as recited in claim 49.” *Id.* at \*7.

However, “another prior art document of record in the proceeding,” a textbook by David J. Spencer (Spencer),<sup>1</sup> “demonstrates that skipping stitches to form apertures was a well-known technique.” *Id.* at \*7–8, \*8 n.11. The Board concluded that “[b]ecause the omission of stitches was a well-known technique in the field of knitting for forming . . . apertures,” a skilled artisan “would have had reason to use such a known technique . . . to form the plurality of apertures taught by Nishida, as recited by substitute claim 49.” *Id.* at \*8 (first citing Spencer 57–58; then citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007); and then citing J.A. 1564 ¶ 107).

Nike again appealed, arguing that the Board violated the APA by failing to give notice that it would rely on Spencer to support its conclusion that claim 49 is unpatentable as obvious. *Nike II*, 955 F.3d at 51. We agreed, explaining that although “the Board may sua sponte identify a patentability issue for a proposed substitute claim based on the prior art of record,” the Board nonetheless “must provide notice of the issue and an opportunity for the parties to respond before issuing a final decision under 35 U.S.C. § 318(a).” *Id.* at 51–52. Because “Adidas never argued that skipping stitches to form apertures was a well-known technique, let alone that Spencer taught this claim limitation”—even though “Spencer was undisputedly part of the record”—Nike did not have sufficient notice of or opportunity to respond to this issue on which the Board’s patentability determination rested. *Id.* at 52–53. As a result, we vacated the Board’s decision as to substitute claim 49 and remanded for the Board to

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<sup>1</sup> David J. Spencer, *Knitting Technology: A Comprehensive Handbook and Practical Guide* (3d ed. 2001).



determine its patentability after providing the parties an opportunity to respond. *Id.* at 53–54.

We also addressed Nike’s argument that the Board erred in concluding that Nike’s evidence of long-felt need was insufficient to find substitute claims 47–50 nonobvious. *Id.* at 54. We reiterated our statement in *Nike I* that skilled artisan would want to minimize waste in knitted shoe uppers (as disclosed in Nishida) and that Nishida and the Schuessler References relate to efficiently creating knitted articles. *Id.* at 55. We also concluded that substantial evidence supported the Board’s finding that other methods of minimizing waste existed before the date of the invention, including Nishida’s use of an inexpensive material for the cutting waste and Schuessler’s disclosure of knitting textile elements that do not require cutting. *Id.* We thus affirmed the Board’s finding that Nike failed to demonstrate a long-felt need for the features set forth in substitute claims 47–50. *Id.*

#### IV

On remand after *Nike II*, the Board permitted additional briefing on three issues: (1) which party bears the burden of persuasion for the patentability issue the Board had raised sua sponte; (2) whether Spencer teaches or suggests the disputed limitation of substitute claim 49; and (3) whether a skilled artisan would have a reason to combine the teachings of Nishida, the Schuessler References, and Spencer to achieve the article of footwear recited in substitute claim 49. *Adidas AG v. Nike, Inc.*, No. IPR2013 00067, 2021 WL 793883, at \*4 (P.T.A.B. Mar. 1, 2021) (*Final Written Decision III*).

On the first question, the Board explained that *Nike II* held that the Board can raise an unpatentability

challenge for substitute claims *sua sponte*, but neither *Nike II* nor this court's other precedents answered the question of whether the Board or the petitioner bears the burden of persuasion for a Board-raised issue. *Id.* at \*5–6 (citing *Aqua Prods.*, 872 F.3d at 1327; then citing *Bosch Auto. Serv. Sols., LLC v. Matal*, 878 F.3d 1027, 1040 (Fed. Cir. 2017));<sup>2</sup> and then citing *Nike II*, 955 F.3d at 53). The Board noted that it generally relies on the incentives created by the adversarial system, but the adversarial system may fail to provide the Board with potential unpatentability arguments for proposed substitute claims in some cases. *Id.* at \*6. This situation might occur, for example, when the petitioner ceases to participate in the *inter partes* review, or when the petitioner fails to raise certain evidence of unpatentability that is readily identifiable and persuasive such that the Board should take it up in the interest of supporting the integrity of the patent system. *Id.* (citing *Hunting Titan, Inc. v. Dynaenergetics Eur. GmbH*, IPR2018-00600, 2020 WL 3669653, at \*6 (P.T.A.B. July 6, 2020)). The Board concluded that the burden of persuasion cannot fall on petitioner for a challenge it did not raise, and thus “[w]here, as here, the Board raises a patentability challenge to a substitute claim *sua sponte*, the Board itself must consider

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<sup>2</sup> Nike argues that our decision in *Bosch* held that the burden of proving proposed amended claims are unpatentable is always on the petitioner. Appellant's Br. 34, 38. *Bosch*, however, involved a petitioner-raised, not a Board-raised, unpatentability challenge. There, we faulted the Board for impermissibly assigning the burden to the patent owner, in violation of our decision in *Aqua Products*, and we noted only that the petitioner bore the burden for the challenges it raised. *Bosch*, 878 F.3d at 1040. Thus, *Bosch* did not address whether the Board or the petitioner bears the burden of persuasion for a Board-raised challenge to proposed substitute claims.

the record in its entirety and justify any finding of unpatentability by reference to evidence of record.” *Id.*

On the merits, the Board determined that Spencer teaches the disputed limitation of substitute claim 49. *Id.* at \*8–12. Specifically, the Board agreed with Adidas that a skilled artisan “would have understood that the introduction of empty needles, as taught in Spencer, causes the omission of stitches, and that the creation of apertures in this manner was a well-known technique at the time of the invention of the ’011 patent.” *Id.* at \*8 (internal quotation marks omitted). The Board also found that there was adequate reason to combine the teachings of Nishida, the Schuessler References, and Spencer. *Id.* at \*12–14. Although Nishida does not specify how the apertures in its upper are formed, the Board agreed with Adidas that “there are a finite number of predictable solutions for forming holes,” and the “omission of stitches was a well-known technique in the field of knitting for forming such apertures.” *Id.* at \*12–13. Additionally, because a skilled artisan would have been motivated to minimize waste and eliminate cutting, the Board observed that omitting stitches to create an aperture “accomplishes both, particularly as compared to punching out openings.” *Id.* at \*13–14.

Accordingly, the Board determined that a preponderance of the evidence established that substitute claim 49 is unpatentable as obvious and denied Nike’s motion to amend. *Id.* at \*14. Nike timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

#### DISCUSSION

We review the Board’s legal determinations de novo and its factual findings for substantial evidence. *Arthrex, Inc. v. Smith & Nephew, Inc.*, 935 F.3d 1319,

1326 (Fed. Cir. 2019). “A finding is supported by substantial evidence ‘if a reasonable mind might accept a particular evidentiary record as adequate to support a conclusion.’” *Airbus S.A.S. v. Firepass Corp.*, 941 F.3d 1374, 1381 (Fed. Cir. 2019) (quoting *Dickinson v. Zurko*, 527 U.S. 150 (1999)).

The ultimate determination of obviousness under 35 U.S.C. § 103 is a question of law based on underlying factual findings. *In re Baxter Int’l, Inc.*, 678 F.3d 1357, 1361 (Fed. Cir. 2012) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966)). These underlying factual considerations consist of: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of nonobviousness such as “commercial success, long-felt but unsolved needs, failure of others, etc.” *KSR*, 550 U.S. at 406 (quoting *Graham*, 383 U.S. at 17–18). Whether a skilled artisan would have had a reason to combine the teachings of prior art references also is a question of fact. *Pregis Corp. v. Kappos*, 700 F.3d 1348, 1353 (Fed. Cir. 2012) (citations omitted).

Under the APA, the Board’s actions are not set aside unless “arbitrary, capricious, an abuse of discretion, unsupported by substantial evidence, or otherwise not in accordance with law.” *In re Sullivan*, 362 F.3d 1324, 1326 (Fed. Cir. 2004) (citing *In re McDaniel*, 293 F.3d 1379, 1382 (Fed. Cir. 2002)); 5 U.S.C. § 706(2)(A). We review the Board’s compliance with notice requirements de novo. *In re NuVasive, Inc.*, 841 F.3d 966, 970 (Fed. Cir. 2016).

### I. Burden of Persuasion

Nike argues that the Board incorrectly assigned itself, rather than the petitioner, the burden of persua-

sion for an unpatentability challenge to a proposed substitute claim that the Board raises sua sponte. Appellant’s Br. 34–55. Nike also argues that that Board effectively placed the burden on Nike to prove that Spencer did not teach the disputed limitation of substitute claim 49. Appellant’s Br. 55–56. Adidas and the United States Patent and Trademark Office (as intervenor) disagree, arguing that the Board bears the burden on Board-raised patentability grounds and that the Board did not shift the burden to Nike. Appellee’s Br. 26–37; Intervenor Br. 12–17, 12 n.7. Adidas also argues that any error with respect to who bears the burden of persuasion is harmless in this case given that the Board’s analysis simply tracked the unpatentability case Adidas presented in its remand brief. Appellee’s Br. 37–40.

Because we agree with Adidas that the Board and Adidas both met the burden of persuasion in this case, we need not reach Nike’s argument on whether the Board or the petitioner bears the burden on Board-raised patentability challenges. We also find that the Board did not place the burden on Nike.

#### A. Board-Raised Grounds

The Board found that that Spencer teaches creating apertures by omitting stitches and that a skilled artisan would have been motivated to combine Spencer with Nishida and the Schuessler References. *Final Written Decision III*, 2021 WL 793883, at \*8–14. The Board relied on Spencer’s teaching that an “*open-work structure* has normal securely-intermeshed loops but it contains areas where certain adjacent wales are not as directly joined to each other by underlaps or sinker loops as they are to the wales on their other side,” and that the “*unbalanced tension causes them to move apart, producing apertures at these points.*” *Id.* at \*8

(first quoting Spencer 57; and then citing Spencer 95); *see also* Spencer 17 (“A *wale* is a predominantly vertical column of intermeshed needle loops . . .”). The Board also noted that Spencer explains that, in weft knitting, “open-work structures may be produced *by the introduction of empty needles.*” *Final Written Decision III*, 2021 WL 793883, at \*8 (first quoting Spencer 58; and then citing Spencer 91–92). Thus, a skilled artisan “‘would have understood that the introduction of empty needles,’ as taught in Spencer, ‘causes the omission of stitches, and that the creation of apertures in this manner was a well-known technique at the time of the invention of the ’011 patent.’” *Id.* (quoting *Final Written Decision II*, 2018 WL 4501969, at \*8).

On remand after our decision in *Nike II*, Adidas submitted briefs arguing that Spencer discloses skipping stitches to form apertures, relying on the same disclosures identified by the Board in *Final Written Decision II*. *See* J.A. 2616–17 (citing Spencer 57–58); J.A. 2629 (same). The Board juxtaposed its determinations from *Final Written Decision II* with Adidas’s arguments, including Adidas’s contention that Spencer “expressly discloses forming apertures by skipping stitches, e.g., by using ‘empty needles,’” and concluded “[w]e agree” with Adidas. *Final Written Decision III*, 2021 WL 793883, at \*9–10. Because the Board and Adidas relied on the same disclosures and arguments to demonstrate that Spencer taught the disputed limitation of substitute claim 49, the outcome below would have been the same regardless of whether the Board or Adidas was assigned the burden of persuasion.

The Board and Adidas also relied on the same disclosures and arguments in finding that a skilled artisan would have been motivated to combine Spencer with

Nishida and the Schuessler References. Adidas's briefing argued that a skilled artisan would have been motivated to combine Spencer with the other references because there are a "finite number of predictable solutions for forming holes" and the omission of stitches was a well-known technique in the field of knitting for forming apertures. J.A. 2619–20 (citing *KSR*, 550 U.S. at 421); *see also* J.A. 2630–31. Adidas further argued that there are "additional suggestions and motivations pointing to omitted stitches," including minimizing waste, which would have motivated a skilled artisan to use the fundamental principle of omitting stitches to create an aperture rather than punching out openings. J.A. 2620–21. After quoting Adidas's arguments, the Board again stated "[w]e agree." *Final Written Decision III*, 2021 WL 793883, at \*12–13 (quoting J.A. 2619–21). The Board concluded that because (1) "Nishida discloses an article of footwear having a plurality of apertures formed in an indeterminate manner, but for the same purpose as that recited in substitute claim 49," and (2) "the omission of stitches was a known technique of forming such apertures," a skilled artisan "would have had reason to use a known technique for forming apertures to form the one or more apertures taught by substitute claim 49." *Id.* at \*14 (citations omitted).

The Board and Adidas's arguments mirror each other, and therefore, the outcome below would have been the same regardless of whether the burden fell to Adidas or the Board. We thus find it unnecessary to determine here whether, in an *inter partes* review, the petitioner or Board bears the burden of persuasion for

an unpatentability ground raised sua sponte by the Board against proposed substitute claims.<sup>3</sup>

### B. Burden Shifting

Nike also argues that the Board effectively placed the burden on Nike to prove the patentability of substitute claim 49. Appellant's Br. 55–56. Nike highlights three statements in the Board's decision finding that that Nike's argument is "unpersuasive," "falls short of adequate consideration," and "simply does not explain or articulate adequately" why forming an aperture via the introduction of an empty needle would not have been understood by a skilled artisan as a practice of omitting stitches. *Id.*; see also *Final Written Decision III*, 2021 WL 793883, at \*10–11. We disagree.

Nike misreads the Board's decision. In determining that Spencer taught the missing limitation of substitute claim 49, the Board explained its reasoning, recited Adidas's arguments, recited Nike's arguments, and explained why it agreed with Adidas and disagreed with Nike. *Id.* at \*8–12. The Board did the same with respect to motivation to combine. *Id.* at \*12–14. The Board thus never placed the burden on Nike.

Nike's comparison to our prior decisions in *In re Magnum Oil Tools International, Ltd.*, 829 F.3d 1364 (Fed. Cir. 2016), and *IPR Licensing, Inc. v. ZTE Corp.*, 685 F. App'x 933 (Fed. Cir. 2017), is inapt. In *Magnum Oil*, we found the Board erred in shifting the burden to Magnum where "it [was] clear that the Board did

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<sup>3</sup> We note, as the Board did, that the Patent Office amended 37 C.F.R. § 42.121(d) to allocate the burden of persuasion in motions to amend filed on or after January 20, 2021. See *Final Written Decision III*, 2021 WL 793883, at \*5 n.6. Because Nike's motion to amend was filed before that date, the amended regulation is inapplicable here. *Id.*



not require the petitioner to support its claim of obviousness by a preponderance of the evidence.” 829 F.3d at 1378. In *IPR Licensing*, we found that a statement by the Board that “Patent Owner has advanced no evidence” regarding motivation to combine “seem[ed] to shift the burden of proof.” 685 F. App’x at 939–40. Unlike *Magnum Oil*, Adidas supported its claim of obviousness by a preponderance of the evidence, and unlike *IPR Licensing*, the Board did not fault Nike for advancing no evidence. Instead, the Board disagreed with the evidence and argument that Nike advanced. This is not an improper burden shift.

Nike focuses on the words used by the Board, but we explained in *Magnum Oil* that “[i]t is not the language employed with which we are concerned, it is the placement of the burden of persuasion that matters.” 829 F.3d at 1378. Based on our review of the Board’s decision, we find that both Adidas and the Board met the burden of persuasion, and the Board did not shift the burden to Nike.

## II. Obviousness

Nike further contests three aspects of the Board’s obviousness analysis, arguing that: (1) the Board’s determination that Spencer teaches creating apertures by omitting stitches is not supported by substantial evidence, Appellant’s Br. 56–58; (2) the Board’s determination that a skilled artisan would be motivated to combine Spencer with the other prior art references based on minimizing waste is not supported by substantial evidence, Appellant’s Br. 65–66; and (3) the Board’s motivation to combine analysis violated the APA, Appellant’s Br. 59–65. We disagree and address each contention in turn.

## A. Omitting Stitches

The Board determined that Spencer teaches “apertures formed through the omission of stitching material (i.e., underlaps or sinker loops) between wales of the open work structure.” *Final Written Decision III*, 2021 WL 793883, at \*11. Nike argues that this finding is not supported by substantial evidence because Spencer teaches forming apertures by joining certain wales with sinker loops or underlaps more or less closely, not by the absence of sinker loops or underlaps joining wales together. Appellant’s Br. 56–58. We disagree.

Spencer teaches that apertures are formed in knitted material when unbalanced tension causes wales that “are not as directly joined to each other by underlaps or sinker loops as they are to the wales on the other side” to move apart, as shown below in Figure 6.12.

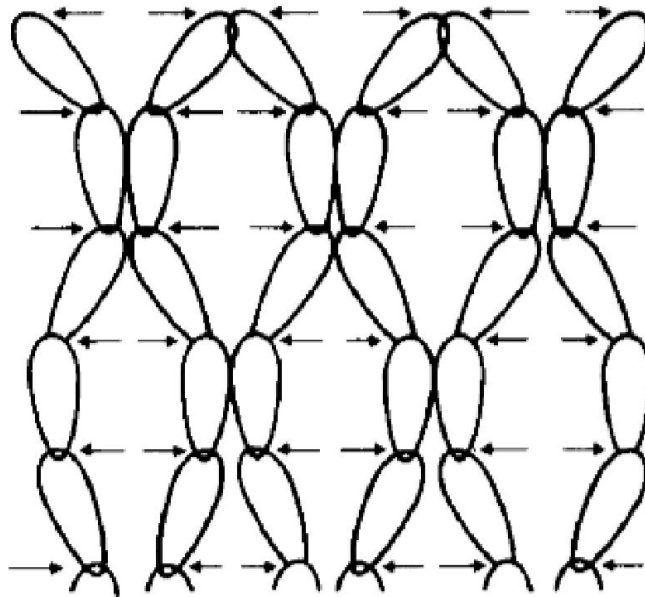


Fig. 6.12 The movement of loops to form open work.

Spencer 57–58; *see also* Spencer 39 (explaining that a “sinker loop” is “the piece of yarn that joins one weft knitted needle loop to the next”). Spencer also teaches that openwork structures in weft knitting “may be produced by the introduction of empty needles . . . to produce loop displacement.” Spencer 58. The Board interpreted these disclosures to find that Spencer teaches “apertures formed through the omission of stitching material (i.e., underlaps or sinker loops) between wales of the open work structure.” *Final Written Decision III*, 2021 WL 793883, at \*11. In other words, wales are joined tightly where sinker loops or underlaps are used and are joined less tightly where sinker loops or underlaps are omitted, including, for example, by knitting with an empty needle. Because a reasonable mind might accept the Board’s interpretation of Spencer, the Board’s factual determinations are supported by substantial evidence. *Innogenetics, N.V. v. Abbott Lab’s*, 512 F.3d 1363, 1378 n.6 (Fed. Cir. 2008) (“What a prior art reference discloses is, of course, a question of fact.”).

Nike’s reliance on *In re Zurko*, 258 F.3d 1379 (Fed. Cir. 2001), is misplaced. There, we found that the Board’s conclusions relying on “basic knowledge” and “good common sense” were “not based on any evidence in the record and, therefore, lack[ed] substantial evidence support.” *Id.* at 1385. Here, the Board relied on specific disclosures in Spencer to determine that Spencer teaches forming apertures through the omission of stitching material between wales, and unlike *Zurko*, the Board did not rely on basic knowledge or common sense to fill in a missing limitation. Thus, the Board’s findings are supported by substantial evidence.

## B. Motivation to Combine

The Board also found that a skilled artisan would have been motivated to combine Spencer with Nishida and the Schuessler References for two separate reasons: (1) Spencer teaches a well-known technique for forming apertures and (2) forming apertures by omitting stitches is less wasteful than punching holes in existing fabric. *Final Written Decision III*, 2021 WL 793883, at \*12–14. Nike argues that the Board’s theories are not supported by substantial evidence. Appellant’s Br. 60, 65–66; Appellant’s Reply Br. 15–18. We disagree with Nike.

After our second remand, Adidas submitted briefs to the Board asserting both motivation to combine theories at issue here. Adidas first cited *KSR*’s instruction that “[w]hen there is a design need . . . and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.” J.A. 2619 (quoting *KSR*, 550 U.S. at 421). Adidas explained that there are a finite number of predictable solutions for forming apertures, including “punching out the openings,” as Nike’s expert suggested, or omitting stitches, as taught by Spencer. J.A. 2619–20 (citing J.A. 1564 (Decl. of Mr. Tonkel on behalf of Nike) ¶ 107). Adidas argued that Spencer was well-known because it included a copyright date three years before the ’011 patent’s earliest priority date, a first publication date nearly twenty years earlier, and is a titled a “comprehensive handbook and practical guide” that aims to “combine in a single volume *the fundamental principles* of weft and warp knitting.” J.A. 2620 (citing Spencer Preface); *see also* J.A. 2630–31. Adidas then explained that “[t]here are *additional* suggestions and motivations pointing to omitted stitches,” including a

motivation to minimize waste and reduce cutting, which would lead a skilled artisan “to use the ‘fundamental principle’ of omitting stitches to create an aperture, which accomplishes both, particularly as compared to punching out openings.” J.A. 2620–21 (emphasis added).

The Board cited these arguments by Adidas in its final written decision and stated “[w]e agree.” *Final Written Decision III*, 2021 WL 793883, at \*12–13. The Board explained that Nishida and the Schuessler References share the same preference for minimizing waste, and Spencer teaches omitting stitches to create apertures, “a less wasteful technique for creating such apertures than punching.” *Id.* at \*14 (citations omitted). The Board also found that Nishida “discloses an article of footwear having a plurality of apertures formed in an indeterminate manner,” that omitting stitches “was a known technique of forming such apertures,” and that a skilled artisan “would have had reason to use a known technique for forming apertures to form the one or more apertures taught by substitute claim 49.” *Id.* (first citing Spencer 57–58; then citing *KSR*, 550 U.S. at 421; then citing J.A. 1564 ¶ 107; and then citing *Nike I*, 812 F.3d at 1344–45).

We find that the Board’s determination that there are a finite number of ways to form apertures in knitted material and that a skilled artisan would consult a textbook like Spencer in determining ways to form the apertures disclosed in Nishida is supported by substantial evidence. We also find that the Board’s determination that a skilled artisan would be motivated to minimize waste, including forming apertures by omitting stitches rather than punching holes in existing fabric, is supported by substantial evidence.

Nike again cites *Zurko* to argue that the Board cannot rely on basic knowledge or common sense to support the Board's motivation to combine. We disagree. Although a mere invocation of "common sense" without more would be problematic, we have held, consistent with *KSR*, that common sense can be used to support a motivation to combine, including motivations to reduce waste and increase efficiency. *See, e.g., KSR*, 550 U.S. at 418 ("[C]ommon sense . . . can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine elements in the way the claimed new invention does."); *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016) ("[C]ommon sense is typically invoked to provide a known *motivation to combine* . . ."); *DyStar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1365 (Fed. Cir. 2006) ("[A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the 'improvement' is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient.").

For example, in *Sandt Technology Ltd. v. Resco Metal & Plastics Corp.*, we held invalid for obviousness a patent claim directed to a stainless steel cover for pay telephones. 264 F.3d 1344, 1354–55 (Fed. Cir. 2001). The only relevant difference between the claim-at-issue and the prior art covers was that the former attached the steel cover to the telephone via studs and the latter attached it with welds. *Id.* We noted that the difference between attaching with welds and studs was merely a "slight variation that produced convenience" and that "use of such studs in the context of telephone housing was common." *Id.* at 1355. We thus

found a clear motivation to alter the prior art welded cover because “[u]sing studs was a cheaper, faster, and more convenient method of attachment.” *Id.*

To the extent the Board relied on common sense or basic knowledge to support its finding that a skilled artisan would be motivated to minimize waste, in accordance with Nishida’s teachings, by forming apertures by omitting stitches rather than punching holes in existing fabric, as taught by Spencer, the Board did not err. *See also Nike II*, 955 F.3d at 54–55 (“In addressing the issue of motivation to combine prior art references, we previously noted in *Nike I* that there is no question that skilled artisans knew of the desire to reduce waste when producing wearable, knitted show uppers because that problem is expressly recognized in Nishida.” (internal quotation marks citation omitted)). Thus, substantial evidence supports the Board’s findings that a skilled artisan would be motivated to combine Spencer with Nishida and the Schuessler References because (1) omitting stitches to form apertures was well-known and among a finite number of options and (2) omitting stitches is less wasteful than punching holes in existing fabric.

### C. The APA

Nike argues that the Board violated the APA by including two “see also” citations to two pages of Spencer that were not previously cited by the parties or the Board. Appellant’s Br. 62–66; *see also Final Written Decision III*, 2021 WL 793883, at \*14 (citing Spencer 86, 167). Although Nike appears to be correct that these citations were not previously raised by the parties or the Board, we find no APA violation here because neither citation was essential to the Board’s motivation to combine analysis as the Board had

already sufficiently established that Nishida would have motivated a skilled artisan to minimize waste.

Before the Board referenced the two citations at issue, the Board disagreed with a conclusory opinion by Nike's expert that Nishida's openings were created by punching out the openings, explaining that "Nishida's preference for minimizing waste is inconsistent with punching out openings in the knitted layout." *Final Written Decision III*, 2021 WL 793883, at \*13–14; see also *id.* at \*14 (explaining that "Nishida and Schuessler II, as well as the '011 Patent, share the same preference for minimizing waste"). The Board reasoned that a skilled artisan would instead be motivated to use Spencer's well-known technique of omitting stitches to create apertures, "a less wasteful technique for creating such apertures than punching." *Id.* at \*14. The Board then cited directly to its findings in Section II.C.2 of its opinion—i.e., explaining Spencer's disclosures—before including the two disputed "see also" citations at issue here. Read in context, the two citations were not central to the Board's analysis; they only reinforce the Board's determination that omitting stitches is less wasteful than punching out openings in existing fabric.

For that reason, Nike errs in relying on our decisions in *NuVasive, Dell Inc. v. Accelaron, LLC*, 818 F.3d 1293 (Fed. Cir. 2016), and *EmeraChem Holdings LLC v. Volkswagen Group of America*, 859 F.3d 1348 (Fed. Cir. 2017). In *NuVasive*, we found that the Board violated the APA when it refused to allow NuVasive the opportunity to reply to a prior-art figure first raised in the petitioner's reply, where the prior-art figure formed an "essential part" of the Board's obviousness findings. 841 F.3d at 969–71. In *Dell*, we vacated the Board's finding because the Board "relied



exclusively” on “slides” shown in a prior-art figure to find a claim limitation was anticipated, where that “structure was first identified as meeting the . . . claim limitation during oral argument before the Board.” *Dell*, 818 F.3d at 1300–01. And in *EmeraChem*, we found an APA violation where the Board rejected three claims over prior-art reference Stiles despite “[t]he fact that neither party ever mentioned Stiles in the context of discussing claims 3, 16, and 20.” *EmeraChem*, 859 F.3d at 1351–52. In each case, the new evidence relied on by the Board was essential to the Board’s findings, unlike the two disputed Spencer citations at issue here.

Instead, our decision in *Novartis AG v. Torrent Pharmaceuticals Limited*, 853 F.3d 1316 (2017), is instructive. There, we disagreed with Novartis that a prior-art reference was the “missing link” and “linchpin” of the Board’s obviousness analysis. *Id.* at 1326. We found that the reference was “one of several independent grounds supporting the motivation to combine” analysis, that two other prior-art references “alone” strongly suggested a motivation to combine, and that the disputed prior-art reference was used to “bolster [the Board’s] analysis with additional evidence.” *Id.* We therefore found no APA violation, and the same is true here. The Board provided sufficient reason to combine Spencer’s well-known technique with Nishida and the Schuessler References. The Board then explained that a skilled artisan also would be motivated to use this well-known technique to minimize waste, which was a preference disclosed in Nishida. The “see also” citations only bolster the Board’s analysis that omitting stitches is less wasteful than punching holes in existing fabric. These citations are not the linchpin of the Board’s analysis, and thus we find that the Board’s decision did not violate the APA.

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CONCLUSION

We have considered Nike's remaining arguments and do not find them persuasive. For the foregoing reasons, the Board did not err in finding that substitute claim 49 is unpatentable as obvious and in denying Nike's motion to amend. We therefore affirm the Board's decision.

AFFIRMED

25a

**APPENDIX B**

UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT

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2019-1262

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NIKE, INC.,

*Appellant*

v.

ADIDAS AG,

*Appellee*

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Appeal from the United States Patent and  
Trademark Office, Patent Trial and Appeal Board  
in No. IPR2013-00067

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Decided: April 9, 2020

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MICHAEL JOSEPH HARRIS, Banner & Witcoff, Ltd.,  
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MITCHELL G. STOCKWELL, Kilpatrick Townsend &  
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represented by VAIBHAV P. KADABA, MICHAEL T.  
MORLOCK, TIFFANY L. WILLIAMS.

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Before LOURIE, CHEN, and STOLL, *Circuit Judges*.

STOLL, *Circuit Judge*.

This case requires this court to once again consider the notice provisions of the Administrative Procedure Act. Nike, Inc. appeals the Patent Trial and Appeal Board's decision on remand denying its request to enter substitute claims 47–50 of U.S. Patent No. 7,347,011 on the ground that those claims are unpatentable under 35 U.S.C. § 103. Specifically, Nike asserts that the Board violated the notice provisions of the APA by finding that a limitation of substitute claim 49 was well-known in the art based on a prior art reference that, while in the record, was never cited by adidas AG (“Adidas”) for disclosing that limitation. Nike also challenges the Board's finding that Nike's evidence of long-felt but unmet need was insufficient to establish the nonobviousness of substitute claims 47–50. We conclude that substantial evidence supports the Board's finding that Nike failed to establish a long-felt need for substitute claims 47–50. Because no notice was provided for the Board's theory of unpatentability for substitute claim 49, however, we vacate the Board's decision as to substitute claim 49 and remand for the Board to determine whether that claim is unpatentable as obvious after providing the parties with an opportunity to respond.

#### BACKGROUND

This inter partes review proceeding returns from a prior appeal in which we affirmed-in-part and vacated-inpart the Board's decision denying Nike's motion to amend, and remanded for the Board to address certain errors underlying its conclusion that Nike's proposed substitute claims 47–50 were unpatentable for obviousness. *See generally Nike, Inc. v. Adidas AG*, 812 F.3d 1326 (Fed. Cir. 2016) (*Nike I*), *overruled on other grounds by Aqua Prods., Inc. v. Matal*, 872 F.3d 1290

(Fed. Cir. 2017) (en banc). Nike now appeals the Board's decision on remand, in which the Board once again denied Nike's motion to enter substitute claims 47–50.

## I

The '011 patent discloses articles of footwear having a textile “upper,” which is made from a knitted textile using any number of warp knitting or weft knitting processes. '011 patent col. 3 ll. 20–32. Weft knitting includes “flat knitting,” where the textile is knit as a sheet or flat piece of textile. *Id.* at col. 7 ll. 5–8.

Substitute claims 47–50 generally relate to a unitary flat-knitted textile element. They recite:

47. An article of footwear comprising
- an upper incorporating a flat knit textile element, the flat knit textile element
- (1) having flat knit edges free of surrounding textile structure such that the flat knit edges are not surrounded by textile structure from which the textile element must be removed, some of the flat knit edges joined together to form an ankle opening in the upper for receiving a foot, the ankle opening having an edge comprised of one of the flat knit edges; and
- (2) having a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying properties to the textile element; and
- a sole structure secured to the upper.

48. The article of footwear recited in claim 47, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the flat knit textile element and the joined edges shape the flat knit textile element to form a lateral region, a medial region, an instep region and a heel region of the upper.

49. The article of footwear recited in claim 47, wherein at least one of the first stitch configuration and the second stitch configuration forms a *plurality of apertures* in the flat knit textile element, the *apertures formed by omitting stitches* in the flat knit textile element and positioned in the upper for receiving laces.

50. The article of footwear recited in claim 47, wherein the flat knit textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper, and the joined edges shape the flat knit textile element to form a lateral region, a medial region, an instep region and a heel region of the upper.

Mot. to Amend at 1–2, *Adidas AG v. Nike, Inc.*, No. IPR2013-00067, 2013 WL 5592521 (P.T.A.B. Aug. 19, 2013) (alterations omitted) (emphases added). Relevant to this appeal, substitute claim 49 recites a knit textile upper containing “apertures” that can be used to receive laces and that are “formed by omitting stitches” in the knit textile.

## II

In its petition, Adidas challenged the patentability of claims 1–46 of the '011 patent. After the Board granted Adidas's petition, Nike filed a motion to

amend its patent pursuant to 35 U.S.C. § 316(d), requesting cancellation of claims 1–46 and entry of substitute claims 47–50. In particular, Nike proposed to substitute claim 47 for original claim 16, substitute claims 48 and 49 for original claim 19, and substitute claim 50 for original claim 20. Adidas opposed Nike’s motion, arguing that substitute claims 47–50 are unpatentable under 35 U.S.C. § 103 in view of the combination of three prior art references: U.S. Patent No. 5,345,638 (Nishida); U.S. Patent No. 2,178,941 (Schuessler I); and U.S. Patent No. 2,150,730 (Schuessler II). Adidas argued that Nishida disclosed substitute claim 49’s limitation that the apertures are “formed by omitting stitches.”

In its final written decision, the Board granted Nike’s request to cancel claims 1–46, but denied Nike’s request for entry of substitute claims 47–50 on the ground that Nike failed to establish the patentability of those claims over the combined teachings of Nishida, Schuessler I, and Schuessler II. *See Adidas AG v. Nike, Inc.*, No. IPR2013-00067, 2014 WL 1713368, at \*20–21 (P.T.A.B. Apr. 28, 2014). After finding that Nike failed to show that it proposed a “reasonable number” of substitute claims for original claim 19, the Board “group[ed] claim 49 with claim 48, for patentability purposes,” meaning that those claims would rise and fall together. *Id.* at \*12. The Board did not address Nike’s long-felt need evidence or argument.

On appeal, we determined that substantial evidence supported the Board’s finding that a person of ordinary skill in the art would have been motivated to combine Nishida, Schuessler I, and Schuessler II with a reasonable expectation of success in arriving at the unitary, flat-knitted textile upper recited in substitute claims 47–50. *See Nike I*, 812 F.3d at 1335–38. We also

affirmed the Board's conclusion that Nike, the patent owner, bore the burden of proving the patentability of substitute claims 47–50 by a preponderance of the evidence. *Id.* at 1332–34.

We identified two errors in the Board's decision, however. First, the Board failed to determine how substitute claims 48 and 49 “should be treated per the standard set forth in” the Board's then-informative decision *Idle Free Systems, Inc. v. Bergstrom*, No. IPR2012-00027, 2013 WL 5947697 (P.T.A.B. June 11, 2013). *Nike I*, 812 F.3d at 1342. Second, the Board failed to examine Nike's long-felt need evidence. *Id.* at 1339–40.

In light of these two errors, we remanded for the Board to determine how substitute claims 48 and 49 should be treated under *Idle Free* and, “if necessary, a full consideration of the patentability of each.” *Id.* at 1342. We rejected Adidas's argument that we could affirm the Board's conclusion that substitute claim 49 was unpatentable as obvious because the Board's decision “lack[ed] critical fact-findings needed for any obviousness determination.” *Id.* at 1343–45. In doing so, we explained that “Nishida's specification never specifically discusses the lacing holes of its upper; they are only shown in Figure 3,” and that the Board neither “point[ed] to any disclosure in Nishida that explains the manner in which” the holes in Figure 3 were created, nor “address[ed] the presence of the holes in either claim 49 or Nishida.” *Id.* at 1344. We then noted:

It may well be that the Board intended to convey that claim 49 was obvious in light of Nishida because *skipping stitches to form apertures, even though not expressly disclosed in Nishida, was a well-known technique in the*



*art* and that understanding perhaps would be a basis to conclude that one of skill in the art would utilize this technique to create holes for accepting shoe laces. But, the Board did not articulate these findings.

*Id.* at 1344–45 (footnote omitted) (emphasis added). We also remanded for the Board to examine Nike’s long-felt need evidence “and its impact, if any, on the Board’s analysis under the first three” factual considerations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). *Id.* at 1340.

On remand, neither party asked to submit additional briefing or new evidence to the Board. This court subsequently issued its en banc decision in *Aqua Products*, overruling *Nike I*’s holding that the patent owner bears the burden of persuasion with respect to the patentability of substitute claims presented in a motion to amend. *See Aqua Prods.*, 872 F.3d at 1296, 1324–25. The Board also de-designated *Idle Free* as “informative.” The parties thereafter submitted briefs to the Board addressing the impact of *Aqua Products* on the remand proceedings. Adidas did not assert any new prior art references to demonstrate the unpatentability of substitute claim 49 or otherwise revise its invalidity arguments on remand.

In its decision on remand, the Board concluded that Adidas proved by a preponderance of the evidence that substitute claims 47–50 are unpatentable as obvious. *Adidas AG v. Nike, Inc.*, No. IPR2013-00067, 2018 WL 4501969, at \*2 (P.T.A.B. Sept. 18, 2018) (*Remand Decision*). The Board found that substitute claims 48 and 49 were proper substitutes for original claim 19 under *Idle Free*. *Id.* at \*6.

The Board next determined that “the entirety of the record demonstrates the unpatentability of substitute claim 49 by a preponderance of the evidence.” *Id.* at \*7. The Board found that “Nishida does not disclose apertures ‘formed by omitting stitches,’ as recited in claim 49.” *Id.* But the Board found that “another prior art document of record in the proceeding,” a handbook by David J. Spencer, *Knitting Technology: A Comprehensive Handbook and Practical Guide* (3d ed. 2001) (Spencer), “demonstrates that skipping stitches to form apertures was a well-known technique.” *Id.* (citing *Genzyme Therapeutic Prods. Ltd. v. Biomarin Pharm. Inc.*, 825 F.3d 1360, 1369 (Fed. Cir. 2016)); *see also id.* at \*8 n.11 (identifying Spencer). The Board concluded that “[b]ecause the omission of stitches was a well-known technique in the field of knitting for forming . . . apertures,” a skilled artisan “would have had reason to use such a known technique . . . to form the plurality of apertures taught by Nishida, as recited by substitute claim 49.” *Id.* at \*8 (first citing Spencer 57–58; then citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007); then citing J.A. 1248 ¶ 107).

Finally, the Board considered Nike’s evidence and argument that the invention of substitute claims 47–50 solved the long-felt need to reduce material waste in the manufacture of knit textile uppers, but determined that the prior art showed that the alleged need was already met by the date of the invention. *Id.* at \*10–12.

Nike appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

#### DISCUSSION

Obviousness is a question of law based on underlying facts. *In re Magnum Oil Tools Int’l, Ltd.*, 829

F.3d 1364, 1373 (Fed. Cir. 2016) (citing *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000)). We review the Board’s legal conclusion of obviousness de novo, and underlying factual findings for substantial evidence. *Id.* (citing *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1280 (Fed. Cir. 2015), *aff’d*, *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131 (2016)). These determinations of fact consist of: “(1) the ‘level of ordinary skill in the pertinent art,’ (2) the ‘scope and content of the prior art,’ (3) the ‘differences between the prior art and the claims at issue,’ and (4) ‘secondary considerations’ of non-obviousness such as ‘commercial success, long-felt but unsolved needs, failure of others, etc.’” *Nike I*, 812 F.3d at 1334–35 (quoting *KSR*, 550 U.S. at 406). Whether the Board improperly relied on new arguments is reviewed de novo. *In re IPR Licensing, Inc.*, 942 F.3d 1363, 1369 (Fed. Cir. 2019) (citing *In re NuVasive, Inc.*, 841 F.3d 966, 970 (Fed. Cir. 2016)).

## I

Nike asserts that the Board erred by relying on Spencer to find substitute claim 49’s requirement of forming apertures “by omitting stitches” was a well-known technique. According to Nike, the Board violated the APA by failing to give notice that it would rely on Spencer to support its obviousness conclusion for substitute claim 49. We agree.

## A

We addressed the universe of prior art that the Board should consider when reviewing a motion to amend in *Aqua Products*. There, we held that the Board may not “base its patentability determinations with respect to amended claims solely on the face of the motion to amend, without regard to the remainder of the IPR record.” 872 F.3d at 1325. Rather, the Board

“must consider the *entirety* of the record before it when assessing the patentability of amended claims.” *Id.* at 1296 (emphasis added). We expressly declined to address, however, whether the Board “may sua sponte raise patentability challenges to a proposed amended claim” because the “record d[id] not present this precise question.” *Id.* at 1325; *see also id.* at 1350 n.7 (Taranto, J., dissenting) (“It is at present unclear to what extent the Board may sua sponte introduce evidence or arguments into the record—and rely on them after giving notice and opportunity to be heard—even in adjudicating the patentability of issued claims, much less in assessing proposed substitute claims.”).

This case presents part of the question posed but left undecided in *Aqua Products*. We hold today that the Board may sua sponte identify a patentability issue for a proposed substitute claim based on the prior art of record.<sup>1</sup> If the Board sua sponte identifies a patentability issue for a proposed substitute claim, however, it must provide notice of the issue and an opportunity for the parties to respond before issuing a final decision under 35 U.S.C. § 318(a).

Because this case involves a motion to amend, we conclude that the Board should not be constrained to arguments and theories raised by the petitioner in its petition or opposition to the motion to amend. That principle—announced in *SAS Institute, Inc. v. ComplementSoft, LLC*, 825 F.3d 1341 (Fed. Cir. 2016), *Magnum Oil*, and other cases—does not apply in the context of motions to amend where the patent owner

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<sup>1</sup> We do not decide today whether the Board may look outside of the IPR record in determining the patentability of proposed substitute claims. This case does not present that precise question. Therefore, we reserve it for another day.

has introduced new claims into the proceedings. Otherwise, were a petitioner not to oppose a motion to amend, the Patent Office would be left with no ability to examine the new claims. *See Aqua Prods.*, 872 F.3d at 1311 (“[W]here the challenger ceases to participate in the IPR and the Board proceeds to final judgment, it is the Board that must justify any finding of unpatentability by reference to the evidence of record in the IPR.” (discussing *Cuozzo*, 136 S. Ct. at 2144)). It makes little sense to limit the Board, in its role within the agency responsible for issuing patents, to the petitioner’s arguments in this context. Rather, based on consideration of the entire record, the Board must determine whether the patent owner’s newly-presented, narrower claims are “supported by the patent’s written description” and “unpatentable in the face of the prior art cited in the IPR.” *Id.* at 1314 (citing 35 U.S.C. § 316(d)(3)).

Here, Spencer was undisputedly part of the record in this IPR proceeding. As the Board correctly observed, Adidas included Spencer as an attachment to its petition and both parties’ experts relied on Spencer’s teachings in their declarations. *See Remand Decision*, 2018 WL 4501969, at \*8 n.11.

Although the Board was permitted to raise a patentability theory based on Spencer, the notice provisions of the APA and our case law require that the Board provide notice of its intent to rely on Spencer and an opportunity for the parties to respond before issuing a final decision relying on Spencer. Under the APA, “[p]ersons entitled to notice of an agency hearing shall be timely informed of . . . the matters of fact and law asserted,” 5 U.S.C. § 554(b)(3), and the agency “shall give all interested parties opportunity for . . . the submission and consideration of facts [and] argu-

ments,” *id.* § 554(c)(1). In interpreting the APA’s notice provisions in the context of IPR proceedings, we have cautioned that “an agency may not change theories in midstream without giving respondents reasonable notice of the change and the opportunity to present argument under the new theory.” *SAS*, 825 F.3d at 1351 (citation and quotation marks omitted), *rev’d on other grounds*, 138 S. Ct. 1348 (2018); *see also Genzyme*, 825 F.3d at 1366 (“The Patent and Trademark Office must provide the patent owner with timely notice of ‘the matters of fact and law asserted,’ and an opportunity to submit facts and argument.” (first quoting 5 U.S.C. §§ 554(b)–(c), 557(c); then quoting *Dell Inc. v. Accelaron, LLC*, 818 F.3d 1293, 1301 (Fed. Cir. 2016))).

Our decisions have also set forth notice requirements relating to the parties’ arguments. For instance, the Board “must base its decision on arguments that were advanced by a party, and to which the opposing party was given a chance to respond.” *Magnum Oil*, 829 F.3d at 1381 (citing *SAS*, 825 F.3d at 1351). In *Magnum Oil*, we reversed the Board’s decision holding all challenged claims unpatentable for obviousness. *Id.* The Board had concluded that the challenged claims would have been obvious in view of a prior art combination that was different from the combination asserted in the IPR petition. *Id.* at 1377. Since the petitioner provided only conclusory arguments as to a motivation to combine the references underlying the Board’s obviousness conclusion, we determined that the Board did not have sufficient evidence on which to base its conclusion. *Id.* at 1380. We rejected the argument that “the Board is free to adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner during an IPR.” *Id.* at 1381.

Similarly, in *SAS*, we concluded that the Board erred by changing its construction of a disputed claim term in its final written decision without affording the parties an opportunity to respond. 825 F.3d at 1350–52. We noted that it was “difficult to imagine either party anticipating that already-interpreted terms were actually moving targets, and it [wa]s thus unreasonable to expect that they would have briefed or argued, in the alternative, hypothetical constructions not asserted by their opponent.” *Id.* at 1351. We vacated the Board’s patentability determination of the disputed claim and remanded so that the parties could address the Board’s new construction. *Id.* at 1352.

More recently, in *IPR Licensing*, we held that the Board violated the APA notice requirements by relying on a prior art reference that was not asserted in the only instituted ground. 942 F.3d at 1368–70. Neither the petition nor the patent owner’s response mentioned the reference in discussing the only instituted ground, yet the Board cited the reference “several times on remand when analyzing why [the challenged claim] was unpatentable.” *Id.* at 1369. In reversing the Board’s decision, we explained that permitting the Board to “rely on evidence relating solely to grounds on which it never instituted” would “allow the Board’s final written decision to rest on arguments that a patent owner has no ability to rebut or anticipate.” *Id.* (citing *Magnum Oil*, 829 F.3d at 1381).

While none of *Magnum Oil*, *SAS*, or *IPR Licensing* was decided in the context of a motion to amend, we see no reason why their holdings and principles regarding fair notice and an opportunity to respond would not apply to all aspects of an IPR proceeding. We therefore adopt these holdings and principles to apply in the context of a motion to amend. Accordingly,

we hold that it is appropriate for the Board to sua sponte raise unpatentability grounds based on the IPR record and not be limited to the unpatentability grounds asserted by the petitioner in its petition or opposition to the motion to amend, provided that the Board gives the parties notice and an opportunity to respond.

## B

With these principles in mind, we conclude that the Board violated the APA's requirements of notice and an opportunity to respond when it relied on Spencer to find that the formation of apertures by skipping stitches was a well-known technique in the art.

Throughout the IPR proceeding, Adidas never argued that skipping stitches to form apertures was a well-known technique, let alone that Spencer taught this claim limitation. Although it is undisputed that Spencer is part of the IPR record, Adidas did not rely on Spencer in its asserted ground for unpatentability of substitute claim 49 in either its opposition to Nike's motion to amend or its briefing on remand. And although the parties' experts and Nike's counsel cited certain disclosures in Spencer for other reasons, those disclosures were entirely different from the disclosures on which the Board relied in finding that the formation of apertures by skipping stitches was well-known. *Compare Remand Decision*, 2018 WL 4501969, at \*8–9 (citing Spencer 57–58, 91–92, 95), *with* J.A. 156–57 ¶ 7; J.A. 176 ¶ 39; J.A. 182 ¶ 56; J.A. 1218–19 ¶ 51; J.A. 1246–47 ¶ 105; J.A. 1609. By including this new theory for the first time in its decision on remand, the Board denied Nike notice of the issues that the Board would consider and an opportunity to address the factual and legal arguments on which the Board's



patentability determination would rest. *See* 35 U.S.C. § 554(b)–(c).

Contrary to the Board’s suggestion, our decision in *Genzyme* does not suggest a different outcome. In that case, we held that the Board did not violate the APA even though its final written decisions cited two references “that were not specifically included in the combinations of prior art on which the Board instituted review.” 825 F.3d at 1366. The Board had relied on the prior art to show the state of the art at the time of the invention; it did not rely on the prior art to disclose a particular claim limitation for purposes of anticipation or obviousness. *Id.* at 1365–66. We explained that the “introduction of new evidence in the course of the trial is to be expected in *inter partes* review trial proceedings,” and that the Board at the institution phase “cannot predict all the legal or factual questions that the parties may raise during the litigation.” *Id.* at 1366–67. With these considerations in mind, we concluded that the “Board may consider a prior art reference to show the state of the art at the time of the invention, regardless of whether that reference was cited in the Board’s institution decision.” *Id.* at 1369. But that does not relieve the Board of its notice obligations.

Indeed, in *Genzyme* we emphasized that the “critical question for compliance with the APA and due process” was whether the patent owner received “adequate notice of the issues that would be considered, and ultimately resolved, at the hearing.” *Id.* at 1367 (citation omitted). Both parties in *Genzyme* “address[ed] the relevance of the [two] references” to the state of the art in their briefing and, thus, the patent owner “had ample notice that the references were in play as potentially relevant evidence and that the Board might well address the

parties' arguments regarding those references in its final written decisions." *Id.* The patent owner had—and took advantage of—an opportunity to respond to the disputed references.

Here, by contrast, Nike had no notice that the Board might rely on Spencer to teach the limitations of substitute claim 49. Nor did it have notice of the specific portions of Spencer that the Board might rely on in its decision. The parties did not discuss or debate the relevant portions of Spencer during the IPR proceeding. The facts of *Genzyme* are further distinguishable on the ground that unlike Spencer, the two disputed references in *Genzyme* “were not among the prior art references that the Board relied upon to establish any claim limitations.” *Id.* at 1369. Thus, the Board’s decision here rests exclusively on an argument that the Board itself raised, addressed, and decided in its decision on remand, thereby depriving Nike of “notice or an opportunity to be heard at a meaningful point in the proceedings.” *Id.* at 1367.

As discussed above, the Board may rely on prior art of record in considering the patentability of amended claims. But in doing so, it must give the parties notice and an opportunity to respond. For example, prior to issuing its decision on remand, the Board in this case could have informed the parties that it intended to rely on Spencer for disclosing the disputed limitation of substitute claim 49, and requested supplemental briefing from the parties regarding its proposed ground for unpatentability. Alternatively, had the Board held an oral hearing on remand, it could have requested that the parties be prepared to discuss Spencer in connection with substitute claim 49 at the hearing. Either of these actions would satisfy the APA’s notice requirements, but neither occurred in this case.

Accordingly, we vacate the Board's decision as to substitute claim 49 and remand for the Board to determine whether substitute claim 49 is unpatentable as obvious after providing the parties with an opportunity to respond.

## II

Nike also challenges the Board's determination that its evidence of long-felt need was insufficient to establish the nonobviousness of substitute claims 47–50. After reviewing the record, we conclude that substantial evidence supports the Board's finding that Nike failed to establish a long-felt need.

In addressing the issue of motivation to combine the prior art references, we previously noted in *Nike I* that “there is no question that skilled artisans knew of the desire to reduce waste when producing wearable, knitted shoe uppers because that problem is expressly recognized in Nishida.” 812 F.3d at 1338. We agreed with the Board that Nishida, Schuessler I, and Schuessler II “serve the same purpose’ of efficiently creating knitted articles.” *Id.* at 1337 (citation omitted). We also explained that

a skilled artisan interested in Nishida's preference to minimize waste in the production process would have logically consulted the well-known practice of flat-knitting, which *eliminates the cutting process altogether*. In other words, a person of skill in the art would have been motivated to address the problem identified in Nishida by applying the teachings of the Schuessler References to arrive at the invention in Nike's proposed substitute claims.

*Id.* (emphasis added). Thus, this court has already determined that a skilled artisan would have adopted the flat-knitting techniques taught in the Schuessler references for the production of knitted shoe uppers in order to minimize waste.

Substantial evidence supports the Board’s finding that other methods of minimizing waste—a problem undisputedly recognized by Nishida—had existed before the date of the invention. The Board found that Nishida “clearly teaches the benefits of reducing material waste, making the cutting waste a ‘simple, lightweight and inexpensive material.’” *Remand Decision*, 2018 WL 4501969, at \*10 (quoting Nishida col. 2 ll. 20–22). The Board noted that Nike’s arguments and evidence on long-felt need focused solely on Nishida and its response to the problem in the art of making cutting waste less expensive, but ignored the teachings of other asserted prior art references. In particular, the Board cited Schuessler I’s disclosure of a method of producing a knitted helmet on a flat knitting machine “in accordance with the disclosure in [Schuessler II].” *Id.* at \*11 (quoting J.A. 997); *see also* Schuessler I col. 1 l. 48 col. 2 l. 2. The helmets of Schuessler I are “completed from the swatches as knitted *without requiring cutting*, and requiring the joining of only a few edges.” Schuessler I col. 1 ll. 22–27 (emphasis added). Thus, the Board found that “any alleged, long-felt need was met by the teachings of at least Schuessler I, namely, knitting textile elements ‘without requiring cutting.’” *Remand Decision*, 2018 WL 4501969, at \*12. This finding is supported by substantial evidence in the record.

Accordingly, we affirm the Board’s determination that Nike’s arguments and evidence failed to demonstrate a long-felt but unmet need for substitute claims 47–50.

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CONCLUSION

For the foregoing reasons, we vacate the Board's determination that substitute claim 49 is unpatentable for obviousness and remand for further proceedings. We affirm the Board's decision in all other respects.

AFFIRMED-IN-PART, VACATED-IN-PART,  
AND REMANDED

COSTS

No costs.

44a

**APPENDIX C**

UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT

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2014-1719

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NIKE, INC.,

*Appellant*

v.

ADIDAS AG,

*Appellee*

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Appeal from the United States Patent and  
Trademark Office, Patent Trial and Appeal Board  
in No. IPR2013-00067

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Decided: February 11, 2016

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MARK CHRISTOPHER FLEMING, Wilmer Cutler  
Pickering Hale and Dorr LLP, Boston, MA, argued for  
appellant. Also represented by WILLIAM F. LEE, KEVIN  
GOLDMAN; ANDREA WEISS JEFFRIES, Los Angeles, CA.

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WILLIAMS.

MICHAEL SUMNER FORMAN, Office of the Solicitor,  
United States Patent and Trademark Office,  
Alexandria, VA, argued for intervenor Michelle K. Lee.

Also represented by NATHAN K. KELLEY, THOMAS W. KRAUSE, SCOTT WEIDENFELLER.

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Before CHEN, MAYER, and STOLL, *Circuit Judges*.

CHEN, *Circuit Judge*

This appeal arises from the inter partes review (IPR) of U.S. Patent No. 7,347,011 (the '011 patent) owned by Nike, Inc. (Nike). The United States Patent and Trademark Office, Patent Trial and Appeal Board (Board) granted the IPR petition filed by adidas AG (Adidas) and instituted inter partes review of claims 1–46 of the '011 patent. Nike then filed a motion to amend in which it requested cancellation of claims 1–46 and proposed substitute claims 47–50. The Board granted Nike's motion to cancel claims 1–46, but denied the motion as to the substitute claims because Nike failed to meet its burden of establishing patentability of substitute claims 47–50.

Nike now appeals the Board's denial of its motion to amend, and the Director of the United States Patent and Trademark Office (Director) intervened to defend the Board's decision. For the reasons stated below, we affirm-in-part, vacate-in-part, and remand for further proceedings consistent with this opinion.

## BACKGROUND

### I

Articles of footwear generally consist of two primary components: a sole structure and an “upper.” The '011 patent, entitled “Article of footwear having a textile upper,” relates to the “upper” component, which has the general shape of a foot and forms a void for receiving the foot that is accessed using the ankle opening. The upper disclosed in the '011 patent is

made from a knitted textile using any number of warp knitting or weft knitting processes. '011 patent, 3:30–32. It is undisputed that weft knitting is well known in the art and includes “flat knitting,” where the textile is knit as a sheet or flat piece of textile, and “circular knitting,” where the textile is produced as cylindrical textile structure. *Id.* at 7:5–8, 29–32.

The knitted textile upper of the '011 patent specifically consists of “a single material element that is formed to exhibit a unitary (i.e., one-piece) construction” *Id.* at 5:38–39. In another embodiment, this unitary textile element “may be formed as a part of a larger textile element” where the upper is then cut and “removed from the larger textile element.” *Id.* at 5:43–45. Once manufactured, the unitary textile element is then “formed or otherwise shaped to extend around the foot.” *Id.* at 5:40–41. By manufacturing the upper component in this fashion, the “unitary construction is intended to express a configuration wherein portions of a textile element are not joined together by seams or other connections.” *Id.* at 6:43–46.



47a

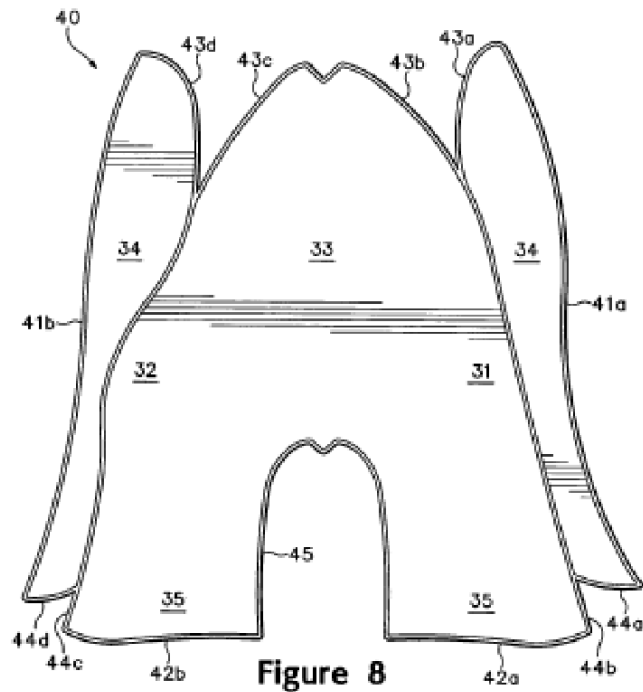
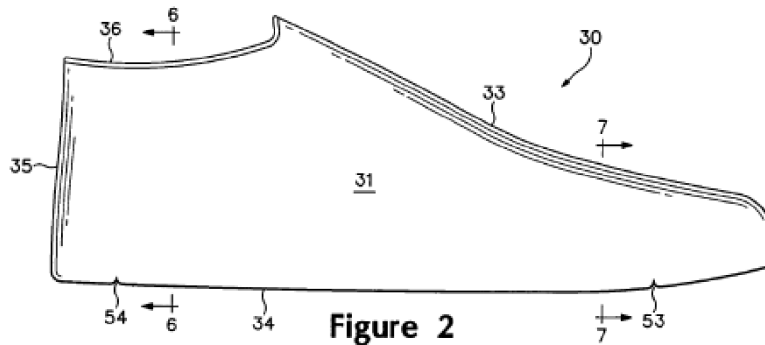


Figure 8 of the '011 patent illustrates the shape of the seamless unitary textile element before the various edges of the element are joined by seams in certain places to form the shape of the upper, as depicted in Figure 2.

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Nike's proposed substitute claims generally relate to a unitary flat-knitted textile element:

Claim 47. (Substitute for independent claim 16) An article of footwear comprising an upper incorporating a flat knit textile element, the flat knit textile element

(1) having flat knit edges free of surrounding textile structure such that the flat knit edges are not surrounded by textile structure from which the textile element must be removed, some of the flat knit edges joined together to form an ankle opening in the upper for receiving a foot, the ankle opening having an edge comprised of one of the flat knit edges; and

(2) having a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying properties to the textile element; and a sole structure secured to the upper.

Joint Appendix (J.A.) 1226–27.

Adidas petitioned the Board for inter partes review of the '011 patent, asserting that all forty-six claims were unpatentable under either 35 U.S.C. § 102 or § 103 in view of numerous prior art references. The Board granted review of certain of Adidas's challenges to the patentability of all claims. After the Board issued its institution decision, Nike filed a motion to amend the claims in which it sought cancellation of claims 1–46 and proposed four substitute claims. In its final written decision, the Board granted Nike's request to cancel claims 1–46. The Board denied, however, Nike's request to enter substitute claims 47–50 for two alternate reasons. First, the Board acknowledged the requirement announced in the Board's *Idle Free* decision that a patent owner “persuade the Board that the proposed substitute claim is patentable over the prior art of record, *and over prior art not of record but known to the patent owner.*” J.A. 34–36. Because Nike's motion included only a conclusory statement that the proposed claims were patentable over prior art not of record but known to Nike, the Board denied Nike's motion. Alternatively, the Board denied entry of the substitute claims because Nike failed to establish that the substitute claims were patentable over the Nishida and Schuessler references.

Nike filed a timely appeal from the Board's decision, and the Director intervened. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

#### DISCUSSION

We review the Board's conclusions of law de novo and its findings of fact for substantial evidence. 5 U.S.C. § 706(2)(E); *In re Sullivan*, 498 F.3d 1345, 1350 (Fed. Cir. 2007). “Substantial evidence is more than a

mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 217 (1938).

In this appeal, Nike raises three primary arguments. First, Nike asserts that the Board erroneously shifted to Nike (the patent owner) the burden of proving patentability of its proposed substitute claims 47–50. Second, Nike contests the Board’s finding on the merits that the proposed substitute claims are unpatentable as obvious. Finally, Nike objects to the Board’s practice of requiring a patent owner to establish patentability of substitute claims over all prior art known to the patent owner, including prior art not of record but known to the patent owner.

### I. Burden of Proof

When Congress created IPR proceedings, it also enacted 35 U.S.C. § 316, which directs the PTO to “prescribe regulations” governing a considerable number of different aspects of these new proceedings. 35 U.S.C. § 316(a). Particularly relevant to this case is § 316(a)(9), in which Congress delegated authority to the PTO to prescribe regulations “setting forth standards and procedures for allowing the patent owner to move to amend the patent under [§ 316](d) to cancel a challenged claim or propose a reasonable number of substitute claims.” *Id.* § 316(a)(9); *see also id.* § 316(d)(1) (“During an inter partes review . . . , the patent owner may file 1 motion to amend the patent in 1 or more of the following ways: (A) Cancel any challenged patent claim. (B) For each challenged claim, propose a reasonable number of substitute claims.”). Consistent with § 316(a)(9), the PTO promulgated a regulation relating to motions practice, 37 C.F.R. § 42.20, which explains that “[r]elief, other than a

petition requesting the institution of a trial, must be requested in the form of a motion” and that “[t]he moving party has the burden of proof to establish that it is entitled to the requested relief.” 37 C.F.R. § 42.20(a), (c).

The Board addressed these regulations in its *Idle Free* “informative” decision in which it interpreted section 42.20(c) and explained that “[t]he burden is not on the petitioner to show unpatentability [of new, substitute claims], but on the patent owner to show patentable distinction over the prior art.” *Idle Free Sys., Inc. v. Bergstrom*, IPR 2012-00027, 2013 WL 5947697, at \*4 (PTAB June 11, 2013); *see also* Patent Trial and Appeal Board, Standard Operating Procedure 2 (Revision 9), at 3 (§ IV.A–B) (Standard Operating Procedure 2), *available at* <http://www.uspto.gov/sites/default/files/documents/sop2-revision-9-dated-9-22-2014.pdf> (explaining that Board decisions labeled “informative” are “not binding authority,” but provide “Board norms on recurring issues,” “guidance on issues of first impression,” and “guidance on Board rules and practices”).

In our recent decision in *Microsoft Corp. v. Proxyconn, Inc.*, we held that the Board’s interpretation of section 42.20(c) was permissible in light of the text of § 316(a)(9) and the language of the PTO’s regulation. 789 F.3d 1292, 1306–08 (Fed. Cir. 2015); *see also id.* at 1307 (“Nor can we say that the Board’s interpretation of § 42.20(c) in *Idle Free*—requiring the patentee to show patentable distinction [of the substitute claims] over the prior art of record—is plainly erroneous or inconsistent with the regulation or governing statutes.” (alteration in original) (citation omitted)). We further explained that placing this burden on the patent owner for its newly formulated claims is appropriate

given “the very nature of IPRs,” which are distinctly different from a typical PTO examination or reexamination where a patent examiner performs a prior art search and independently conducts a patentability analysis of all claims, whether newly proposed or previously existing. *Id.* at 1307.

During IPRs, once the PTO grants a patentee’s motion to amend, the substituted claims are not subject to further examination. Moreover, the petitioner may choose not to challenge the patentability of substitute claims if, for example, the amendments narrowed the claims such that the petitioner no longer faces a risk of infringement. If the patentee were not required to establish patentability of substitute claims over the prior art of record, an amended patent could issue despite the PTO having before it prior art that undermines patentability.

*Id.* at 1307–08; *see also* 35 U.S.C. § 318(a) (instructing the Board to “issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner and any new claim added under section 316(d)”). In this way, placing the burden on the patent owner ensures that proposed substitute claims are critically analyzed before they are entered as claims that are part of the issued patent.

Consistent with the language of the regulation and our subsequent conclusion in *Proxyconn*, the Board in the present case stated that Nike’s proposed substitute claims could not be “entered automatically,” but instead could be entered only “upon [Nike]’s having demonstrated the patentability of the substitute claims.” *Adidas*, 2014 WL 1713368, at \*5. Ultimately, the Board denied Nike’s motion because it failed to

carry this burden. Nike now argues that the understanding of the authority delegated in § 316(a)(9) from *Idle Free* and from *Proxyconn* is incorrect in light of § 316(e):

Evidentiary standards.—In an inter partes review instituted under this chapter, *the petitioner shall have the burden* of proving a proposition of unpatentability by a preponderance of the evidence.

35 U.S.C. § 316(e) (emphasis added). On its face, § 316(e) places the burden of proving unpatentability on the petitioner as it relates to any patent claim included in the Board’s decision instituting the IPR proceedings. Nike interprets this provision as also placing on the petitioner the burden of proving unpatentability of any newly proposed substitute claim that the patent owner seeks to introduce during the proceedings. When § 316(e) is read in isolation, Nike’s position is not without some merit. But after considering the entire statute, we disagree that this section has such a broad command. *See also Synopsys Inc. v. Mentor Graphics Corp.*, No. 14-1516, slip op. at 24–26 (Fed. Cir. Feb. 10, 2016).

First, Nike’s interpretation is in tension with Congress’s direction that the PTO “shall prescribe regulations” “setting forth standards and procedures for allowing the patent owner to move to amend.” § 316(a)(9). In other words, Congress delegated to the PTO the *specific* authority to establish the standards and procedures with which a patent owner must comply to amend its patent during an IPR. Furthermore, the specific language in § 316(a)(9) also directs the PTO to set “standards and procedures . . . ensuring that any information submitted by the patent owner in support of any amendment entered under subsection (d) is

made available to the public.” In this way, § 316(a)(9)’s requirement that the patent owner has some obligation to provide “information . . . in support of any amendment,” indicates that the patent owner carries an affirmative duty to justify why newly drafted claims—which, unlike the issued claims, had never been evaluated by the PTO—should be entered into the proceeding.

This conclusion is further supported by inspection of the language of § 316(e). Specifically, the evidentiary standard set forth in § 316(e) applies to “an inter partes review instituted under this chapter,” making clear that the burden of proof is on the petitioner to prove unpatentable those issued claims that were actually challenged in the petition for review and for which the Board instituted review. *Synopsys*, No. 14-1516, slip op. at 24–26; *see also* 35 U.S.C. § 314(a) (authorizing IPR proceedings only when the information in a petition for review and any response “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition”). The evidentiary standard of § 316(e), when read together with § 316(a)(9), therefore does not necessarily apply to claims that were not in existence at the time a petition is filed, such as newly offered substitute claims proposed by a patent owner in a motion to amend filed as part of an already-instituted IPR proceeding.

For these reasons, Nike’s attempt to undo our conclusion in *Proxyconn*—that the PTO may impose the burden of establishing the patentability of proposed substitute claims on the patent owner—is not persuasive. Nike’s argument focuses solely on a small portion of the language in § 316(e) and ignores the context supplied by the entirety of § 316. *See Davis v. Mich.*



*Dep't of Treasury*, 489 U.S. 803, 809 (1989) (“[S]tatutory language cannot be construed in a vacuum. It is a fundamental canon of statutory construction that the words of a statute must be read in their context with a view to their place in the overall statutory scheme.”). Our precedent recognizes that § 316(a)(9) instructed the PTO to promulgate a regulation setting forth the standard for motions to amend a patent that might be filed as part of an IPR proceeding. The PTO did just that in 37 C.F.R. § 42.20(c) and, as we held in *Proxyconn*, the Board permissibly interpreted this regulation as imposing the burden of proving patentability of a proposed substitute claim on the movant: the patent owner. Section 316(e), on the other hand, speaks to a different context. Section 316(e) places the burden on the petitioner to prove unpatentability of any issued claim for which the Board has instituted review and requires that the petitioner carry this burden by a preponderance of the evidence. Thus, the Board did not err by placing the burden on Nike to establish patentability over the prior art of Nike’s proposed substitute claims.

## II. Obviousness

Nike next asserts that the Board nevertheless erred in concluding that Nike failed to carry its burden of establishing that proposed substitute claims 47–50 were patentable under 35 U.S.C. § 103. Section 103 forbids issuance of a claim when “the differences between the subject matter sought to be patented 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.” 35 U.S.C. § 103. The ultimate determination of obviousness under § 103 is a question of law based on underlying factual findings. *In re*

*Baxter Int'l, Inc.*, 678 F.3d 1357, 1361 (Fed. Cir. 2012) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966)). These underlying factual considerations consist of: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of non-obviousness such as “commercial success, long-felt but unsolved needs, failure of others, etc.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting *Graham*, 383 U.S. at 17–18).

A claimed invention may be obvious even when the prior art does not teach each claim limitation, so long as the record contains some reason why one of skill in the art would modify the prior art to obtain the claimed invention. *See Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1307 (Fed. Cir. 2006). Whether a person of ordinary skill in the art would have had such a reason to combine the teachings of prior art references is also a question of fact. *Pregis Corp. v. Kappos*, 700 F.3d 1348, 1353 (Fed. Cir. 2012). Although an analysis of the teaching, suggestion, or motivation to combine elements from different prior art references is helpful, we must always be mindful that an obviousness inquiry requires an “expansive and flexible approach.” *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1360 (Fed. Cir. 2012) (citing *KSR*, 550 U.S. at 415, 419). Importantly, we have repeatedly emphasized that an obviousness inquiry requires examination of all four *Graham* factors and that an obviousness determination can be made only after consideration of each factor. *Id.*

On appeal, Nike objects to three components of the Board’s obviousness analysis. First, Nike contests the Board’s finding that a person of skill in the art would

have a reason to combine the two relevant prior art references to arrive at the unitary upper claimed in the substitute claims. Second, Nike argues that the Board failed to consider Nike’s evidence of secondary considerations in violation of this court’s precedent. Finally, Nike contends that, at the very least, proposed claim 49 recites a limitation absent from the cited prior art references.

#### A. Motivation to Combine

In concluding that substitute claims 47–50 were unpatentable,<sup>1</sup> the Board pointed to three prior art references: (1) U.S. Patent No. 5,345,638 (Nishida), entitled “Process for producing a shoe-shaped part from a web of material and resulting shoe-shaped part”; (2) U.S. Patent No. 2,178,941 (Schuessler I), entitled “Knitted helmet”; and (3) U.S. Patent No. 2,150,730 (Schuessler II), entitled “Knitting machine.” In its Final Written Decision, the Board acknowledged that because Nike declined to file a response to the petition, the Board would “accept as unchallenged that Nishida teaches or suggests all of the limitations of [the] original claims.” *Adidas*, 2014 WL 1713368, at \*18. This left only the added limitation in proposed substitute claims 47–50, namely, the recitation of “flat knit edges free of surrounding textile structure.” The Board found this limitation disclosed in Schuessler I and Schuessler II (collectively, the Schuessler References). The Board then concluded that a person of skill in the art would have reason to modify Nishida using the teachings of the Schuessler References to arrive at the unitary, flat-knitted textile upper recited in the proposed substitute claims. Nike argues that this

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<sup>1</sup> Nike does not argue claims 48–50 separately from claim 47 for the purposes of this argument.

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finding is not supported by substantial evidence. We disagree.

1.

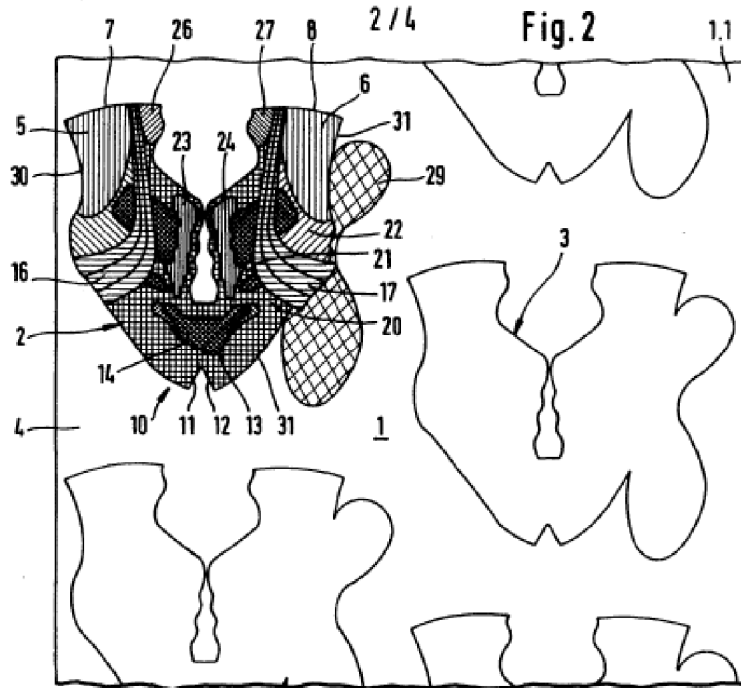
As mentioned above, the Board's obviousness conclusion rested on three prior art references: Nishida and the two Schuessler References.

Nishida discloses a process that reduces the amount of waste produced when manufacturing shoe uppers. Nishida accomplishes this goal using a pattern where

only just those parts of the web of material are produced in the necessary quality, thickness, multilayers or the like which correspond to the pattern or to an area of a pattern of the shoe upper or the related sole part. The remaining area of the web of material in contrast can consist of a simple lightweight or inexpensive material quality, which holds together only the patterns . . . .

'638 patent, 2:11–18. As shown in Figure 2 of Nishida, the textile corresponding to the pattern for the shoe upper is of a different quality or thickness than the remainder of the textile web.

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*Id.* at Figure 2. The process disclosed in Nishida then requires that the portion of the pattern corresponding to the shoe upper be cut from the surrounding textile web. *Id.* at 2:20–22. After the upper is cut out, the “cutting waste” “represents a simple, lightweight and inexpensive material.” *Id.* Nishida therefore improves on the prior art, where the cutting waste consisted of the normal, more “expensive tubular material, multi-layer material or the like.” *Id.* at 2:24–25.

The Schuessler References both issued in 1939 to the same inventor. Schuessler I discloses “a method for forming a . . . knitted helmet while rendering it unnecessary to cut any portion of the knitted swatch while at the same time providing a finished helmet,” ‘941 patent, 1:16–19, rather than the traditional method of “form[ing] a knitted piece and then cut[ting]

out portions and sew[ing] sections together to form the completed article,” *id.* at 1:4–6. This manufacturing process allows the creation of the knitted article “in a continuous manner” “without requiring cutting.” *Id.* at 1:24–26. Schuessler I further recognizes that this cutting-free method avoids the need for additional processing “to prevent unraveling” before the parts are sewn together. *Id.* at 1:8. Schuessler I specifically references Schuessler II as an example of a knitting machine that can be used to form the knitted helmet disclosed in Schuessler I. *See also Adidas*, 2014 WL 1713368, at \*19 (“The knitted helmet [of Schuessler I] may be formed from a swatch knit on a flat knitting machine, such as that described in Schuessler II.”). Schuessler II discloses a flat-knitting machine. ’730 patent, 1:1–5. Thus, the flat-knitting machine can be used to manufacture the unitary textile element with flat-knit (not cut) edges that can be stitched in certain places to form a knitted helmet as disclosed in Schuessler I.

2.

The Board found that one of skill in the art would have reason to combine Nishida and the Schuessler References because these references are in similar fields and address the same problem. Nike asserts that the Board’s finding lacks substantial evidence because the processes in these references are sufficiently different such that a person of skill in the art would not think to combine them. According to Nike, Nishida discloses a “subtractive” process, which requires the additional step of cutting the textile from a larger textile web. Nike contends that Nishida’s subtractive process bears no resemblance to the “additive” process in the Schuessler References, where the textile shape

is created by flat knitting to shape in the first instance. Nike's argument is not persuasive.

In *KSR*, the Supreme Court instructed that “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” 550 U.S. at 420. The three references all relate to the creation of three-dimensional, knitted articles created in an efficient and economical way by joining the edges of two-dimensional knit textiles. Nishida recognizes the desire to minimize the amount of wasted textile resulting from cutting the shoe upper pattern from a larger textile web. Schuessler I describes its preferred process, carried out by the flat-knitting machine in Schuessler II, for creating an article knitted to a specific shape “*without requiring cutting*.” *Adidas*, 2014 WL 1713368, at \*19 (emphasis in original) (quoting Schuessler I, 1:25–26). We thus agree with the Board that the prior art references “serve the same purpose” of efficiently creating knitted articles. *See id.* And a skilled artisan interested in Nishida's preference to minimize waste in the production process would have logically consulted the well-known practice of flat-knitting, which eliminates the cutting process altogether. In other words, a person of skill in the art would have been motivated to address the problem identified in Nishida by applying the teachings of the Schuessler References to arrive at the invention in Nike's proposed substitute claims.

Nike next points to our decision in *Leo Pharmaceuticals Products, Ltd. v. Rea*, and argues that the age of these references and the passage of time between their public availability and the inventions recited in the proposed substitute claims should have precluded the

Board from finding a reason to combine the references. 726 F.3d 1346, 1356–57 (Fed. Cir. 2013). Nike overreads our precedent. The relevant portion of *Leo Pharmaceuticals* stands for the proposition that the age of a reference can highlight the fact that no one in the art understood the problem to be solved.

True enough, *Leo Pharmaceuticals* discusses the number of years that passed from the time the prior art was invented until the filing of the patent at issue. *See id.* at 1355, 1356–57. But, our reversal of the Patent Board’s obviousness determination hinged on the fact that nothing in the cited prior art appreciated the problem the invention recognized and then solved. *Id.* at 1353 (“The ’013 patent, however, is not simply a combination of elements found in the prior art. The inventors . . . recognized and solved a problem . . . that the prior art did not recognize.”). Because there was no prior recognition of the problem solved by the subject invention, there was no reason in the record why one of skill in the art would attempt to combine the cited prior art to arrive at the claimed invention. *Id.* at 1354 (“Only after recognizing the existence of the problem would an artisan *then* turn to the prior art and attempt to develop [the claimed invention].”); *see also id.* at 1356–57 (rejecting an obvious-to-try argument because “[u]ntil the advancement made by the inventors . . . [t]he problem was not known, the possible approaches to solving the problem were not known or finite, and the solution was not predictable”).

In this way, our decision in *Leo Pharmaceuticals* is entirely consistent with established precedent that “[t]he mere age of the references is not persuasive of the unobviousness of the combination of their teachings, absent evidence that, notwithstanding knowledge of the references, the art tried and failed to solve the



problem.” *In re Wright*, 569 F.2d 1124, 1127 (CCPA 1977); *see also Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004) (“Absent a showing of long-felt need or the failure of others, the mere passage of time without the claimed invention is not evidence of nonobviousness.”).<sup>2</sup> *Leo Pharmaceuticals* recognizes the natural consequence of this idea: Persons of skill in the art cannot have tried and failed to solve the problem if they were never aware of that problem to begin with. Thus, the number of years that passed between the prior art and the claimed invention may be a relevant factor to underscore that skilled artisans had long failed to appreciate the problem solved by that invention. Here, there is no question that skilled artisans knew of the desire to reduce waste when producing wearable, knitted shoe uppers because that problem is expressly recognized in *Nishida*. Thus, *Leo Pharmaceuticals* does not control the present case.

#### B. Secondary Considerations

In Nike’s brief supporting the motion to amend filed at the Board, Nike argued that reducing waste was a long-felt need in the shoe manufacturing industry and that *Nishida* did not resolve this need because the process in *Nishida* still resulted in some waste. Nike specifically pointed to its expert’s declaration, which explained that

Nishida shows that reducing material waste during manufacture of textile footwear uppers

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<sup>2</sup> As discussed in the next section, we must remand for reconsideration of obviousness in light of Nike’s evidence of secondary considerations. As such, it may be appropriate for the Board to consider the passage of time in connection with Nike’s secondary considerations evidence on remand.

was a long-felt need. . . . Nishida’s response to this problem was to make the “cutting waste” a simpler, lighter or cheaper material. . . . Unlike Nishida, which simply tried to make “cutting waste” less expensive, the upper of substitute claim 47 solves the long-felt need to reduce flat textile footwear upper manufacturing waste by eliminating the need to cut a textile element from a textile structure, thereby eliminating “cutting waste” (and the associated cutting step) instead of simply making the cutting waste cheaper.

J.A. 1647–48. Despite this argument and evidence, the Board’s final written decision lacks a discussion, or even an acknowledgement, of secondary considerations.

1.

Evidence of secondary considerations plays a critical role in the obviousness analysis because it serves as objective indicia of nonobviousness and “may often be the most probative and cogent evidence in the record. It may often establish that an invention appearing to have been obvious in light of the prior art was not.” *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538–39 (Fed. Cir. 1983). It is well-established that “evidence rising out of the so-called ‘secondary considerations’ must always when present be considered en route to a determination of obviousness.” *Id.* at 1538. In fact, we have expressly stated that “when secondary considerations are present . . . it is *error not to consider them.*” *In re Kao*, 639 F.3d 1057, 1067 (Fed. Cir. 2011) (emphasis added).

Nike argues that the Board erred by failing to address secondary considerations. Neither Adidas nor the PTO disputes that the Board’s Final Written

Decision lacks an acknowledgment of Nike’s secondary considerations evidence. Adidas instead argues that this omission is not an automatically reversible error. Similarly, the PTO argues that the Board did not err because it “*implicitly* found that reducing waste was not a long-felt but unresolved need.” Intervenor Br. 19 (emphasis added). Because long-felt need is indisputably a secondary consideration, *see Graham*, 383 U.S. at 17–18, our precedent dictates that the Board is bound to fully consider properly presented evidence on the long-felt need for a claimed invention. Recognizing that the Board operates under stringent time constraints, we do not hold that it is obliged to explicitly address conclusory and unsupported arguments raised by a litigant. *Cf. Fresenius USA, Inc. v. Baxter Int’l, Inc.*, 582 F.3d 1288, 1296 (Fed. Cir. 2009) (holding that a party cannot preserve an argument if it presents “only a skeletal or undeveloped argument to the trial court”). Under the particular circumstances presented here, however, we conclude that the Board should have explicitly acknowledged and evaluated Nike’s secondary considerations evidence.

2.

Adidas attempts to minimize this gap in the Board’s decision by relying on our decisions stating that there is no requirement that a decision explicitly enumerate each *Graham* factor and include findings specifically in terms of the factors so long as “the required factual determinations were actually made and it is clear that they were considered while applying the proper legal standard of obviousness.” *Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 990 (Fed. Cir. 1988); *see also MySpace, Inc. v. GraphOn Corp.*, 672 F.3d 1250, 1263–64 (Fed. Cir. 2012) (finding no error for failing to explicitly mention secondary considerations because

“the record establishe[d] that the evidence was properly before and considered by the [district] court”).

Both *Specialty Composites* and *MySpace* are distinguishable from the facts of this case. In these earlier cases, we were able to confirm that the respective district courts had weighed the evidence of secondary considerations and reached a conclusion on that evidence because it was presented in written briefing and oral arguments and, critically, the courts made fact findings on that evidence. The absence of express recognition of secondary considerations was inconsequential. *Specialty Composites*, 845 F.2d at 990 (affirming the district court’s obviousness determination because the record established that “the required factual determinations were actually made and it [was] clear that they were considered while applying the proper legal standard of obviousness”); *MySpace*, 672 F.3d at 1263–64 (finding no error for failing to explicitly mention secondary considerations because “the record establishe[d] that the evidence was properly before and considered by the [district] court”). Under these cases, we could perhaps be satisfied with the Board’s decision, even without it mentioning the secondary considerations factor, if the decision had contained some findings indicating a basis for why the Board had rejected Nike’s evidence of long felt need. However, such findings are absent in this case. See *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 873 (Fed. Cir. 1985) (“[W]e must be convinced from the opinion that the district court actually applied *Graham* and must be presented with enough express and necessarily implied findings to know the basis of the trial court’s opinion.”), *overruled on other grounds by Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059 (Fed. Cir. 1998).

Contrary to the PTO's arguments, the Board's statements describing the teachings of the prior art do not amount to an "implicit" rejection of Nike's long-felt-need evidence and argument. The Board made these statements in its motivation to combine analysis. *See Adidas*, 2014 WL 1713368, at \*19. Nothing in that discussion, or in any other part of the Board's decision, suggests that the Board weighed and rejected Nike's evidence of long-felt need to eliminate waste in the manufacture of knit textile uppers en route to concluding that the proposed substitute claims were unpatentable as obvious. We must therefore remand for the Board to examine Nike's evidence and its impact, if any, on the Board's analysis under the first three *Graham* factors.

3.

Adidas finally argues that we can alternatively affirm the obviousness determination, despite the absence of findings on secondary considerations, because there is no nexus between Nike's evidence and the merits of the invention in substitute claims 47–50. *See In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995) ("For objective evidence [of secondary considerations] to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention."). Whether the requisite nexus exists is a question of fact. *Pro-Mold & Tool Co., Inc. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed. Cir. 1996). As such, we cannot resolve this factual dispute in the first instance. *Comiskey*, 554 F.3d at 974. We therefore express no opinion on this argument, except to recognize that the Board may certainly consider it on remand.

## C. Claim 49

As mentioned above, Nike filed a motion to amend pursuant to 35 U.S.C. § 316(d) in which it sought to cancel the challenged patent claims and propose substitute claims. Section 316(d) provides that a patent owner's ability to propose substitute claims is limited to proposing a "*reasonable number* of substitute claims." *Id.* § 316(d)(1)(B) (emphasis added). The PTO interpreted this limit in 37 C.F.R. § 42.121(a)(3) by explaining that "[t]he presumption is that only one substitute claim would be needed to replace each challenged claim." The regulation also acknowledges that this presumption "may be rebutted by a demonstration of need." *Id.* In its *Idle Free* informative decision, the Board further explained that when a patent owner seeks to provide more than one substitute claim for a challenged claim, "the patent owner needs to show patentable distinction of the additional substitute claim over all other substitute claims for the same challenged claim." 2013 WL 5947697, at \*5. If the patent owner fails to carry this burden, "then at the Board's discretion, the proposed additional claim may be denied entry, or it may be grouped with, or deemed as standing and falling with, another substitute claim for the same challenged claim, *e.g.*, the first substitute claim, for purposes of considering patentability over prior art." *Id.*

Nike's proposed substitute claims 48 and 49, both of which depend from substitute claim 47, recite:

Claim 48. (Substitute for dependent claim 19)  
The article of footwear recited in claim [16]  
47, wherein at least one of the first stitch  
configuration and the second stitch configura-  
tion forms an aperture in the [weft-knitted]  
flat knit textile element and the joined edges

shape the flat knit textile element to form a lateral region, a medial region, an instep region and a heel region of the upper.

Claim 49. (Second substitute for dependent claim 19) The article of footwear recited in claim [16] 47, wherein at least one of the first stitch configuration and the second stitch configuration forms [an aperture] a plurality of apertures in the [weft-knitted] flat knit textile element, the apertures formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces.

J.A. 1227. Claim 48 is directed to the general shape of the flat-knitted textile upper. Claim 49, on the other hand, is directed to a knit textile upper containing “apertures” that can be used to receive laces and that are formed by omitting stitches in the knit textile.

Thus, because Nike proposed substitute claims 48 and 49 to replace challenged claim 19, under *Idle Free*, Nike was required to demonstrate that proposed claims 48 and 49 were patentably distinct from one another. On appeal, Nike argues only that the Board erred in its treatment of claim 49 and asserts that the Board should have ultimately found claim 49 patentable.

1.

The Board explained that, under *Idle Free*, whether both claim 48 and claim 49 could be substituted for original claim 19 depended on whether those claims

were patentably distinct from each other.<sup>3</sup> Despite recognizing this standard, the Board proceeded to compare the limitations in each of these claims *to the prior art*. As to claim 48, the Board observed that “Nishida describes joining the edges of the layout to form various portions of the upper.”<sup>4</sup> *Adidas*, 2014 WL 1713368, at \*12. With respect to claim 49, the Board stated that “Nishida describes forming lacing areas by knitting.” *Id.* The Board then concluded that Nike had not demonstrated “that claims 48 and 49 are patentably distinct from each other.” *Id.* Rather than deny entry of claims 48 and 49 on this basis, the Board decided to follow the alternate option provided in *Idle Free* and “group[ed] claim 49 with claim 48, for patentability purposes.” *Id.*

We agree with Nike that, despite correctly reciting the *Idle Free* standard that multiple substitute claims are permissible if they are patentably distinct *from each other*, the Board nevertheless did not engage in any such analysis comparing proposed substitute claims 48 and 49.

Thus, the Board’s decision to group substitute claims 48 and 49 together, meaning that claim 49 would stand and fall with claim 48, is not consistent with the rule set out by the Board in *Idle Free*. The Board has not provided a supported basis for grouping the two claims together in this manner. We must therefore remand for a proper determination of how these claims should be treated per the standard set

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<sup>3</sup> Neither party objects to *Idle Free*’s interpretation of 37 C.F.R. § 42.121(a)(3) or to the PTO’s interpretation of § 316(d)(1)(B) in section 42.121(a)(3).

<sup>4</sup> Nike does not dispute this conclusion.



forth in *Idle Free*, and, if necessary, a full consideration of the patentability of each.

## 2.

Even though the Board did not engage in the proper analysis to group claims 48 and 49 together, Adidas argues that Nike never separately argued the patentability of claim 49, and for that reason it was appropriate to nevertheless find claim 49 unpatentable. Contrary to Adidas's assertion, Nike did argue to the Board that claim 49 was separately patentable. In its motion to amend, Nike explained that "Nishida also does not disclose the limitation of claim 49 regarding apertures." J.A. 1233. Nike supported this argument with its expert declaration:

Nishida also does not teach the limitation requiring "a plurality of apertures in the flat knit textile element, the apertures formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces." While figure 3 of Nishida indicates the upper includes openings for laces, Nishida contains no description or suggestion of forming such openings by omitting stitches in the layout. Thus, it appears such openings were created by an additional manufacturing step, e.g., punching out the openings.

J.A. 1610.

Adidas seems to imply that Nike insufficiently preserved the argument by raising it only in its motion to amend and not in its reply brief. An issue is preserved for appeal, however, so long as it can be said that the tribunal was "fairly put on notice as to the substance of the issue." *Consolidation Coal Co. v.*

*United States*, 351 F.3d 1374, 1378 (Fed. Cir. 2003) (quoting *Nelson v. Adams USA, Inc.*, 529 U.S. 460, 469 (2000)). Nike raised this argument in its motion to amend and supported the argument with its expert declaration. This was sufficient to put the Board on notice that Nike was asserting the “apertures formed by omitting stitches . . . and . . . for receiving laces” limitation as a patentable distinction. We therefore cannot agree with Adidas that Nike has waived its arguments relating to the patentability of claim 49.

3.

Adidas also argues that we can nevertheless affirm the Board’s conclusion that claim 49 is unpatentable in light of Nishida and the Schuessler References. Adidas even asserts that the Board itself engaged in this analysis and found that the additional limitations in claim 49 were disclosed in Nishida. To support this argument, Adidas points to the Board’s above-mentioned, less-than-clear analysis purporting to analyze whether claims 48 and 49 were “obvious over each other.” *Adidas*, 2014 WL 1713368, at \*12.

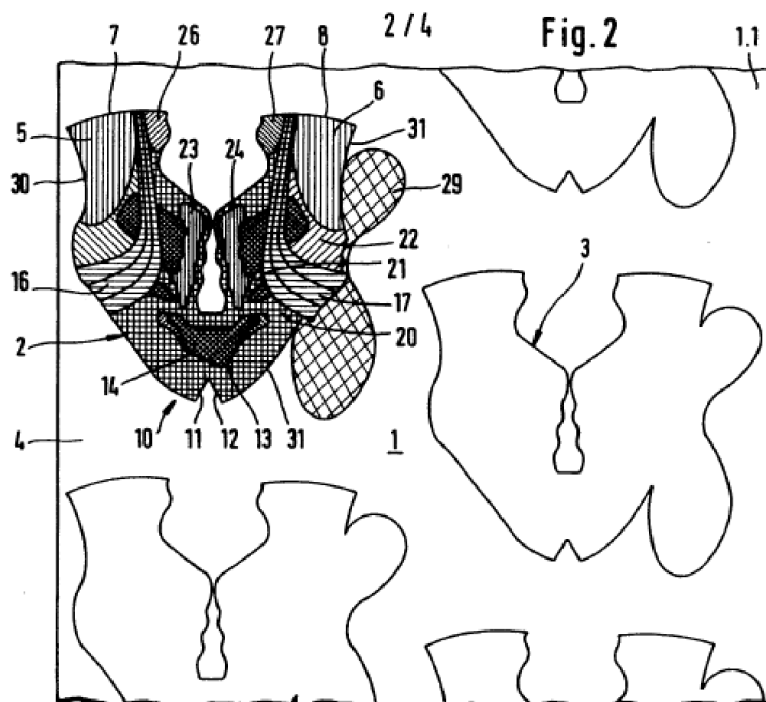
Claim 49 adds the limitation: “a plurality of apertures . . . formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces.” J.A. 1227. The Board merely explained that “[w]ith respect to the additional limitations of claim 49, Nishida describes forming lacing areas by knitting. Further, the Specification of the ’011 Patent describes the omission of stitches, as recited in claim 49, to provide air permeability to the upper.” *Adidas*, 2014 WL 1713368, at \*12 (citations omitted). The Board supported its conclusion that “Nishida describes forming lacing areas by knitting,” by first citing to (but not discussing) Nishida’s specification, which

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describes the concept of shoe laces and lacing areas, as seen in Figures 2 and 3 of Nishida:

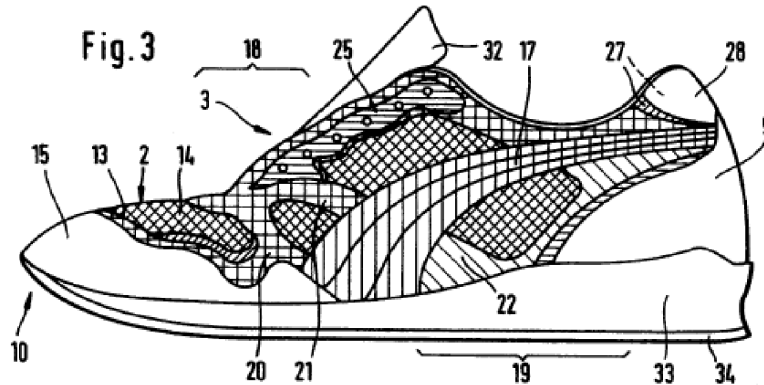
[T]he material can be woven or knitted in two or more layers or can be especially thick or additionally embroidered. Similarly, the lacing areas 23 and 24 can be made dimensionally stable in corresponding manners, especially if, for example, no additional trimmings, such as the lacing strips 25, shown in FIG. 3, are to be applied.

'638 patent, 3:67-4:5.



'638 patent, Figure 2 (illustrating lacing areas 23 and 24 in Nishida's knit textile upper pattern).

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'638 patent, Figure 3 (depicting a completed shoe with the optional lacing strips 25 attached to lacing area 23 or 24). In this same discussion, the Board also pointed to Nike's own patent, the '011 patent, because it "describes the omission of stitches . . . to provide air permeability to the upper."<sup>5</sup> *Id.* (citing '011 patent, 9:57–62). Finally, the Board cited, in a parenthetical, to Nishida's disclosure that the toe area of the upper can have "good air exchange capability . . . by [using] a net-like woven or knitted structure." '638 patent, 3:49–52. The Board did not provide any explanation of the relevance of this passage nor the conclusions that it drew therefrom. Nevertheless, from these passages, the Board concluded that Nike had not demonstrated that claims 48 and 49 were patentably distinct from one another and then decided to group the two proposed substitute claims together for patentability

<sup>5</sup> We are troubled by the Board's citation to the '011 patent's written description and the corresponding appearance of using the '011 patent to find claim 49 unpatentable. Given the confusing analysis of comparing the substitute claims to the prior art to conclude that the substitute claims are not patentably distinct from one another, we are unsure for what purpose the Board was referring to the '011 patent's written description. This confusion can also be resolved on remand.

purposes. At no point did the Board refer to the *Graham* factors and conclude that Nishida renders proposed substitute claim 49 obvious.

The Board's statements are insufficient to support a conclusion that proposed substitute claim 49 is unpatentable as obvious. As discussed above, obviousness determinations require underlying fact-findings, many of which are missing from the Board's decision as it relates to the specific limitations in claim 49. Adidas contends that no additional fact-finding is needed by pointing to the holes in the lacing area depicted in Nishida's Figure 3. But, the Board did not point to any disclosure in Nishida that explains the manner in which these holes were created, whether through knitting or some other way. In fact, the Board's short discussion did not even address the presence of the holes in either claim 49 or Nishida. Further, Nishida's specification never specifically discusses the lacing holes of its upper; they are only shown in Figure 3. It may well be that the Board intended to convey that claim 49 was obvious in light of Nishida because skipping stitches to form apertures, even though not expressly disclosed in Nishida, was a well-known technique in the art and that understanding perhaps would be a basis to conclude that one of skill in the art would utilize this technique to create holes for accepting shoe laces.<sup>6</sup> But, the Board did not articulate

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<sup>6</sup> Adidas also asserts that the manner in which the lacing holes are created is irrelevant because the "formed by omitting stitches" portion of the limitation is nothing more than a product-by-process limitation. Because this was not raised to the Board during the IPR proceedings, we decline to opine on the issue except to say that, if given the opportunity, Adidas may raise this argument to the Board on remand. See *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1367 (Fed. Cir. 2015) ("We do not direct the Board to take new evidence or, even, to accept

these findings. This portion of the Board's analysis on whether Nike's proposal of claim 48 and 49 constituted a reasonable number of substitute claims for originally issued claim 19 lacks critical fact-findings needed for any obviousness determination. We are unable to engage in such fact-finding in the first instance and must therefore remand for further proceedings. *See Ariosa*, 805 F.3d at 1365 ("But we must not ourselves make factual and discretionary determinations that are for the agency to make.").

## 4.

Nike, on the other hand, requests that we reverse and find claim 49 patentable because Nishida does not disclose the formation of apertures by omitting stitches. Nike specifically argues that the Board misunderstood the scope of claim 49 and the disclosure of Nishida. According to Nike, the Board failed to realize that claim 49 requires more than just knit "lacing areas," but requires apertures formed from skipping stitches in the knit pattern in an orientation such that the resulting apertures are capable of accepting shoe laces. *See Adidas*, 2014 WL 1713368, at \*12 ("With respect to the additional limitations of claim 49, Nishida describes forming lacing areas by knitting.").

To support this argument, Nike points to its expert, who opined that, "[w]hile figure 3 of Nishida indicates the upper includes openings for laces, Nishida contains no description or suggestion of forming such openings by omitting stitches in the layout. Thus, it appears such openings were created by an additional manufacturing step, e.g., punching out the openings." J.A.

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new briefing. The Board may control its own proceedings, consistent with its governing statutes, regulations, and practice.").

1610. Nike asserts that this interpretation of the lacing holes in Nishida is correct based on Nishida's explanation that the knit upper "can be provided with an embroidery, especially with an English embroidery (i.e., the type of embroidery by which a hole pattern is welded and which is commonly used for the sewing of button holes), of a trademark or another mark or identification on suitable or preferred places." '638 patent, 4:33–38. Nike's expert further opined that there would have been "no motivation or other reason that would have prompted one of ordinary skill in the art at the time of the invention to modify Nishida to include this additional feature." J.A. 1613.

Based on this evidence, Nike urges us to find claim 49 patentable. We are unable to do so on this record because, as already explained, the Board has not made the requisite factual findings. Importantly, there are no findings from the Board about the scope and content of the passages from Nishida's written description on which Nike now relies. Further, there is no discussion about whether Nike's expert's statement was sufficient to demonstrate that there was no motivation to modify Nishida to arrive at lace holes formed by omitting stitches. Thus, we cannot, as Nike requests, reverse and find claim 49 patentable. Any resolution of this issue requires a factual analysis that must be done by the Board in the first instance.

### III. Adidas's Alternative Grounds for Affirmance

Adidas also argues that, even if we cannot affirm the Board's obviousness conclusion, there are numerous alternative grounds on which we could affirm claim 49's unpatentability. First, Adidas argues that the Board's construction of "flat knit edges" is overly narrow and that, under the correct construction, Nishida anticipates all of the proposed substitute

claims. Second, Adidas asserts that, even under the Board's construction, Nishida alone renders the proposed substitute claims obvious. Finally, Adidas contends that we should affirm the outcome reached by the Board because, contrary to the Board's decision, Nike's proposed substitute claims are inadequately supported by the '011 patent's written description.

1.

We review the Board's ultimate claim construction de novo and any underlying factual determinations involving extrinsic evidence for substantial evidence. *Teva Pharm. U.S.A., Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841–42 (2015). When, as here, the intrinsic record fully determines the proper construction, we review the Board's claim construction de novo. *Id.* at 840–42; *see also Proxycorr*, 789 F.3d at 1297.

Each of Nike's proposed substitute claims is directed to a “flat knit textile element . . . having flat knit edges free of surrounding textile structure.” Before the Board, Adidas argued that the broadest reasonable interpretation of “flat knit edges” should encompass not only flat-knit edges that are created when a flat knit textile element is knit to shape, but also edges created from cutting a textile element from a larger textile. The Board disagreed and determined that the broadest reasonable construction of the term “flat knit edges” is “an edge of a flat knit textile element, which is itself flat knit, e.g., which is not formed by cutting from a flat knit textile element.” *Adidas*, 2014 WL 1713368, at \*9. The Board arrived at this interpretation because any broader interpretation would be inconsistent with “the context of *this* claim (including surrounding claim language) and in the context of the Specification of *this* patent.” *Id.* (emphasis in original).



On appeal, Adidas again argues that the Board erred because “flat knit edge” does not preclude edges formed by cutting. We agree with the Board’s construction. The language of proposed substitute claim 47 expressly recites that a “flat knit textile element, the flat knit textile element having flat knit edges *free of surrounding textile structure from which the textile element must be removed . . .*” J.A. 1226 (emphasis added). This claim language demonstrates that the scope of this claim is limited to a flat-knit textile element where the flat knit edges have not been removed, or cut, from a surrounding textile structure. An interpretation that included a flat-knit textile element that has been cut from a larger textile web would contradict the express claim language.<sup>7</sup>

We therefore affirm the Board’s conclusion that the broadest reasonable interpretation of “flat knit edge” is “an edge of a flat knit textile element, which is itself flat knit, e.g., which is not formed by cutting from a flat knit textile element.” Because we affirm the Board’s construction of the term “flat knit edges,” we need not consider Adidas’s argument that Nishida would anticipate under Adidas’s proposed construction.

2.

Adidas next argues that, even if we affirm the Board’s construction of “flat knit edges,” we should nevertheless affirm the Board’s conclusion that the proposed substitute claims are unpatentable because Nishida alone, without the Schuessler References, renders the claims obvious. This argument also fails.

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<sup>7</sup> Because Adidas is requesting an even broader construction than the broadest reasonable instruction, our conclusion that Adidas’s construction is incorrect would not change under the standard used in district court proceedings.

A single-reference obviousness conclusion would avoid only the question of whether there existed a motivation to combine the teachings of Nishida and the Schuessler References. We have already found the Board's finding on this question supported by substantial evidence. Adidas's single-reference obviousness argument does not, however, resolve the Board's failure to address Nike's evidence of secondary considerations. We therefore reject this argument as an alternative ground to affirm on the record before us.

## 3.

Adidas finally asserts that we should affirm the Board's conclusion that the proposed substitute claims are unpatentable because they lack adequate written description support. Whether a claim is supported by the patent's written description is a question of fact that we review for substantial evidence. *See Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1355 (Fed. Cir. 2010) (en banc); *In re Morsa*, 713 F.3d 104, 109 (Fed. Cir. 2013) (factual determinations by the Board are reviewed for substantial evidence).

To adequately support the claims, the written description "must clearly allow persons of ordinary skill in the art to recognize that the inventor invented what is claimed." *Ariad*, 598 F.3d at 1351 (internal quotation marks omitted). "Substantial evidence supports a finding that the specification satisfies the written description requirement when the essence of the original disclosure conveys the necessary information—regardless of *how* it conveys such information, and regardless of whether the disclosure's words are open to different interpretations." *Inphi Corp. v. Netlist, Inc.*, 805 F.3d 1350, 1354 (Fed. Cir. 2015) (internal quotation marks omitted); *see also In re Ruschig*, 379 F.2d 990, 995 (CCPA 1967) (the written description

requirement serves the same function as “blaze marks on the trees” to help “find[] one’s way through the woods”).

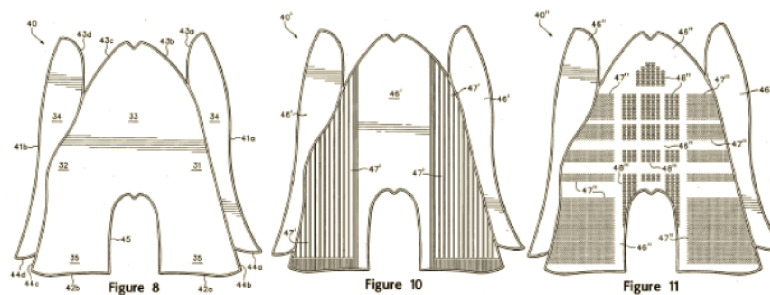
Adidas argued that the “flat knit edge” limitation was a negative limitation. Adidas further argued that negative limitations must satisfy a heightened written description requirement under our decision in *Santarus, Inc. v. Par Pharmaceutical, Inc.*, 694 F.3d 1344 (Fed. Cir. 2012). The Board disagreed and concluded that, even if the limitation was a negative limitation, it was “supported by the positive disclosure of the various forms of the textile element” shown in the ’011 patent’s written description. *Adidas*, 2014 WL 1713368, at \*9.

On appeal, Adidas again argues that the term “flat knit edge” is a negative limitation and as such it must satisfy a “heightened requirement” of written description support. Appellant’s Br. 51 (citing *Santarus*, 694 F.3d at 1351). It is worth noting that we doubt that the present limitation is properly characterized as a negative limitation. Negative limitations generally recite an express exclusion of material. For example, in *Inphi*, we addressed claim language that expressly excluded the use of certain signal types in a claim relating to computer system memory modules. *Inphi*, 805 F.3d at 1352–53 (“the chip selects of the first and second number of chip selects are DDR chip selects *that are not CAS, RAS, or bank address signals*” (emphasis added)). Similarly, in *Santarus*, we examined claim language that expressly excluded the use of sucralfate in a claim directed to the treatment of an acid-caused gastrointestinal disorder. *Santarus*, 694 F.3d at 1350 (“wherein the composition contains no sucralfate”).

Even if we assume, as the Board did, that this claim limitation is a negative limitation, Adidas is incorrect

that any sort of heightened standard applies. “Negative limitations are adequately supported when the specification describes a reason to exclude the relevant limitation.” *Id.* at 1351. We recently explained in *Inphi* that, contrary to Adidas’s argument, *Santarus* did not create a heightened standard for written description support of negative limitations. *Inphi*, 805 F.3d at 1356. We further explained that “[w]hen viewed in its proper context, *Santarus* simply reflects the fact that the specification need only satisfy the requirements of § 112, paragraph 1 as described in this court’s existing jurisprudence.” *Id.* (citing MPEP § 2173.05(i) (“If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims.”)). Thus, we need only consider whether the disclosures of the ’011 patent, using the customary standard for the written description requirement, allow persons of ordinary skill in the art to recognize that the inventor invented a flat-knit textile with flat-knit edges that are knit to shape rather than being cut from a larger textile web.

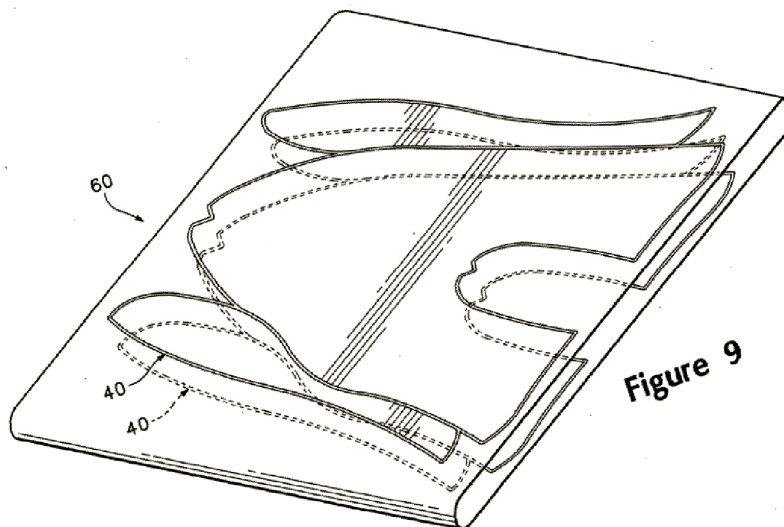
In reaching its conclusion that the proposed substitute claims were supported by the '011 patent's written description, the Board emphasized Figures 8, 10, and 11.



'011 patent, Figures 8, 10, 11. These figures illustrate the shape of textile element 40 before the formation of

seams to create the general shape for receiving a foot. Even Adidas's expert agreed that the upper illustrated in Figure 8 "could be made on a flat knitting machine" and "then the edges that are shown in Figure 8 would be flat knitted." J.A. 1483; *see also* J.A. 1574 (Nike's expert opining that "[t]he disclosure in the '011 patent that the textile elements in Figures 8, 10, and 11 can be made using flat knitting makes it clear that these textile elements can be knit to the shapes shown in these figures (*i.e.*, without surrounding textile structure) using flat knitting.").

These figures are in sharp contrast to Figure 9, which is formed using a "wide-tube circular knitting machine," as opposed to a flat-knitting machine. '011 patent, 6:66–7:8, 7:41–43; *see also id.* at 7:29–32 (explaining that a circular knitting machine "forms a generally cylindrical textile structure").



'011 patent, Figure 9. As shown in Figure 9, a circular knit upper, as distinguished from flat knit, must be removed from surrounding textile material by, for

example, cutting. In addition, Nike's expert explained that the embodiment illustrated in Figure 9 is made "using a circular knitting process and requires that the textile element [40] be formed as part of a larger textile structure [60]" and "requires additional processing to remove the textile element [40] from the textile structure [60]." J.A. 1571. The Board agreed with Nike that the language describing Figure 9 "does not limit the textile elements depicted in Figures 8, 10, and 11 to those manufactured according to the process of Figure 9." *Adidas*, 2014 WL 1713368, at \*15.

In addition, the Board cited Nike's expert's declaration explaining that the textile upper shown in Figures 8, 10, and 11 "illustrates multiple examples in which the textile element is shown in its final shape and is not described as being formed as part of a larger textile structure from which it must be removed." *Id.* (quoting J.A. 1587). The written description and the originally issued claims make a distinction between textile elements that are removed from a larger textile web and those that are not. For example, the patent discusses the textile element 40 as "a single material element that is formed to exhibit a unitary (i.e., one-piece) construction." '011 patent, 5:38–39. The patent then explains that "[t]extile element 40 *may be* formed as a part of a larger textile element," which would then require that "textile element 40 is . . . removed from the larger textile element." *Id.* at 5:43–45. In fact, only one of the originally issued, now cancelled, independent claims is expressly directed to an upper where "the textile element [is] removed from a textile structure." *Id.* at 13:47–14:6 (claim 36). Accordingly, based on the Figures in the '011 patent, the disclosures in the written description, and the expert testimony, we conclude that substantial evidence supports the Board's decision that the proposed substitute claims

are adequately supported by the written description of the '011 patent.

#### IV. Establishing Patentability Over Prior Art Not of Record But Known to the Patent Owner

The Board's *Idle Free* decision explained that, under 37 C.F.R. § 42.20(c), a motion to amend will be successful only if the patent owner "persuade[s] the Board that the proposed substitute claim is patentable over the prior art of record, *and over prior art not of record but known to the patent owner.*" 2013 WL 5947697, at \*4 (emphasis added). Nike attempted to carry this burden in its motion to amend by simply stating that its proposed claims were patentable over prior art known to Nike, but not part of the record of the proceedings. *See* J.A. 1228. The Board denied Nike's request to enter proposed substitute claims 47–50 in part because Nike's motion failed to address any prior art reference that was not discussed in Adidas's petition for review or Adidas's opposition to Nike's motion to amend, i.e., any prior art not of record. *Adidas*, 2014 WL 1913368, at \*17 (finding Nike's "conclusory statement" to be "facially inadequate" under the Board's understanding of *Idle Free*). As discussed above, as an alternative ground to deny Nike's motion, the Board went on to consider the patentability of Nike's proposed substitute claims on the merits. Because we must vacate and remand the Board's obviousness conclusion, we must now consider whether the Board's denial of Nike's motion to amend for failure to show patentable distinction over "prior art not of record but known to the patent owner" provides an adequate basis for affirmance. For the reasons explained below, we conclude that it is not.

After the Board's decision in this case, the Board issued *MasterImage 3D, Inc. v. RealD Inc.*, IPR2015-

00040, 2015 WL 4383224 (PTAB July 15, 2015), which has been designated by the PTO as a Representative Decision on Motions to Amend. *See* Standard Operating Procedure 2, at 3 (§ IV.A–B) (explaining that Board decisions labeled “representative” are “not binding authority,” but provide “a representative sample of outcomes on a matter”). In *MasterImage 3D*, the Board “ma[d]e three points of clarification regarding” *Idle Free*’s requirement that the patent owner show that its proposed substitute claims are patentable over the prior art of record and also other prior art known to the patent owner. Importantly, the Board explained that “[t]he reference to ‘prior art known to the patent owner’ . . . in *Idle Free*, should be understood as no more than the material prior art that Patent Owner makes of record in the current proceeding pursuant to its duty of candor and good faith to the Office under 37 C.F.R. § 42.11, in light of the Motion to Amend.” *Master-Image 3D*, Slip. Op. at 3. At oral argument in the present case, the PTO confirmed this characterization of *Master-Image 3D*. *See* Oral Argument at 29:13–29:22 available at <http://cafc.uscourts.gov/oral-argument-recordings/2014-1719/all> (“[*MasterImage*] is not a change of *Idle Free*, it’s more of a clarification of *Idle Free*.”). The PTO further explained that, although the Board’s denial of Nike’s motion to amend was based on a reasonable reading of *Idle Free*, given the clarification in *MasterImage 3D*, the PTO acknowledged that the Board “read *Idle Free* too aggressively in this decision.” *Id.* at 29:23–30:01.

We agree with the PTO. At the heart of *Idle Free*, as interpreted by *MasterImage 3D*, is the question of whether the patent owner has submitted the necessary information to comply with its duty of candor to the office. In this case, there is not, and there has never been, an allegation that Nike violated its duty of



candor. Moreover, the PTO acknowledged that Nike's statement about the substitute claims' patentability over prior art not of record but known to Nike would satisfy the obligation as explained in *MasterImage 3D*. *Id.* at 35:50–36:06. After *MasterImage*'s explanation of *Idle Free*, we cannot see how the statement used by Nike would be inadequate, absent an allegation of conduct violating the duty of candor. We therefore conclude that this was an improper ground on which to deny Nike's motion to amend.

#### CONCLUSION

For the foregoing reasons, we vacate the Board's obviousness determination and remand for further proceedings consistent with this opinion.

AFFIRMED-IN-PART, VACATED-IN-PART,  
AND REMANDED

#### COSTS

No costs.

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**APPENDIX D**

NOTE: This order is nonprecedential.

UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT

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2021-1903

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NIKE, INC.,

*Appellant*

v.

ADIDAS AG,

*Appellee*

KATHERINE K. VIDAL, UNDER SECRETARY OF  
COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND  
TRADEMARK OFFICE,

*Intervenor*

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Appeal from the United States Patent and  
Trademark Office, Patent Trial and Appeal Board  
in No. IPR2013-00067

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ON PETITION FOR REHEARING EN BANC

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Before MOORE, Chief Judge, NEWMAN, LOURIE, DYK,  
PROST, REYNA, TARANTO, CHEN, HUGHES, STOLL,  
and STARK, Circuit Judges.<sup>1</sup>

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<sup>1</sup> Circuit Judge Cunningham did not participate.

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ORDER

PER CURIAM.

Nike, Inc. filed a petition for rehearing en banc. The petition was first referred as a petition for rehearing to the panel that heard the appeal, and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

The mandate of the court will issue November 28, 2022.

November 21, 2022

Date

FOR THE COURT

/s/ Peter R. Marksteiner

Peter R. Marksteiner  
Clerk of Court