

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*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

Nike, Inc. (“Nike”) is the owner of U.S. Patent No. 9,375,046 B2 (Ex. 1001, “the ’046 patent”). lululemon usa inc. (“lululemon”) filed a petition for an *inter partes* review of claims 1–3, 7–9, and 14–20 of the ’046 patent. Paper 1 (“Pet.”). We instituted *inter partes* review of all the claims as challenged in the petition. Paper 7 (“Inst. Dec.”). Nike, in due course, filed a patent owner response to the petition. Paper 11 (“PO Resp.”). lululemon followed with a reply. Paper 15 (“Pet. Reply”). And Nike followed with a sur-reply. Paper 16 (“PO Sur-Reply”).

We have jurisdiction over this *inter partes* review under 35 U.S.C. § 6. We held an oral hearing on April 3, 2025, a transcript of which is in the record. Paper 29 (“Hrg. Tr.”). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons below, we determine that lululemon has shown, by a preponderance of the evidence, that challenged claims 8, 9, 14, 15, and 19 are unpatentable, but has not shown that claims 1–3, 7, 16–18, and 20 are unpatentable.

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. On March 24, 2025, the district court in that case entered final judgment, pursuant to a jury verdict, that independent claims 1, 8, and 16 of the ’046 patent are neither infringed nor invalid. *See* Ex. 3001 ¶¶ 2, 4.

The ’046 patent was also the subject of another district court action, *Nike, Inc. v. Puma North America, Inc.*, No. 1:18-cv-10876 (D. Mass.), which was dismissed due to settlement. *See* Pet. 1. And the ’046 patent was

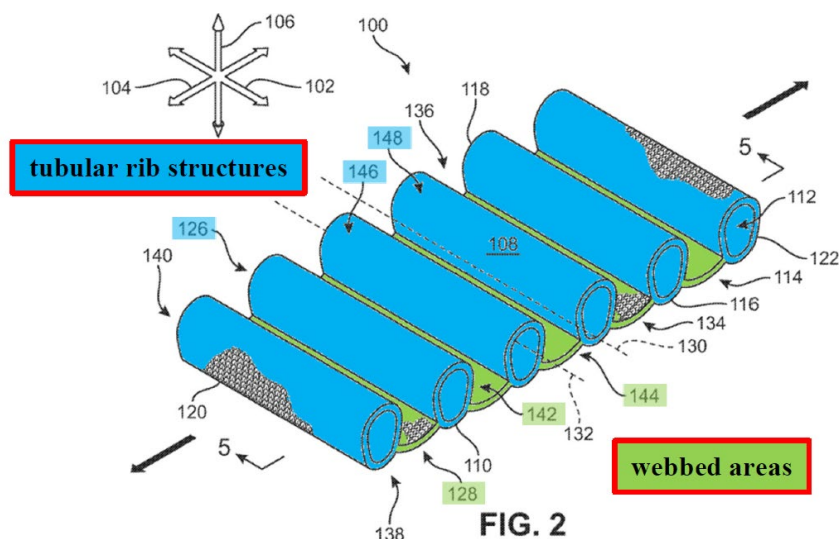
the subject of a prior petition for *inter partes* review in IPR2019-01059, which was terminated due to settlement prior to institution. *See id.*

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” and “provide 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

Grounds	Claims Challenged	35 U.S.C. §	Basis
1	1–3, 7, 16–18, 20	102/103	Good ¹
2	1–3, 7, 17, 18, 20	102	Munsing ²
3	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. 2006.

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”).

D. Challenged Claims

Of the challenged claims, claims 1, 8, and 20 are independent. Claim 1, reproduced below, is illustrative of the claims challenged in Grounds 1 and 2, while claim 8, also reproduced below, is illustrative of the claims challenged in Ground 3:

1. An article comprising:

a plurality of webbed areas that include a plurality of courses formed from a first yarn, the webbed areas having a front surface, 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

a plurality of tubular structures that are adjacent to the webbed areas, the tubular structures including a plurality of courses;

wherein at least one of the webbed areas or tubular structures is configured to stretch to move the webbed areas to the extended position in response to a force applied to the article

wherein in the neutral position, a first area of the front surface is hidden from visual observation from a first viewing perspective, and

wherein in the extended position, the first area of the front surface is revealed for visual observation from the first viewing perspective.

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

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, 32:40–59; 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* PO Resp. 14 (“For purposes of this proceeding, Nike applies lululemon’s proposed level of skill in the art.”).

We find that lululemon’s proposed definition is consistent with the problems and solutions described in the ’046 patent and the prior art of record. Thus, 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). Central to this proceeding is the construction of “tubular structures” and “tubular rib structures,” as recited in

independent claims 1, 8, and 20.⁴ In our Institution Decision, we construed “tubular structure” as “at least having a closed periphery or circumference.” Inst. Dec. 8. We did so because the specification of the ’046 patent repeatedly and consistently refers to the tubular structure as comprising “two co-extensive and overlapping knit layers that are *closed* to form the tube.” *See id.* (citing Ex. 1001, 4:58–61, 10:20–32, 17:43–46, 20:3–5).

Indeed, each and every embodiment of the ’046 patent is shown and described as including tubular structures constructed of at least two co-extensive and overlapping knit layers in the form of a *hollow tube*. For example, in conjunction with Figure 1–3, the ’046 patent describes the formation of the tubular structure as follows:

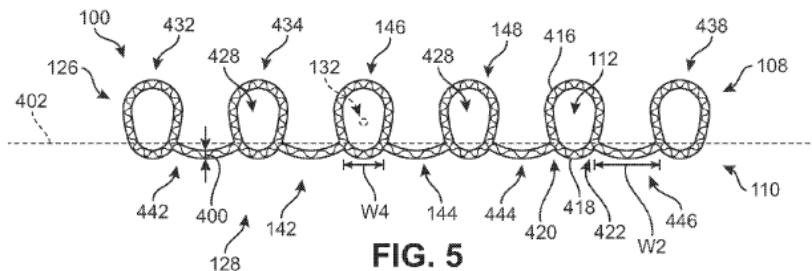
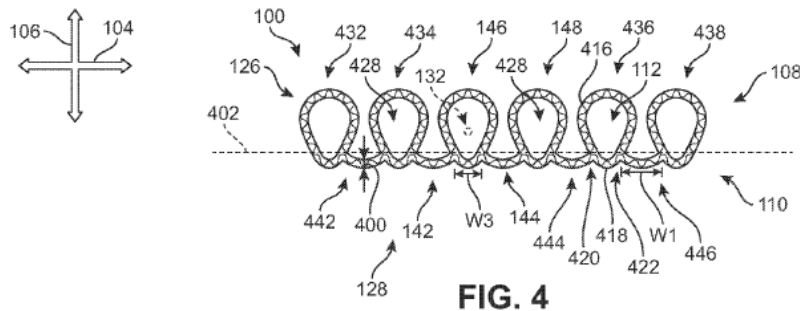
Generally, tubular rib structures 126 can be areas of knitted component 100 constructed with two or more co-extensive and overlapping knit layers. . . . Two or more knit layers may be formed of unitary knit construction in such a manner so as to form tubes or tunnels, identified as tubular rib structures 126, in knitted component 100. Although the sides or edges of the knit layers forming tubular rib structures 126 may be secured to the other layer, a central area is generally unsecured to form a hollow between the two layers of knitted material forming each knit layer. In 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.

Ex. 1001, 7:14–30 (emphases added).

⁴ The parties agree that “tubular rib structures,” as recited in claim 8, has the same meaning as “tubular structures,” as recited in claims 1 and 20. *See* PO Resp. 2 n.1; Pet. Reply 5 n.2. As such, we reference only the term “tubular structure.”

Similarly, in conjunction with Figures 4 and 5, reproduced below, the '046 patent describes the two knit layers in terms of first and second curved portions 416 and 418 that are knit together to form a “tunnel” or “tube” shape 126—

First tubular structure 146 can have *a tube shape* in some embodiments. When viewed in cross-section, as shown in FIGS. 4 and 5, tubular rib structures 126 can include a first curved portion 416 and a second curved portion 418. In an exemplary embodiment, first curved portion 416 is disposed opposite of second curved portion 418 on the respective top and bottom of tubular rib structures 126. *In some embodiments, first curved portion 416 and second curved portion 418 may be knitted together to define the tube forming tubular rib structure 126. In the embodiment of FIGS. 4 and 5, first curved portion 416 and second curved portion 418 meet along a first transition 420 edge and also along a second transition 422 edge, forming a tunnel or tube shape.*



Id. at 10:19–32 (emphases added).

And, finally, in conjunction with Figure 8, reproduced below, the '046 patent describes how the tubular structure depicted in Figures 1–7 is made

from a two-dimensional flat configuration into a three-dimensional tubular configuration—

In an exemplary embodiment, *during the knitting process, 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.* For example, as shown in FIG. 8, a first portion 850 of one tubular course 804 forming tubular rib structure 126 may be joined by knitting to an attachment portion 852 of one web course 806. First portion 850 and attachment portion 852 may be joined by knitting with yarn across both of the front bed and back bed of the knitting machine to interloop portions of each of tubular course 804 and web course 806. *With this arrangement, tubular rib structure 126 may move from a substantially flattened, two-dimensional configuration to a raised, three-dimensional configuration, as shown in FIGS. 1 through 7.*

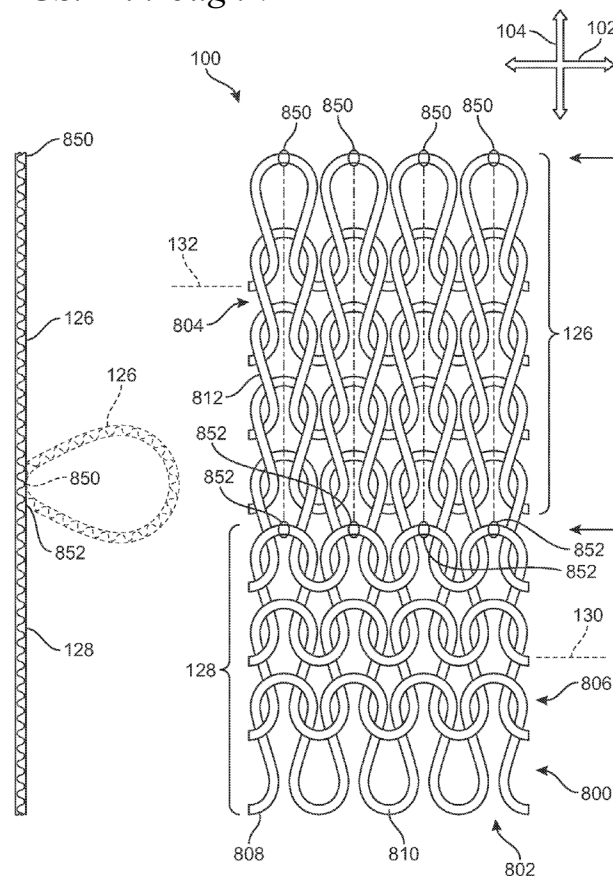


FIG. 8

Id. at 17:43–56 (emphases added); *see also 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)).

Despite those repeated disclosures in the ’046 patent of closing and joining together the overlapping knit layers so to form a hollow tube, lululemon argues that our Institution Decision erred in construing “tubular structure” as requiring “a closed periphery or circumference.” *See* Pet. Reply 2–11. According to lululemon, “[t]he record does not support limiting ‘tubular structures’ to require a closed periphery or circumference” because “[t]he ’046 patent explicitly discloses that ‘tubular structures’ include *open-periphery configurations such as channels*, contradicting any requirement that these structures be closed loop.” *Id.* at 3, 5. In support, lululemon points to a passage in the ’046 patent that uses the term “channel” in describing the tubular structure—

In different embodiments, tubular rib structures 126 can define one or more hollow tubes. A hollow tube 112 may be a generally unsecured area disposed between first curved portion 416 and second curved portion 418 of tubular rib structure that has the configuration of a tunnel *or channel*.

Ex. 1001, 10:66–11:3 (emphasis added).

We are not persuaded by lululemon’s attempt to equate the term “channel” in that passage with an open-periphery configuration. Nowhere does that passage indicate that the “channel” has an open-periphery. Instead, lululemon merely presumes, without support, that channels are open-periphery structures. More accurately, the terms “tunnel” and “channel” in the passage cited by lululemon are used synonymously. That is made clear by the overall context of the ’046 patent at issue, which is directed to how

tubular rib structures 126 are formed by “first” and “second” curved portions 416 and 418 that are “*knitted together*” to define “hollow tube 112.” *See* Ex. 1001, 10:16–11:14, Figs. 4, 5 (emphasis added). In particular, the sentence cited by lululemon describes hollow tube 112 as being “disposed between” first and second curved portions 416 and 418, which Figures 4 and 5 of the ’046 patent clearly depict in a closed-periphery configuration. *See id.* at 10:66–11:3, Figs. 4, 5. Moreover, the very next sentence expressly describes that hollow tube 112 has “a generally *cylindrical* or *elliptical* shape” wherein “[t]he *diameter* of one hollow tube and the diameter of other hollow tubes may differ in some embodiments.” *Id.* at 11:3–14 (emphases added). We are not aware of any open-periphery channels being described as having a cylindrical or elliptical shape, nor are we aware of such a channel being described as having a diameter. Thus, lululemon’s proposed claim construction ignores the context surrounding the ’046 patent’s description of the tubular rib structures when it describes them as having the configuration of a tunnel or channel.

Elsewhere, the ’046 patent likewise describes hollow tubular rib structures 126 in terms of having a “cylindrical,” “circular,” or “elliptical” shape, all of which indisputably are of closed-periphery configuration —

[T]he shape and dimensions of tubular rib structures 126 can vary across knitted component 100. In some embodiments, tubular rib structures 126 can generally be shaped as a *cylinder*. In an exemplary embodiment, tubular rib structures 126 may have an *elongated cylindrical shape* with a wider top portion associated with front surface 108 and a narrower lower portion associated with back surface 110. In other embodiments, tubular rib structures 126 can be shaped as a generally *circular or elliptical cylinder*.

Id. at 7:35–44 (emphases added).

So, throughout, the '046 patent repeatedly refers to the tubular structures as being a hollow tube or as having a cylindrical or elliptical shape. Indeed, *in its Petition*, lululemon agrees that the term “tubular structure” should be construed as having the shape of a hollow tube—

Petitioner submits that “tubular structure” *must have the shape of a tube*. Thus, “tubular structures” should be construed as “elongated hollow structures.”

Pet. 15 (emphasis added). That construction in lululemon’s Petition coincides directly with lululemon’s construction of the same term in the parallel district court action, where it advocated that “[b]oth the ordinary meaning and the specification compel the conclusion that the claimed ‘tubular structures’ have the shape of tubes, namely elongated hollow structures.” Ex. 2003, at 3. In support, lululemon noted the dictionary definitions of “tubular” as “like a tube” and “tube” as “*a hollow cylinder*.” *Id.* (emphasis added). lululemon’s expert takes a similar approach here—

In my opinion, a “tubular structure” must have the shape of a tube, and thus the proper plain and ordinary meaning is “elongated hollow structures.” Such a meaning is consistent with the claim language and the '046 patent’s specification. . . . *The term “tubular” therefore refers to a specific type of rib and makes clear that the tubular structure is not a non-tubular rib.* In addition, the '046 patent generally provides that “tubular rib structures 126 can be areas of knitted component 100 constructed with two or more co-extensive and overlapping knit layers . . . [which] may be formed of unitary knit construction in such a manner *so as to form tubes or tunnels, identified as tubular rib structures 126* . . . a central area is generally unsecured to form a hollow between the two layers of knitted material forming each knit layer.”

Ex. 1003 ¶¶ 39–40 (emphases added) (quoting Ex. 1001, 7:14–30).

Only after our Institution Decision did lululemon revert to arguing that tubular structure “does not require all properties of an actual tube” and should have “a broad scope” that “include[s] open-periphery configurations such as channels,” in other words, something more than the hollow tube configuration it originally advocated for in its Petition.⁵ *See* Pet. Reply 5. We reject lululemon’s belated attempt to do so. Not only is lululemon’s newly proposed construction inconsistent with the position it took in its Petition and before the district court, but it also lacks support in the intrinsic record. As discussed above, nowhere does the ’046 patent describe or otherwise suggest that the tubular structure has an open-periphery. Instead, the intrinsic record, i.e., the specification of the ’046 patent, repeatedly describes the tubular structure in terms of being constructed of “two co-extensive and *overlapping* knit layers” that include “a central area that is generally unsecured *to form a hollow* between the two knit layers” and “in such a manner so as *to form tubes or tunnels*.” Ex. 1001, 2:23–26, 7:14–25 (emphases added); *see also id.* at 4:56–61 (describing “co-extensive and overlapping knit layers” as being “closed to form the tube”). Those disclosures necessarily indicate a closed-periphery configuration. Indeed, it is difficult to fathom that a hollow tube would have any other configuration.

Moreover, any other configuration would diminish the very function of the hollow tubular structures, wherein the ’046 patent describes the “hollow tubes” as “provid[ing] strength and/or support to knitted component

⁵ Apparently, lululemon realized it could no longer stand by its original construction of tubular structure because, in our Institution Decision, we rejected one of its grounds—the Good-based ground—as lacking the closed-periphery configuration of a hollow tube. *See* Inst. Dec. 8–10.

[100].” Ex. 1001, 4:56–58. Nowhere does lululemon explain how a tubular structure in the form of an open-periphery channel would provide any different strength or support than the adjacent webbed areas, which already form open-periphery channels between the hollow tubes, as distinctly shown in Figures 4 and 5 of the ’046 patent. In other words, per lululemon’s construction, knitted component 100 could comprise nothing more than a series of open-periphery channels where the support and stretching characteristics of the webbed areas would be no different than those of the tubular areas. We do not think that was the intent of the tubular structures as described and claimed in the ’046 patent.

lululemon additionally posits a “claim differentiation” argument based on two dependent claims—claims 10 and 11—in U.S. Patent No. 10,273,604 (“the ’604 patent”), a grandchild of the ’046 patent.⁶ See Pet. Reply 7–9 (referencing Ex. 1018). We do not find that argument persuasive.

lululemon shoehorns the claim language from those dependent in an effort to suggest that claim 10 specifies an open-periphery structure whereas claim 11 more narrowly specifies a closed periphery structure. *Id.* at 8–9. More accurately, however, claim 10 is simply directed to how the first and second curved portions “are attached together to define a tube” (Ex. 1018, 34:38–41), while claim 11 is more narrowly directed to the *location* of attachment, i.e., “at the first edge and the second edge” (*id.* at 34:42–44). In either case, both claims are specifying the same structure—“a tube”—which indisputably has a closed periphery. Indeed, during the hearing, lululemon confirmed that “a tube must have a closed periphery” because dictionary

⁶ The parties agree these two patents share the same specification. See Hrg. Tr. 15:22–23; 39:22–23.

definitions “consistently” define it as “a hollow cylinder, hollow cylinder, hollow cylinder.” Hrg. Tr. 19:21–20:2; *see also id.* at 29:26–30:5 (Nike agreeing). Moreover, claim differentiation cannot be used to overshadow the common specification of these two patents, which, as discussed earlier, clearly indicates that a “tube,” per claims 10 and 11 of the ’604 patent, is a closed periphery structure.

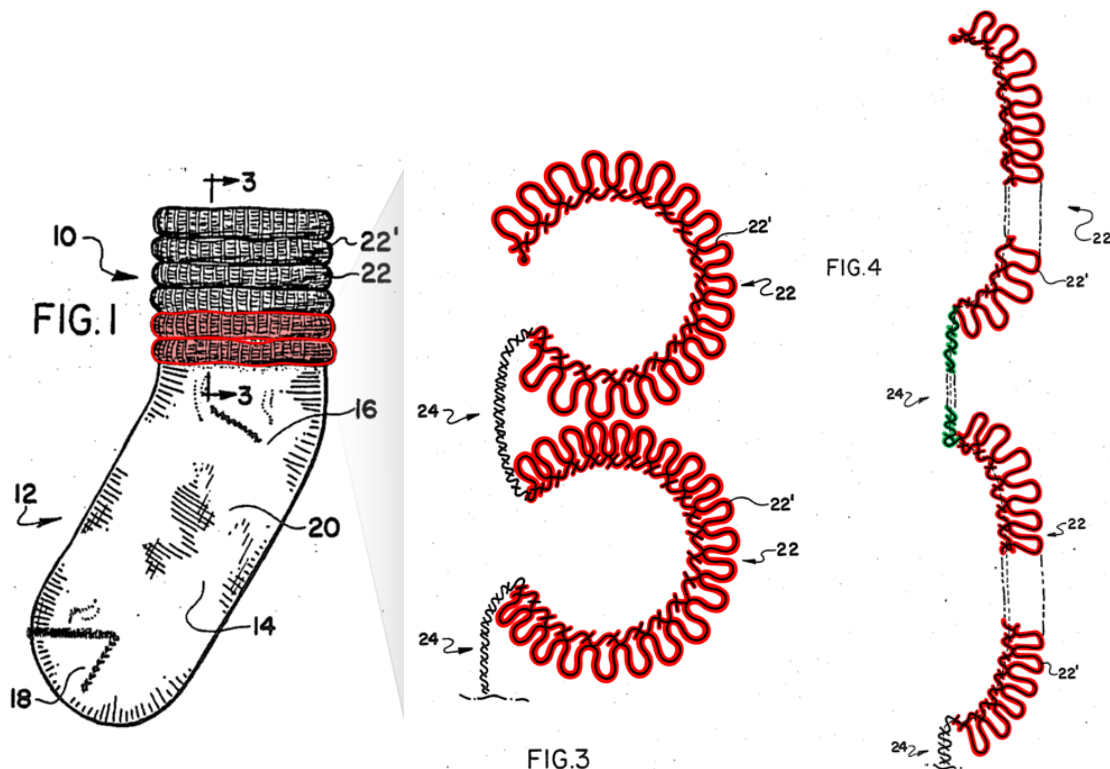
In sum, we find that the intrinsic record does not support lululemon’s belated attempt to construe the claimed “tubular structure” as including “an open-periphery channel.” Pet. Reply 2–11. Rather, lululemon had it right in its Petition and the parallel district court action, where it argued for a narrower construction that limited “tubular structure” to “an elongated hollow structure” that “must have the shape of a tube.” Pet. 15. In fact, as lululemon notes in its Petition, that construction finds support in the very evidence that we cite today as supporting our construction of “tubular structure.” *See* Pet. 16 (citing Ex. 1001, 4:55–61, 7:14–30; Ex. 1003 ¶ 40). Thus, we maintain the construction of “tubular structure” as set forth in our Institution Decision, namely, a construction that necessarily presumes a “closed periphery or circumference” for the co-extensive and overlapping knit layers forming the hollow tube. *See* Inst. Dec. 8.

lululemon identifies three additional claim terms for construction—“neutral position,” “extended position,” and “unitary knit construction.” Pet. 14–17. In our Institution Decision, we adopted and applied the parties’ agreed-upon construction of those three terms from the parallel SDNY action. *See* Inst. Dec. 6 (citing Ex. 1014, 11). Neither party has objected to our constructions in that regard, so we maintain them for purposes of this final decision.

C. Ground 1

lululemon challenges claims 1–3, 7, 16–18, and 20 as being anticipated by Good, and, alternatively, challenges claim 3 as obvious over Good. *See* Pet. 19–43. Nike responds that Good lacks the “tubular structures” of independent claims 1 and 20. *See* PO Resp. 18–22.

We agree with Nike, given our construction of the claimed “tubular structures.” As shown in annotated Figures 1, 3, and 4 of Good (reproduced below), Good discloses a sock 12 having rib portions 22 (red) and webbed areas 24 (green). *See* PO Resp. 19. lululemon contends that Good’s rib portions 22 meet the claimed “tubular structures” because each rib portion 22 “roll[s] substantially together in the relaxed condition” and “has the shape of a tube, namely an elongate hollow structure.” Pet. 29–30. In support, lululemon points to Good’s Figure 3 (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 (red) shown in Good’s Figure 1. But, as Nike correctly notes, Good’s rib portions 22 are “C-shaped knitted portions,” which when stretched, go from an essentially C-shaped configuration (Figure 3) to a relatively flat, linear configuration (Figure 4). PO Resp. 19–20 (citing Ex. 2006 ¶¶ 48–49). Nowhere does Good disclose that the ends of C-shaped rib portions 22 ever meet and remain in a *closed periphery* configuration to form a hollow tube per our construction of “tubular structures” (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.”⁷ Thus, we find that Good does not disclose or otherwise suggest the claimed “tubular structures,” as properly construed, meaning that lululemon fails to demonstrate, by a preponderance of the evidence, that Good either anticipates claims 1–3, 7, 16–18, and 20, or, alternatively, renders obvious claim 3.

D. Ground 2

lululemon challenges claims 1–3, 7, 17, 18, and 20 as being 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 PO Resp. 24–27. We agree.

⁷ 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-shaped rib are “substantially together,” as stated in Good, they nonetheless are not “closed” to form a “hollow tube” as required by our construction of “tubular structure.”

In our Institution Decision, we said that Munsing lacks the claimed “tubular structures” because “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.” Inst. Dec. 10–12. During the trial phase, lululemon’s expert likewise agreed, conceding (on cross-examination) that Munsing only discloses *non*-tubular structures. *See* Ex. 2007, 40:9–41:11 (“Q [by Patent Owner’s counsel]: So you agree that . . . Munsing only discloses a nontubular rib? A [by lululemon’s expert]: That’s what I said.”).

Nowhere does lululemon rebut that admission by its own expert, despite Nike noting it explicitly as a reason for rejecting Ground 2. *Compare* PO Resp. 25–26 (noting the admission of lululemon’s expert), *with* Pet. Reply 1–26 (addressing only Grounds 1 and 3, while omitting any mention of Ground 2, which is based on Munsing). Nor does lululemon ever dispute the preliminary findings in our Institution Decision as to why Munsing is not an anticipatory reference. *Compare* Inst. Dec. 10–12, *with* Pet. Reply 1–22. Thus, lululemon fails to demonstrate, by a preponderance of the evidence, that Munsing anticipates challenged claims 1–3, 7, 17, 18, and 20.

E. Ground 3

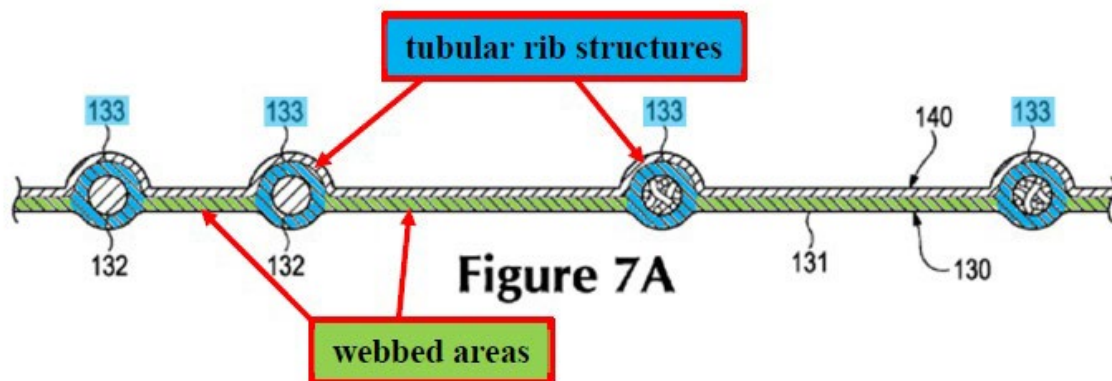
lululemon challenges claims 8, 9, 14, 15, and 19 as anticipated by Minami, and, alternatively, challenges claims 9 and 15 as obvious over Minami. *See* Pet. 58–74. Of these claims, the parties limit their arguments to independent claim 8 and two of its recited limitations. The gravamen of the parties’ dispute centers, *first*, on whether Minami’s tubular rib structures include “a first curved portion” having a “first curve length being greater than the second curve length” of “a second curved portion,” as required by

claim 8; and, *second*, on whether Minami discloses “webbed areas configured to move between a neutral position and an extended position,” as also required by claim 8. *See* PO Resp. 31; Pet. Reply 16, 22.

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

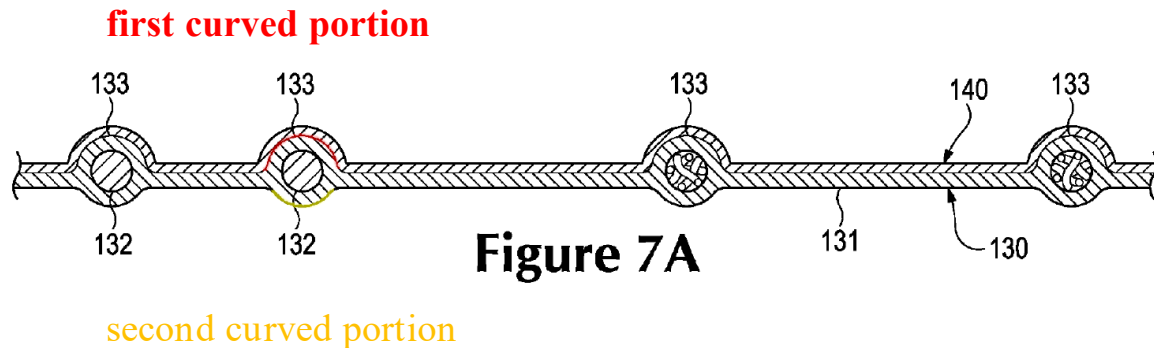
At the outset, we note that Nike does not dispute Minami’s disclosure of claim 8’s requirement of an “upper” comprising “a plurality of tubular rib structures” separated by “a plurality of webbed areas.” *See* PO Resp. 32–34 (arguing only “curve length” limitation of claim 8). Rather, Nike faults lululemon for failing to show that Minami’s tubular rib structures have first and second curved portions of different curve lengths, as required by claim 8. We disagree.

lululemon provides annotated Figure 7A of Minami, reproduced below, to illustrate how Minami’s tubular rib structures have first and second curved portions of different curve lengths. *See* Pet. 62–66.



Annotated Figure 7A is a cross-sectional view of the knit layer forming the upper of the article of footwear depicted in Minami’s Figure 5. Ex. 1007 ¶ 17. The knit layer includes webbed areas 131 (green) and tubular rib structures 133 (blue). Notably, as shown in Figure 7A, each tubular rib structure 133 has a first curved portion protruding from the exterior (top)

surface of the knit layer and a second curved portion protruding from the interior (bottom) surface of the knit layer. *See id.* ¶¶ 51, 60–63, Figs. 7A–7C, 8A, 11A. lululemon provides another annotation of Figure 7A, reproduced below, to illustrate the first and second curved portions of Minami’s tubular rib structures. *See* Pet. Reply 18.



As lululemon correctly notes, a simple observation of Figure 7A reveals that the curve length of the top curved portion (red) of the tubular rib structure is clearly greater than the curve length of the bottom curved portion (yellow), especially given the fact that the top curved portion (red) protrudes a greater distance outward from the surface of webbed areas 131 than does the bottom curved portion (yellow). *See* Pet. 65 (citing Ex. 1003 ¶ 132); *see also* Pet. Reply 18. Moreover, as Minami itself explains, the tubular protrusion on the exterior (top) surface of the knit layer permits “enhanced control of a soccer ball” (Ex. 1007 ¶ 62), which reasonably would inform one skilled in the art as to why the top curved portion of Minami’s tubular rib structures protrude outward to a greater extent than bottom curved portion.

Nike responds that “lululemon’s reliance on the relative lengths shown in Figure 7A is improper.” PO Resp. 34 (citing *Hockerson-Halberstadt, Inc. v. Avia Group Int’l*, 222 F.3d 951, 956 (Fed. Cir. 2000)).

According to Nike, “the Federal Circuit has consistently found reversible error where courts attempt to ‘read[] precise proportions into patent drawings which do not expressly provide such proportions.’” *Id.* at 35 (citing *Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1149 (Fed. Cir. 2005); *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1351 (Fed. Cir. 2013)). In particular, Nike contends that lululemon’s reliance on Figure 7A to show relative lengths of Minami’s two curved portions is undermined by the holding in *Plantronics* “that a district court erred by relying on patent drawings as evidence that a particular element was ‘elongated.’” *Id.*; *see also id.* at 36 (same).

Nike misinterprets *Plantronics*, which involved the issue of construing a claim term with reference to the patent’s figure. More accurately, that case held that a patent’s figures cannot be used to import an “elongated” limitation into the claims where the figures “do not evidence *actual dimensions*” of the claimed apparatus. *Plantronics*, 724 F.3d at 1351 (emphasis added). In other words, *Plantronics* stands for the unremarkable proposition that one cannot attribute a dimensional characteristic to a claimed apparatus where neither the claims nor the figures indicate any actual dimensions. Indeed, *Plantronics* merely follows the well-established precedent of *Hockerson-Halberstadt*, which also centered on the issue of construing a claim term in light of the patent’s figures. *See Hockerson-Halberstadt*, 222 F.3d at 954–956. There, the Federal Circuit rejected a broader claim construction that “hinge[d] on an inference drawn from certain figures about the quantitative relationship between the respective widths of the groove and fins” because it was contrary to well-established precedent that “patent drawings do not define *precise* proportions of the

elements and may not be relied on to show *particular* sizes if the specification is completely silent on the issue.” *See id.* at 956 (emphases added).

Here, however, lululemon is not attempting to ascribe an actual dimension or particular size to Minami’s tubular structure or curved portions. Rather, lululemon is simply relying on a visual comparison of the relative lengths of two curves in Figure 7A—a qualitative relationship that does not require precise sizing or actual dimensions, as was required in the case of the figures in *Hockerson-Halberstadt* and *Plantronics*. Although we appreciate Minami’s statement that “the figures are not necessarily to scale” (Ex. 1007 ¶ 10), that disclaimer does “not mean that things patent drawings show clearly are to be *disregarded*.” *In re Mraz*, 455 F.2d 1069, 1072 (CCPA 1972). Instead, “[d]escription for the purposes of anticipation can be by drawings alone as well as by words.” *Id.* (citation omitted). Indeed, patent drawings are useful for all they reasonably convey to one skilled in the art. *See In re Aslanian*, 590 F.2d 911, 914 (CCPA 1979).

We find that the facts presented here are more akin to those in *Mraz*, where the figure in the prior art “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 figures in the prior art 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* sizes or *actual* dimensions.

Because the claim limitation at issue here merely entails a visual comparison of one curved portion relative to another curved portion—“the first curve length being greater than the second curve length”—one skilled in the art need only observe Minami’s figures to determine the extent of the tubular structure’s top (exterior) curve length relative to its bottom (interior) curve length, and see if one is longer than the other. That determination does not result from *precise* sizes or *actual* dimensions. Rather, it results from observable information about the relative curve lengths of the top and bottom curved portions of the tubular structure shown in Minami’s Figure 7A. 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*”

Next, Nike argues that Minami does not disclose claim 8’s requirement that the webbed areas be “configured to move between a neutral position and an extended position.” *See* PO Resp. 37–40. First, Nike asserts that Minami’s webbed areas are “expressly configured *not to stretch*” because Minami discloses a “skin layer” that “inhibit[s] stretch.” *Id.* at 38 (citing Ex. 1007 ¶ 44).

As we noted in our Institution Decision, however, Minami explicitly discloses that the skin layer is optional, which directly undermines Nike’s assertion. *See* Inst. Dec. 16 n.6 (citing Ex. 1007 ¶ 54). More specifically, Minami explains that “skin layer 140 *may be absent* from other areas of upper 120” and “the presence of protruding areas 133 *when skin layer 140 is*

absent may impart additional thickness or loft to upper 120, *while also varying the stretch properties of upper 120.*” Ex. 1007 ¶¶ 43, 54 (emphases added). Together, those express disclosures confirm that the webbed areas of Minami’s upper clearly are designed to stretch in the absence of the skin layer. And, despite our preliminary finding to that effect, Nike never addresses it. *See* PO Resp. 38–39; PO Sur-Reply 16–17.

Nike also points to Minami’s disclosure of “inlaid strands” as imparting “stretch resistance” to the upper. PO Resp 38. However, as shown in Minami’s Figures 3, 5, and 7A, inlaid strands 132 are incorporated only in tubular rib structures 133 of Minami’s upper 120. *See* Ex. 1007, ¶¶ 48, 49, 51–54, Figs. 3, 5, 7A. Consequently, the presence of inlaid strands 132 in Minami’s tubular rib structures 133 does not prevent stretching in other areas of the upper where there is no inlaid strand, such as webbed areas 131 between the tubular rib structures. Indeed, Minami expressly contemplates that knit element 131, which indisputably corresponds to the claimed “webbed area,” is configured to “stretch” from a neutral to an extended position. *See* Ex. 1007 ¶¶ 49, 52, 54, Figs. 3, 5, 7A; *see also* Ex. 1003 ¶¶ 135–136 (lululemon’s expert explaining as much).

For instance, Minami explains 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 tubular structure 133 containing inlaid strand 132. *Id.* ¶ 52, Fig. 7A. And, on cross-examination, Nike’s expert confirmed as much—“Q. [by lululemon’s counsel] So the knit element of the webbed portions stretches more than the inlaid strands; is that correct? A. [by Nike’s expert] That is correct.” Ex. 1019, 59:6–60:7. Thus, indisputably, webbed areas 131 of Minami’s upper are designed to stretch,

regardless of whether inlaid strands 132 function to limit the amount of stretching in tubular structures 133 of Minami's upper.⁸

3. Conclusion

In sum, we conclude that lululemon demonstrates, by a preponderance of the evidence, 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 those dependent limitations. *See* Pet. 68–74. Nike offers no rebuttal to lululemon's showing for those dependent claims, except presumably to rely on its arguments in support of base claim 8. *See* PO Resp. 31–40 (focusing arguments solely on independent claim 8). After reviewing lululemon's showing, we find that lululemon demonstrates, by a preponderance of the evidence, that dependent claims 9, 14, 15, and 19 are unpatentable as anticipated by Minami and that claims 9 and 15 are unpatentable as obvious over Minami.

III. CONCLUSION

After considering the evidence and arguments, we conclude that lululemon establishes, by a preponderance of the evidence, that challenged claims 8, 9, 14, 15, and 19 are unpatentable, but fails to establish that

⁸ We also reject the notion that Minami's webbed areas are not configured to stretch between "two distinct configurations: the 'neutral position' and the 'extended position.'" PO Resp. 39. According to Nike, Minami does not disclose "any 'extended position' into which [Minami's webbed areas] move." *Id.* at 40. That argument fails for the simple reason that the claimed "extended position" is merely the natural result of stretching from a neutral position. To the extent Nike contends that the claimed "extended position" is something more than simply a stretched position, Nike improperly imposes a requirement not found in claim 8 (or the specification of the challenged '046 patent).

claims 1–3, 7, 16–18, and 20 are unpatentable. In particular, we resolve the asserted grounds as follows:

Claims Challenged	35 U.S.C. §	Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–3, 7, 16–18, 20	102, 103	Good		1–3, 7, 16–18, 20
1–3, 7, 17, 18, 20	102	Munsing		1–3, 7, 17, 18, 20
8, 9, 14, 15, 19	102, 103	Minami	8, 9, 14, 15, 19	
Overall Outcome			8, 9, 14, 15, 19	1–3, 7, 16–18, 20

IV. ORDER

Accordingly, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 318(a), claims 8, 9, 14, 15, and 19 of the '046 patent have been shown to be *unpatentable*;

FURTHER ORDERED that claims 1–3, 7, 16–18, and 20 of the '046 patent have *not* been shown to be unpatentable; and

FURTHER ORDERED that a party seeking judicial review of this decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.⁹

⁹ Should Nike wish to pursue amendment of any of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Nike's attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). We remind Nike of its continuing obligation to notify the Board of any such related matters in an updated mandatory notice. See 37 C.F.R. § 42.8(a)(3), (b)(2).

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