

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LULULEMON USA INC.,
Petitioner,

v.

NIKE, INC.,
Patent Owner.

IPR2024-00159
Patent 9,375,046 B2

Before CARL M. DEFRANCO, GEORGE R. HOSKINS, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

DEFRANCO, *Administrative Patent Judge*.

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

Nike, Inc. (“Nike”) is the owner of U.S. Patent No. 9,375,046 B2 (“the ’046 patent”). lululemon usa inc. (“lululemon”) filed a petition requesting an *inter partes* review of claims 1–3, 7–9, and 14–20 of the ’046 patent. Paper 1 (“Pet.”). Nike filed a preliminary response. Paper 6 (“Prelim. Resp.”). Because we determine that lululemon has demonstrated a reasonable likelihood that at least independent claim 8 of the ’046 patent is unpatentable, we institute *inter partes* review on all the claims as challenged in the Petition. *See* 35 U.S.C. § 314(a).

I. BACKGROUND

A. Related Matters

The ’046 patent is the subject of a parallel action in *Nike, Inc. v. lululemon usa inc.*, No. 1:23-cv-00771 (S.D.N.Y.) (“the parallel SDNY action”). *See* Pet. 1; Paper 5, 2. The ’046 patent was also the subject of a previous action in *Nike, Inc. v. Puma North America, Inc.*, No. 1:18-cv-10876 (D. Mass.) (dismissed in January 2020 due to settlement), as well as a previous petition for *inter partes* review in IPR2019-01059 (terminated due to settlement before institution). *See* Pet. 1.

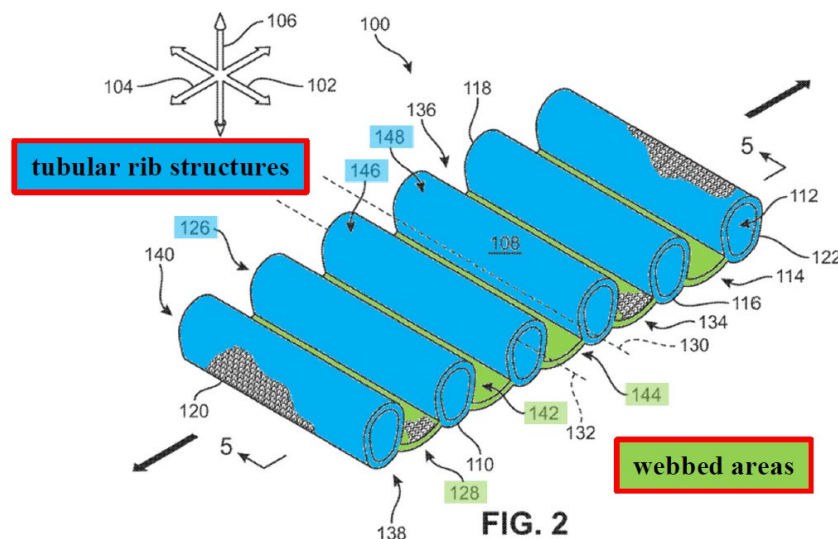
B. The ’046 Patent

The ’046 patent relates to a “knitted component formed of unitary knit construction” that is incorporated, for example, into the “upper” of an “article of footwear.” Ex. 1001, 2:27–30, 5:48–60. The knitted component includes “a plurality of webbed areas” extending between “a plurality of tubular rib structures.” *Id.* at 2:30–31, Fig. 1. The webbed areas are constructed of a “first yarn” that is “flexible, elastic, and resilient” and “can resiliently stretch, deform, compress, flex, or otherwise move between a first position and a second position.” *Id.* at 2:31–33, 4:64–5:4. The tubular rib

structures are constructed of a “second yarn” that “provide[s] strength and/or support to [the] knitted component.” *Id.* at 2:33–34, 4:55–58.

Due to their resiliency and elasticity, the webbed areas can “move between a neutral position and an extended position” in response to a force applied to them, such as during walking or running. *Id.* at 2:38–43, 5:5–31. When in an unstretched and neutral position, the webbed areas are hidden from view by the “curved portion” of the tubular structures disposed on either side of the webbed areas. *Id.* at 12:41–49, Fig 3. But when a force is applied that moves the webbed areas to a stretched and extended position, the tubular structures spread apart to reveal the underlying webbed areas that were previously hidden by the curved portions. *Id.* at 12:49–56; *see also id.* at 18:34–49 (essentially the same). Thus, according to the ’046 patent, the knitted component has the desirable visual effect of hiding and revealing contrasting colors as it stretches and contracts, such as when the wearer of the footwear walks or runs. *Id.* at 12:56–61; 18:49–52.

Figure 2 of the ’046 patent, as annotated by lululemon and reproduced below, depicts the knitted component’s webbed areas (in green) and tubular rib structures (in blue) in a stretched and extended position. *See* Pet. 5.



C. Asserted Challenges

Claims Challenged	35 U.S.C. §	Basis
1–3, 7, 16–18, 20	§ 102 / § 103	Good ¹
1–3, 7, 17, 18, 20	§ 102	Munsing ²
8, 9, 14, 15, 19	§ 102 / § 103	Minami ³

In further support of its challenges, lululemon submits the declaration testimony of David S. Brookstein, Sc.D. *See* Ex. 1003. Nike, in turn, submits the declaration testimony of Christopher M. Pastore, Ph.D. *See* Ex. 2002.

D. Challenged Claims

Of the challenged claims, claims 1, 8, and 20 are independent. Claim 8, reproduced below, is illustrative of the challenged claims and recites:

8. An upper comprising:
- a plurality of webbed areas and a plurality of tubular rib structures;
 - the plurality of webbed areas having a front side and a back side;
 - the tubular rib structures being disposed adjacent to the webbed areas:
 - the tubular rib structures having a first curved portion with a first curve length extending from the front side of the webbed areas, and a second curved portion with a second curve length extending from the back side of the webbed areas, the first curve length being greater than the second curve length;
 - the webbed areas configured to move between a neutral position and an extended position, the webbed areas being biased to move toward the neutral position; and

¹ US 4,702,091, iss. Oct. 27, 1987 (Ex. 1005, “Good”).

² US 391,005, iss. Oct. 9, 1888 (Ex. 1006, “Munsing”).

³ US 2014/0130374 A1, pub. May 15, 2014 (Ex. 1007, “Minami”).

at least one of the webbed areas and the tubular rib structures configured to stretch from the neutral position to the extended position in response to a force applied to the upper.

Ex. 1001, 33:43–62.

II. ANALYSIS

A. Level of Skill in the Art

lululemon contends, and Nike does not dispute, that a person skilled in the art in the relevant time frame would have had “at least a bachelor’s degree in mechanical engineering, textile engineering, or similar technical degree and at least 3 years of experience working with knitted textiles for use in fabric-based articles, including apparel such as footwear” and such person’s “additional experience compensates for any differences in that person’s education as stated above.” Pet. 13–14 (citing Ex. 1003 ¶¶ 33–35); *see also* Prelim. Resp. 14 (“Nike applies lululemon’s proposed level of skill in the art.”).

lululemon’s proposed definition is consistent with the problems and solutions described in the ’046 patent and the prior art of record. Thus, for purposes of institution, we adopt the parties’ agreed-upon definition of the level of skill in the art.

B. Claim Construction

We apply the same claim construction standard used in the district courts. *See* 37 C.F.R. § 42.100(b) (2019). Also, only those claim terms in dispute need be construed at this time, and only to the extent necessary to determine whether institution is appropriate. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (approving Board decision not to construe claim language where the construction is not material to the dispute).

lululemon identifies four claim terms for construction—“tubular structures/tubular rib structures,” “neutral position,” “extended position,” and “unitary knit construction.” Pet. 14–17. For three of those terms—“neutral position,” “extended position,” and “unitary knit construction”—lululemon notes the parties’ agreed-upon construction in the parallel SDNY action, and appears to urge that construction here. *See* Pet. 14, 17 (citing Ex. 1014, 11). Nike agrees. *See* Prelim. Resp. 15 (identifying “tubular structures” as only term in dispute). Thus, at this stage, we adopt and apply the parties’ agreed-upon construction of those three terms. *See* Ex. 1014, 11.

The parties dispute, however, the meaning of “tubular structures,” as recited in claims 1 and 20, and “tubular rib structures,” as recited in claim 8. lululemon submits that “tubular structures” should be construed as “elongated hollow structures.” Pet. 15. Nike responds that tubular structures “need not be hollow,” and, in any event, construction of this term “is not necessary to resolve the controversy presented by lululemon’s petition.” Prelim. Resp. 15.

At the outset, we note that, in the parallel SDNY action, the district court “adopt[ed] Nike’s proposed construction of ‘tubular structures’ as ‘tube-like structures,’” and rejected lululemon’s proposed construction because it “would potentially confuse a jury to think that where a tubular structure is filled by another element, it is no longer ‘hollow,’ and thus no longer a tubular structure.” Ex. 3001, 5.⁴ In doing so, the district court explained that:

A tube need not *always* be hollow. Tubes can be filled (mail tubes, toothpaste tubes, etc.) and yet they don’t suddenly lose

⁴ Memorandum Opinion and Order (Dec. 28, 2023).

their tubular nature. While they may no longer be fully “hollow” like a tube, they still retain the “shape” or the “form” of a tube, which is consistent with the dictionary definitions of “tubular” referred to above. The specification of the ‘046 patent also recognizes this fact. It notes that “[i]n some embodiments, the central area of tubular rib structures 126 may be configured such that another element (e.g., a tensile element) *may be located between and pass through* the hollow between the two knit layers forming tubular rib structures 126.” Dkt. 1–2 at 7:26–30 (emphasis added). In this example, while the tubular structure is *initially hollow*, one might not describe the structure as hollow once it is filled with the referenced tensile element. This is a problem for lululemon because its proposed construction would potentially confuse a jury to think that where a tubular structure is filled by another element, it is no longer “hollow,” and thus no longer a tubular structure.

Ex. 3001, 4–5 (third emphasis added).

Notably, by recognizing that a tubular structure must be “initially hollow” before being “filled” with a tensile element, the district court appears to account for the hollow configuration of a tube. Indeed, that interpretation is consistent with the claim language, with independent claim 1 reciting simply “a plurality of tubular structures” while dependent claim 5 adds that “the plurality of tubular structures includes a tensile element disposed in a central unsecured area within *the hollow* between the two layers.” Ex. 1001, 32:47–49, 33:14–17 (emphasis added). Thus, the claim language appears to presume a hollow configuration for the claimed “tubular structures.” Nonetheless, for reasons discussed below in the specific context of lululemon’s challenges, we need not decide this issue for purposes of institution. However, should the parties so desire, they are free to further address in their trial submissions whether a tubular structure by its nature includes of a hollow configuration.

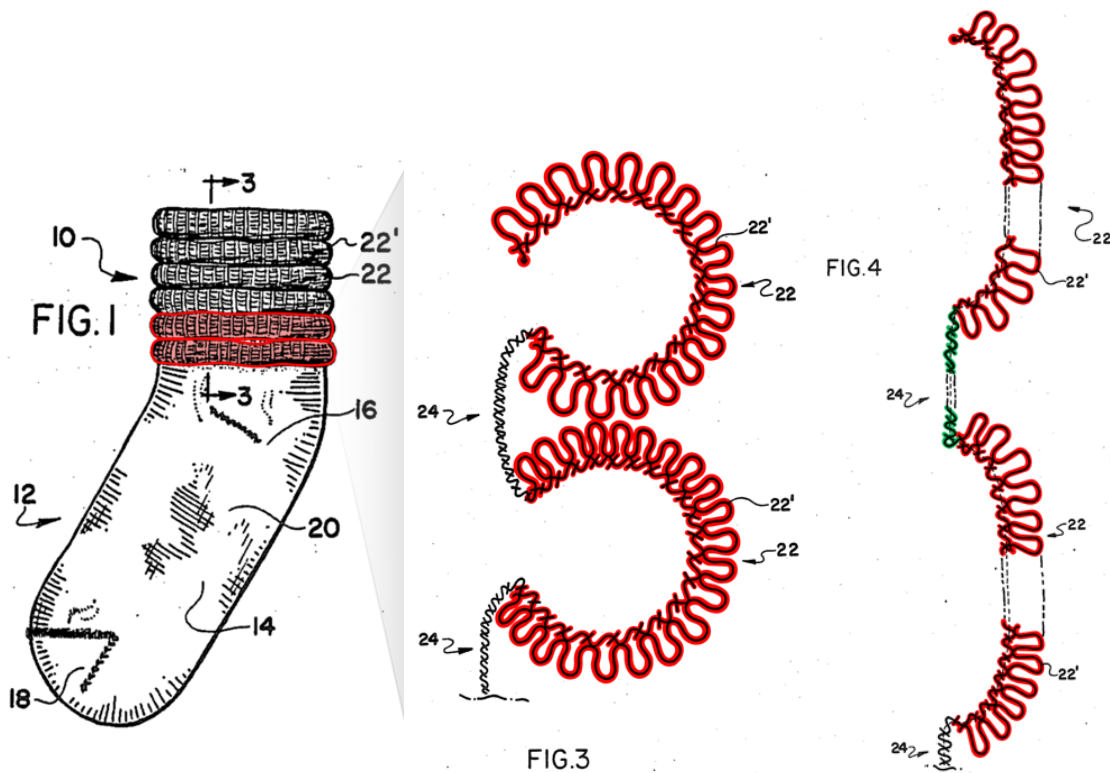
We note another issue regarding the meaning of “tubular structures,” at least as it relates to the challenges relying on Good and Munsing. Although not addressed by the district court, the parties and their experts appear to agree that “tubular structures” comprise “co-extensive and overlapping knit layers that are *closed* to form the tube.” *Compare* Pet. 9 (quoting Ex. 1001, 4:58–61 (emphasis added)), *with* Prelim. Resp. 17 (“The parties agree that, under either construction, a ‘tubular structure’ must be a closed-loop structure that is shaped like a tube.”). Indeed, the specification of the ’046 patent clearly supports such an interpretation. *See* Ex. 1001, 17:43–46 (“at least one tubular course 804 may be joined by knitting to at least one web course 806 so as to form a loop and *close* tubular rib structure 126” (emphasis added)); *id.* at 20:3–5 (“course 1002 may form the second curved portion of tubular rib structure 126 that *closes* tubular rib structure 126 and forms a hollow tunnel” (emphasis added)); *see also id.* at 10:20–32 (“first curved portion 416 and second curved portion 418 may be *knitted together* to define the tube forming tubular rib structure 126” (emphasis added)). Thus, for purposes of institution and consistent with the parties’ positions, we construe the claimed “tubular structures” as at least having a closed periphery or circumference.

C. Ground 1

lululemon contends that claims 1, 2, 3, 7, 16–18, and 20 are anticipated by Good and that claim 3 is also rendered obvious by Good. Pet. 19–43. Nike, in turn, argues that Good lacks the “tubular structures” of independent claims 1 and 20. Prelim. Resp. 17–21.

Nike has the better position. As shown in Nike’s annotated Figures 1, 3, and 4 from Good (reproduced below), it is undisputed that Good discloses

a sock having ankle cuff member 10 with rib portions 22 (in red) and webbed areas 24 (in green). *See* Prelim. Resp. 18–19. lululemon argues that Good’s rib portions 22 meet the claimed “tubular structures” because each of rib portions 22 takes “the shape of a tube, namely an elongate hollow structure.” Pet. 29–30. In support, lululemon points to Figure 3 of Good (reproduced below center) as allegedly showing the tubular shape of Good’s rib portions 22. *Id.* at 30.



Annotated Figure 3 is a vertical cross-section of rib portions 22 shown in Good’s Figure 1 and highlighted in red. But, as Nike points out, Good’s rib portions 22 are “C-shaped knitted portions,” rather than “closed-loop tubular structures.” Prelim. Resp. 18–19 (citing Ex. 2002 ¶¶ 39–42). Indeed, when Good’s rib portions 22 are stretched—as shown in annotated Figure 4 of Good (reproduced above right)—it is clear that they are not tubular, but instead go from an essentially C-shaped curve (in Figure 3) to a

relatively flat, linear configuration (in Figure 4). Nowhere does Good disclose that the ends of C-shaped rib 22 meet and remain in a *closed* configuration per our construction of “tubular rib structure,” as discussed above in Section II.B. In at least this way, Good’s C-shaped rib portions 22 differ from the claimed “tubular structures.”⁵ This is true regardless of whether the claimed “tubular structures” are construed *to be hollow*, because Good’s rib portions 22 are in fact hollow and nothing is disposed inside of them. Thus, we conclude that lululemon does not demonstrate a reasonable likelihood of prevailing on its Good-based ground.

D. Ground 2

lululemon also contends that claims 1–3, 7, 17, 18, and 20 are anticipated by Munsing. Pet. 43–58. Like it did for lululemon’s Good-based ground, Nike contends that Munsing fails to disclose the claimed “tubular structures.” *See* Prelim. Resp. 21–24. We agree.

lululemon asserts that Munsing’s fabric “is formed of ribs and valleys (webbed areas) between the ribs” and that “[t]he ribs separating the valleys are tubular structures.” Pet. 50. lululemon submits annotated Figure 2 of Munsing, reproduced below, as evidence that Munsing’s ribs are tubular structures. *Id.* at 48, 50.

⁵ We acknowledge lululemon’s reliance on Good’s statement that “each rib portion 22 is formed of a selected predetermined number of courses sufficient *to enable the axial ends of each rib portion 22 to roll substantially together* in the relaxed condition.” Pet. 29 (quoting Ex. 1005, 12:34–38 (emphasis added)). However, even if the ends of the C-shape rib are “substantially together,” as stated in Good, they nonetheless are not “closed” as required by our construction of “tubular structure” as claimed.

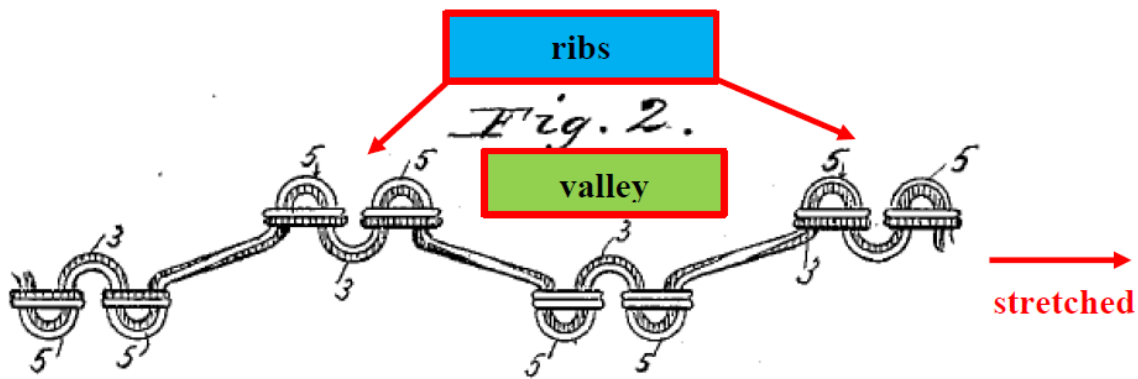
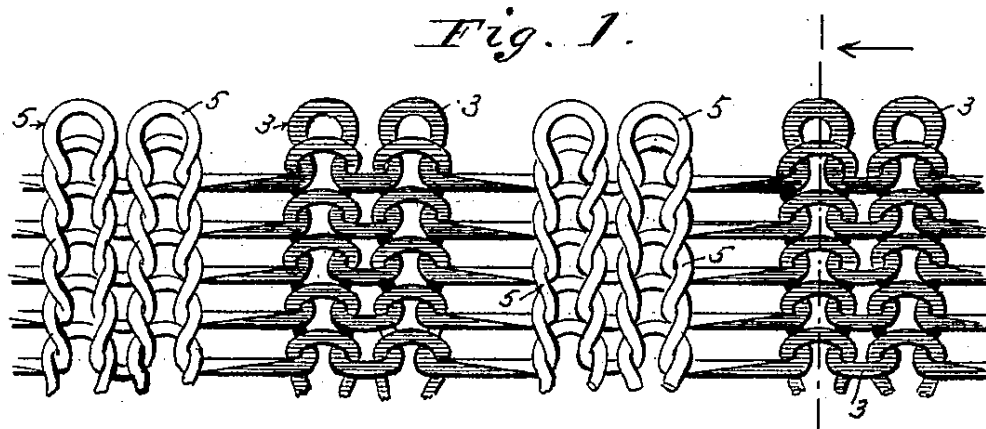


Figure 2 is a view looking at the top edge of Munsing's fabric as shown in Figure 1, reproduced below.



As shown and described, Munsing's figures depict rows of wool threads 3 and silk threads 5 stitched together to form a ribbed texture on the fabric. Ex. 1006, 1:61–87. Indeed, Munsing describes the stitching process as follows:

The silk thread lies under the other in the throat of the needle, and when the stitches are cast off from the needles the silk thread lies on the outer surface of the other thread in the loop and practically covers the same. After one, two, or more stitches have been formed by one set of needles (thus making the rib that is on one side of the fabric) the opposite needles are raised and in a similar manner form the stitches that make the rib on the other side of the fabric. . . . The silk is thrown upon the outside of the loop in this instance, as before, and covers the other thread.

The silk thread, it is seen, thus passes from the outer surface of one rib across to the outer surface of the other.

Id. at 1:75–90.

lululemon provides no meaningful explanation as to how the rows of “stitches” that form Munsing’s ribs equate to “tubular structures.” At best, Munsing depicts rows of C-shaped stitches or loops that together form a rib on the fabric. But nowhere does Munsing indicate that the rows of stitches or loops form a rib that is tubular-like, let alone one with a closed periphery. Nor does lululemon’s expert declaration offer any help, as it simply parrots the petition. *See* Ex. 1003 ¶¶ 101–102. Thus, lululemon does not demonstrate a reasonable likelihood of prevailing on its Munsing-based ground.

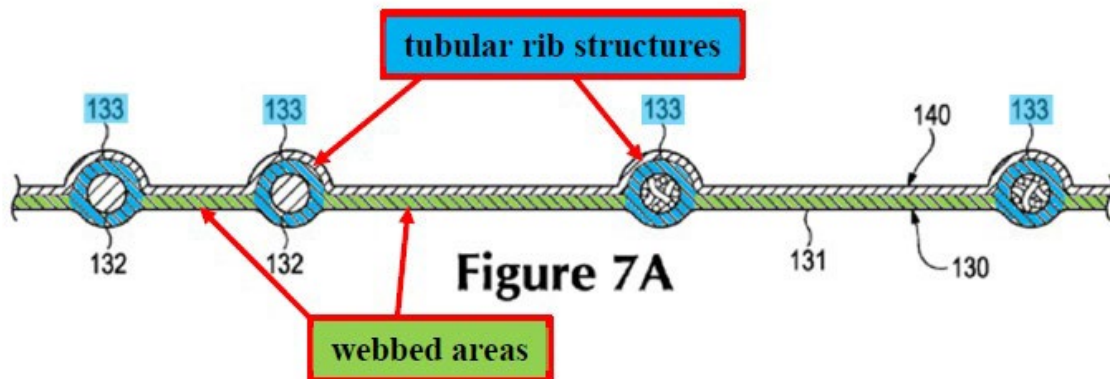
E. Ground 3

lululemon contends that claims 8, 9, 14, 15, and 19 are anticipated by Minami and, alternatively, that dependent claims 9 and 15 are rendered obvious by Minami. *See* Pet. 58–74. Nike responds with two arguments, *first*, that Minami’s tubular structures lack “the first curve length being greater than the second curve length,” as required by independent claim 8, and, *second*, that Minami lacks “webbed areas configured to move between a neutral position and an extended position,” as also required by claim 8. Prelim. Resp. 26–31.

1. “the first curve length being greater than the second curve length”

At the outset, we note that Nike does not dispute that Minami discloses tubular rib structures separated by webbed areas, as required by claim 8. *See* Prelim. Resp. 27. Thus, we need not determine at this time whether the claimed “tubular rib structures” must be hollow from a claim construction perspective.

Rather, Nike argues that lululemon fails to show that Minami's tubular rib structures include front and back curved portions of different lengths, as required by claim 8. We disagree. lululemon provides annotated Figure 7A of Minami, reproduced below, as proof that Minami's tubular rib structures 133 (blue) meet this claim limitation. *See* Pet. 62–66.



As shown above, each of Minami's tubular rib structures 133 (blue) includes two curved portions, a first curved portion extending from the top surface of webbed area 131 (green) and a second curved portion extending from the bottom surface of webbed area 131. Ex. 1007 ¶¶ 61–63, Figs. 7A–7C, 8A, 11A. Simply looking at the figure itself, one sees that the length of the top curved portion is clearly greater than the length of bottom curved portion, as evidenced by the fact that the top curved portion protrudes a greater distance outward from the webbed area than the bottom curved portion. Moreover, as Minami explains, the tubular protrusion on the outer surface permits “enhanced control of a soccer ball” (*id.* ¶ 62), which reasonably informs one skilled in the art as to why Minami depicts the tube's top curved portion protruding outward from the webbed area to a greater extent than the tube's bottom curved portion.

Nike contends that, “as a matter of law, it is improper to rely on patent figures for the precise proportions of certain elements.” Prelim. Resp. 28 (citing *Hockerson-Halberstadt, Inc. v. Avia Group Int’l*, 222 F.3d 951, 956 (Fed. Cir. 2000)). Although we appreciate that Minami does not specify its figures as being drawn to scale, and, thus, cannot be relied upon for precise measurements, that does “not mean that things patent drawings show clearly are to be *disregarded*.” *In re Mraz*, 455 F.2d 1069, 1072 (CCPA 1972). Instead, patent drawings are useful for all they reasonably teach to one skilled in the art. *See In re Aslanian*, 590 F.2d 911, 914 (CCPA 1979); *see also Mraz*, 455 F.2d at 1072 (“Description for the purposes of anticipation can be by drawings alone as well as by words.” (citation omitted)).

With that in mind, we do not find *Halberstadt* as particularly helpful here. That case stands for the proposition that it is error to rely on patent drawings for “*precise proportions*” or “*particular sizes*” of elements “if the specification is completely silent” as to such proportions or sizes. *Halberstadt*, 222 F.3d at 956. Fittingly, then, “[a]bsent any written description in the specification of *quantitative* values, arguments based on *measurement* of a drawing are of little value.” *Id.* (citing *In re Wright*, 569 F.2d 1124, 1127 CCPA 1977) (emphasis added)).

In contrast, the circumstances here are more akin to those in *Mraz*, where the figure in the prior art reference “focus[ed] on the edge rolls, showing them with great particularity and showing the grooves thereon to have an *angularity* well within the range recited in appellant’s claims.” *Mraz*, 455 F.2d at 1072 (emphasis added). Similarly, in *Aslanian*, the prior art’s figures alone were found to anticipate “a longitudinally convex portion . . . having a *height* approximately corresponding to said first convex

portion.” *Aslanian*, 590 F.2d at 912, 915 (emphasis added). Those cases effectively stand for the proposition that patent drawings may be relied on for features clearly shown in the drawings that do not require a determination of *precise* proportions or *particular* sizes of elements.

Here, the disputed claim limitation merely entails a comparison of one curved portion relative to another curved portion: “the first curve length being greater than the second curve length.” Ex. 1001, 33:54–55. A simple observation of Minami’s figures clearly reveals to one skilled in the art that the tube’s curve length extending from the top surface of the webbed area is greater than the tube’s curve length extending from the bottom surface of the webbed area. That determination is not the result of *quantitative* measurements to determine *precise* proportions or *particular* sizes. Rather, it results from what Minami’s figures clearly show to one skilled in the art comparing the extent of the tube’s top relative to the tube’s bottom, and assessing merely whether one is longer than the other. Thus, we reject the notion that Minami’s figures alone cannot be relied upon to anticipate the relative “curve length” limitation of claim 8.

2. “*webbed areas configured to move between a neutral position and an extended position*”

As lululemon correctly notes, Minami expressly contemplates that knit element 131, which indisputably corresponds to the claimed “webbed area,” is designed to “stretch,” or, in the words of claim 8, move between a neutral and position. Pet. 66–68 (citing Ex. 1007 ¶¶ 48–49, 52, Fig. 7A); *see also* Ex. 1003 ¶¶ 135–136 (lululemon’s expert explaining as much). Indeed, Minami states elsewhere that “inlaid strand 132 may *stretch* less than knit element 131,” which necessarily means that Minami’s webbed area 131

stretches to a greater degree than the tubular parts of the shoe containing inlaid strand 132. *Id.* at ¶ 52. Thus, the webbed area of Minami’s shoe is designed to stretch, regardless of whether inlaid strands 132 function to limit the amount of stretching by Minami’s tubular structures. *See Prelim. Resp.* 29–30.⁶

3. Conclusion

In sum, we conclude that lululemon demonstrates a reasonable likelihood that independent claim 8 is unpatentable as anticipated by Minami. lululemon also challenges dependent claims 9, 14, 15, and 19, pointing to content within Minami that satisfies each of the dependent limitations. *Pet.* 68–74. Nike offers no additional response to lululemon’s challenge of these dependent claims, except to rely on its argument against lululemon’s challenge of base claim 8. *See Prelim. Resp.* 31. On the current record, we find persuasive lululemon’s showing as to how Minami meets these dependent claims. Thus, we conclude that lululemon demonstrates a reasonable likelihood of proving that dependent claims 9, 14, 15, and 19 are unpatentable as anticipated by Minami and/or obvious over Minami.

III. CONCLUSION

Because lululemon meets the “reasonable likelihood” threshold for institution under 35 U.S.C. § 314(a), we institute an *inter partes* review of all claims as challenged in the petition. *See PGS Geophysical AS v. Iancu*,

⁶ We also reject the notion that Minami’s webbed areas are “configured *not to stretch*” due to Minami’s disclosure of a stretch-inhibiting “skin layer.” *Prelim. Resp.* 30 (citing *Ex. 1007* ¶ 44). That is because Minami expressly discloses that skin layer 140 is optional. *See Ex. 1007* ¶ 54.

891 F.3d 1354, 1360 (Fed. Cir. 2018) (“Equal treatment of claims and grounds for institution purposes has pervasive support in *SAS*.”).

IV. ORDER

Accordingly, it is:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–3, 7–9, and 14–20 of the ’046 patent is *instituted*; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the ’046 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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