need. A38. Second, in finding that the Schuessler references taught the manufacture of a knitted helmet without requiring cutting, the Board implicitly found that reducing waste was not a long-felt but unresolved need, as the Schuessler references solved the problem by eliminating any cutting waste during the manufacturing process. A37.

V. CONCLUSION

For the foregoing reasons, the Board's decision should be affirmed.

Respectfully submitted,

April 9, 2015

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CERTIFICATE OF SERVICE

I hereby certify that on April 9, 2015, I electronically filed the foregoing BRIEF FOR INTERVENOR—DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE with the Court's CM/ECF filing system, which constitutes service, pursuant to Fed. R. App. P. 25(c)(2), Fed. Cir. R. 25(a), and the Court's Administrative Order Regarding Electronic Case Filing 6(A) (May 17, 2012).

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2014-1719

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

NIKE, INC.,

Appellant,

v.

ADIDAS AG,

Appellee.

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

APPELLEE'S OPENING BRIEF

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CERTIFICATE OF INTEREST

Counsel for adidas AG certifies the following:

1. The full name of every party represented by us is:

adidas AG

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by us is:

Same.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party represented by us are:

None

4. The names of all law firms and the partners or associates that appeared for the party now represented by me in the trial court or agency or are expected to appear in this court are:

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Dated: April 10, 2015

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Tiffany L. Williams

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STATEMENT OF RELATED CASES

Appellee adidas AG is not aware of any other appeal from this *inter partes* review of U.S. Patent No. 7,347,011 before this or any other appellate court.

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TABLE OF ABBREVIATIONS

Abbreviation	Explanation
adidas	Appellee adidas AG (Petitioner below)
Nike	Appellant Nike, Inc. (Patentee below)
Nike Appeal Br.	Opening Brief of Nike (Doc. No. 19)
IPR	*Inter partes* review
PTAB or Board	Patent Trial & Appeal Board, United States Patent & Trademark Office
POSITA	Person of Ordinary Skill In The Relevant Art At The Time Of The Invention
BRI	Broadest Reasonable Interpretation
Final Written Decision	April 28, 2014 PTAB Decision concluding that all challenged claims of the '011 patent are unpatentable under 35 U.S.C. § 103 (A0001-A0043)
The '011 patent	U.S. Patent No. 7,347,011 to Dua et al. (A0314-A0335)
Originally challenged claims	Issued Claim Nos. 1-46 of the '011 Patent
Proposed substitute claims or Proposed claims	Proposed Substitute Claim Nos. 47-50
Petition	December 10, 2012 Revised Petition for Inter Partes Review of U.S. Patent No. 7,347,011 (A1059-A1122)
Decision to Institute	May 17, 2013 PTAB Decision to institute this IPR (A1148-A1185)

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Motion to Amend	August 19, 2013 Patentee Nike's Motion to Amend (A1225-A1243)
Opposition	November 12, 2013 Petitioner adidas' Opposition to Nike's Motion to Amend (A1684-A1703)
Reply	December 11, 2013 Patentee Nike's Reply to adidas' Opposition (A2055-A2063)
Nishida	U.S. Patent No. 5,345,638 to Nishida (A0540-A0549)
Schuessler I	U.S. Patent No. 2,178,941 to Schuessler ("Schuessler I") (A1995-A1997)
Schuessler II	U.S. Patent No. 2,150,730 to Schuessler ("Schuessler II") (A1998-A2001)

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STATEMENT OF JURISDICTION

On April 28, 2014, the PTAB determined that issued claims 1-46 and proposed substitute claims 47-50 of the '011 patent were unpatentable pursuant to 35 U.S.C. § 318 . A1-A43. Nike noticed its appeal on June 30, 2014. This Court has exclusive jurisdiction over Nike's appeal of the PTAB's Final Written Decision in this IPR under 28 U.S.C. § 1295(a)(4)(A) and 35 U.S.C. § 319.

STATEMENT OF THE CASE

The '011 patent describes using several well-known knitting techniques to form the upper portion of a shoe. adidas petitioned for an IPR of the '011 patent, and, thereafter, the PTAB determined that it was more likely than not that all 46 issued claims were invalid based on the prior art. Nike responded by canceling all 46 issued claims and moved to add four substitute claims in place of original claims 16, 19, and 20. That proposed amendment was rejected, based on both procedural and substantive grounds.

The Board first determined that Nike had failed to meet its burden of demonstrating that the proposed substitute claims were patentable over the art known to the patentee. The Board's rules required Nike to address both references of record and "other prior art known to Patent Owner." A34. Nike was well advised of these rules as the Board "directed Patent Owner to *Idle Free*, IPR2012-00027, Paper 26, dated June 11, 2013, as providing guidance on motions to

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amend." A35. Rather than comply with the Board's directive, Nike had "addresse[d] only the references asserted in the petition and in the opposition to the motion to amend." A36. As a result, the Board determined that Nike had not met its burden for proposing substitute claims and denied entry of the amendment. A36.

The Board nonetheless also undertook a substantive analysis of whether the proposed claims distinguished the references of record. The Board noted that, as to original claims 16, 19, and 20, it had instituted IPR "because we determined that Petitioner had demonstrated a reasonable likelihood of showing that these claims were rendered obvious by Nishida." A36. Notably, Nike never challenged Nishida's disclosure with respect to those original claims, leading the Board to find it "unchallenged that Nishida teaches or suggests all of the limitations of original claims 16, 19 and 20." A36-A37. As a result, the parties focused on patentability of the additional differences between the proposed claims and the original, invalid claims.

Proposed Claim 47: The only difference between proposed claim 47 and issued claim 16 (which is undisputedly anticipated by Nishida) was the addition of "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

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removed." The parties disputed the construction of this term. Nike contended it was limited to flat knit textile elements that are "knit to shape," meaning that the element was knit to its final shape on a knitting machine rather than being knit as part of a larger textile element from which it is later cut. adidas argued that it was equally, if not more plausible that the added language refers to the edges of the flat knit element *after* it has been removed from the surrounding textile element, particularly because this is the only embodiment expressly described in the specification. The PTAB acknowledged the confusion the "flat knit edges free" phrase created, but nevertheless adopted Nike's narrower construction. A19.

Proceeding on that narrower construction, the Board then found that the "flat knit edges free" element of claim 47 did not distinguish the prior art. adidas urged that this added feature did not patentably distinguish over Nishida's disclosure. Nishida focused on reducing cutting and material waste, which would further be accomplished if the shoe upper shown in Nishida were "knit to shape" and, thus, Nishida was equally, if not more, suggestive of forming a "knit to shape" textile element than the disclosure Nike relied on in its own patent to justify its narrower construction.

The Board did not reach this ground, but instead focused on adidas' additional argument that, to the extent that a "knit to shape" flat knit textile

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element was not explicitly within the scope of Nishida's disclosure, references from the late 1930's (Schuessler I and II) disclosed using exactly the claimed technique as a way to improve a flat knitting process. Nike also did not challenge adidas's assessment of the disclosure of the Schuessler I and II references or that the prior art taught all of the elements of the proposed claims. A38.

adidas urged that the trivial step of using the "knit to shape" technique from Schuessler I and II to improve upon a similar flat knitting process used in Nishida was precisely the type of predictable combination that cannot be patentable. Nike's only response was that the reason for combining the references was "illogical" because "*after* they are combined the elements of each reference serve the same purpose." A38 (emphasis original). But the Board, relying on *KSR*, rejected this argument, finding "that the elements of the prior art references would 'serve the same purpose' when combined is a factor in favor of an obviousness determination." A39. Based on the record presented, the Board concluded "that Nishida and Schuessler I and II render substitute claims 47-50 obvious." A37.

Proposed Claims 48-50: With respect to the proposed dependent claims, adidas explained that there was nothing "new" in claims 48-50 because each feature was previously included in one or more of the originally issued claims. Based on that explanation, the limitations in claims 48-50 should also be treated as

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being unchallenged as being anticipated and/or rendered obvious by Nishida. A1696-A1700. Board therefore determined that the only "new" limitation in claims 47-50 was the "flat knit edges free" phrase in claim 47, and accordingly "group[ed] substitute claims 48-50 with claim 47 for purposes of assessing patentability." A39.

Nike's only challenge to the Board's treatment of claims 48-50 is with respect to claim 49. Nike claims that Nishida lacks disclosure of "a plurality of apertures . . . *formed by omitting stitches* in the flat knit textile element and positioned in the upper for receiving laces." But the Board had properly concluded that Nishida discloses this feature, given the recitation of an aperture was originally recited in issued claim 26, which the Board found present in Nishida in its institution decision. A25; A1171-A1172.

adidas also addressed Nike's effort to misconstrue Nishida's disclosure on this point. Nike had asserted that Nishida's apertures were formed by puncturing. But Nishida discloses that the embroidery and lacing strips (disclosure that Nike says evidences puncturing) were provided as additional options to *stabilize* apertures already present in the lacing areas. Moreover, adidas pointed out that because there is no dispute that Nishida discloses the requisite apertures for

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receiving laces, the method used to form Nishida's apertures is irrelevant for patentability because this is nothing more than a product by process feature.

As a result, the Board ultimately concluded that Nike also had not met its burden to show proposed claims 48-50 were patentable. A39. In short, the Board properly considered Nike's Motion to Amend, but determined that Nike did not meet its burden under the requirements governing motions to amend and that the proposed claims would not have overcome the combination of Nishida and Schuessler I and II.

STATEMENT OF THE ISSUES

1. Whether substantial evidence supports the Board's factual findings that proposed claims 47-50 of the '011 Patent are rendered obvious by Nishida in combination with Schuessler I and II.

2. Whether this Court should alternatively affirm the Board's judgment on the basis that the proposed claims are invalid as anticipated by and/or rendered obvious based on Nishida alone.

3. Whether this Court should alternatively affirm the Board's judgment on the basis that the proposed claims are invalid because the proposed claims lack sufficient written description.

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4. Whether the Board properly exercised its discretion by denying Nike's Motion to Amend and whether the applicable Patent Office regulation governing such motions to amend is arbitrary and capricious.

STATEMENT OF THE FACTS

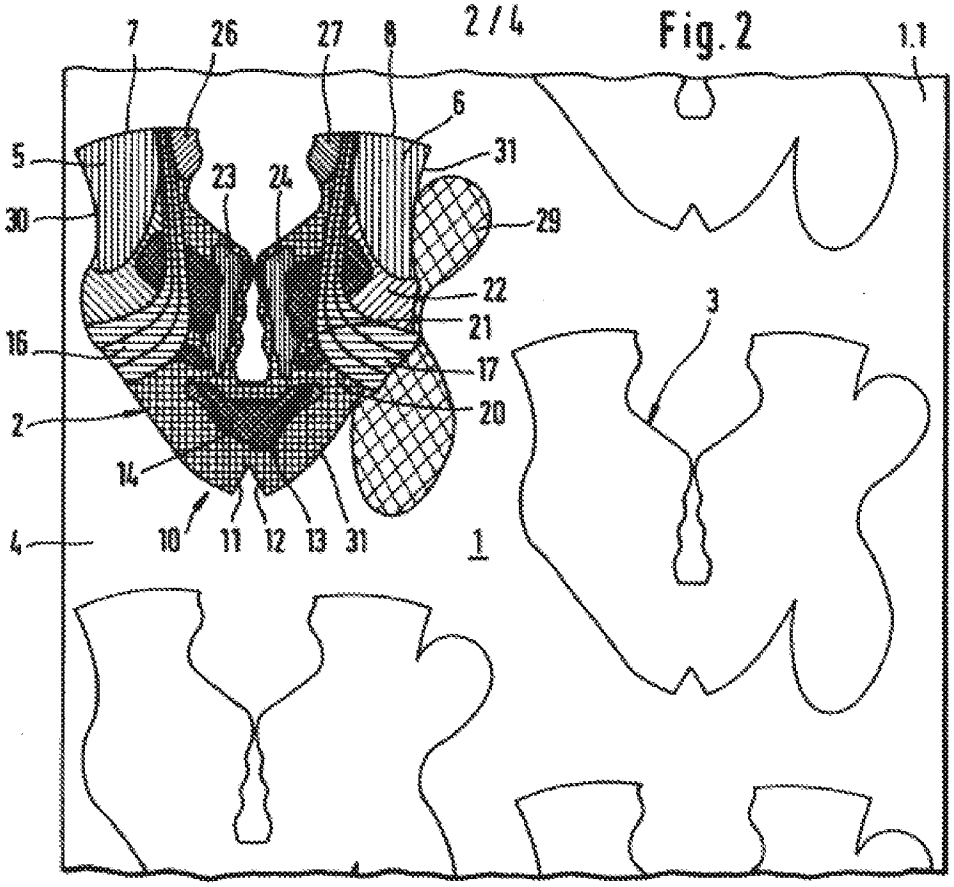
I. Brief Overview Of The State Of The Art At The Time Of The Alleged Invention Of The '011 Patent.

Knitted shoe uppers of a unitary construction with varying stitches, yarn types, patterns, or constructions in different areas of shoe uppers had been known long before the application that led to the '011 patent. A156-A157, ¶ 38.

A. The Disclosure Of The Nishida Patent.

Nishida is a U.S. patent issued on June 23, 1993, and is prior art to the '011 patent. It describes producing a shoe upper by cutting out the shoe upper in the form of a layout from a web of material produced by a conventional textile process, such as weaving and/or knitting and/or embroidering. A546, 3:5-8. The layouts may be divided into different individual parts or areas, which differ from one another, such as being of another material style and/or by being of different fibers or yarns. A546, 3:15-25. Fig. 2 (reproduced below) shows these constructions. A542.

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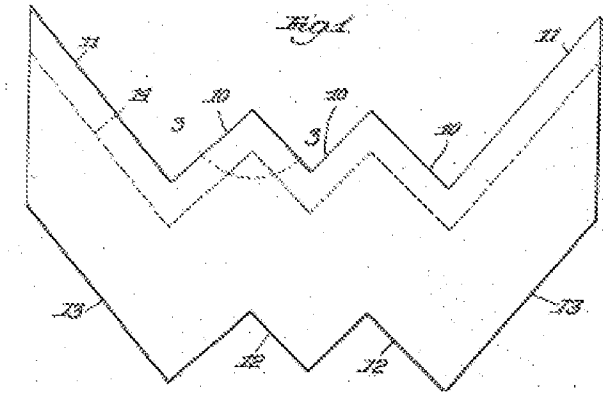


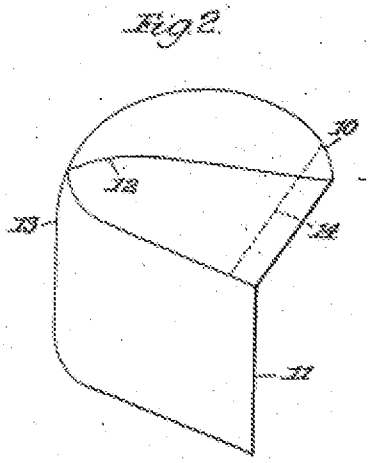
Nishida aimed to improve the efficiency of manufacturing flat knitted, unitary uppers using "conventional textile processes." A546, 3:6-12; A1167; A2010, ¶ 10-A2011, ¶ 11; A1809-A1810; A1647, ¶ 177-A1648, ¶ 179. For example, Nishida describes the advantages of reducing the costs of materials needed to produce the uppers, and also recognizes that there are advantages to reducing the amount of cutting waste, such as by having "individual patterns or partial patterns already [] produced directly in the production of the web of material in the desired shoe size, *by which the cutting waste can be still further*

limited, since the individual patterns or partial patterns in the provided size can directly adjoin one another." A545, 1:10-37; *see also* A545, 2:15-25, 2:27-32; A546, 4:12-18, 4:52-60; A169, ¶ 67-A170, ¶ 69; A2011, ¶ 11.

B. Schuessler I and II

The Schuessler I reference is a U.S. Patent issued on November 7, 1939. It teaches knitting a swatch in flat form with edges that are stitched together to form a three-dimensional helmet (i.e., cap) by joining only a few of the edges "as knitted *without requiring cutting.*" A1996, 1:22-27; *see also* A1996, 1:48-2:2, 2:41-45. Schuessler I specifically references Schuessler II, which is a U.S. Patent issued on March 14, 1939, to confirm that a flat knitting machine may be used to produce the two-dimensional textile elements of Schuessler I. *See* A1996, 1:48-2:22.





II. The '011 Patent

The '011 patent was filed in 2004, over ten years after Nishida's 1993 issuance and decades after the Schuessler references. Like Nishida, the '011 patent

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describes producing a shoe upper from a textile element, formed via various warp knitting or weft knitting processes. The textile element may have first and second areas that are parts of a unitary construction. These first and second areas may be made with different stitch configurations or different yarns, for example, so that different areas of the upper have different properties.

Each of Figures 8, 10, and 11 (reproduced below) represents a "general shape" of textile element 40, 40', 40" following its formation with "a wide-tube circular knitting machine" or "other types of knitting machines" as part of a larger textile structure 60, as shown in Figure 9 (reproduced below). A330, 5:58-60; *see also* A330, 6:66-A331, 8:14; A332, 9:7-14, 9:35-48; A333, 11:19-41. Specifically, the '011 patent describes that "[e]ach textile element 40 [be] removed from textile structure 60 with a die-cutting, laser-cutting, or other conventional cutting operation." A331, 8:8-10.

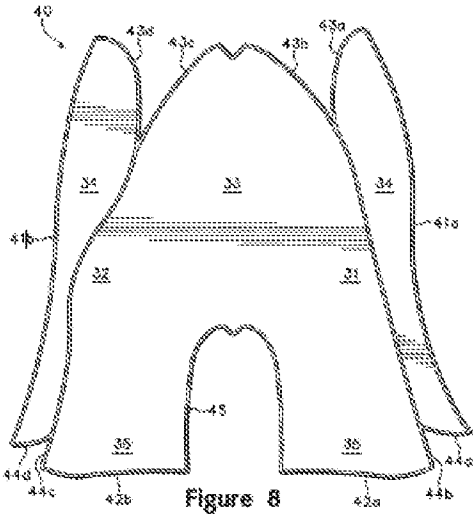


Figure 8

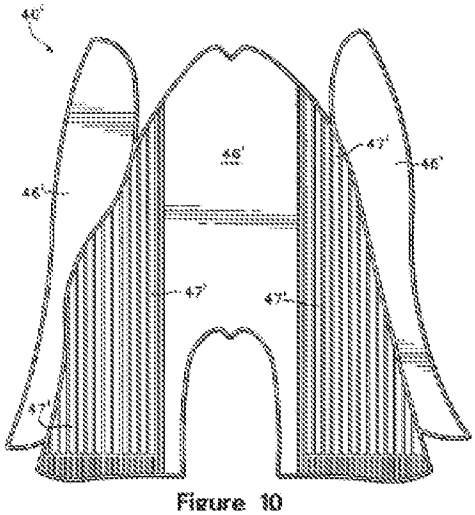


Figure 10

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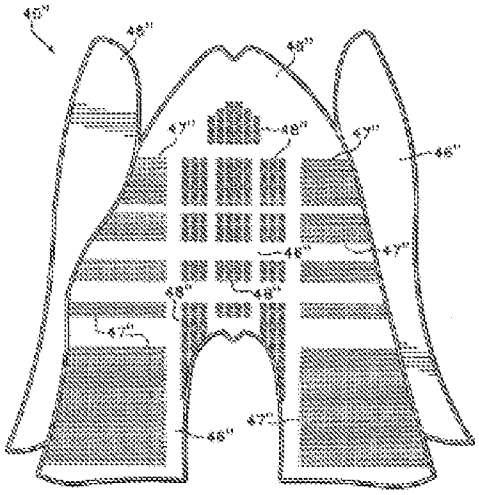


Figure 11

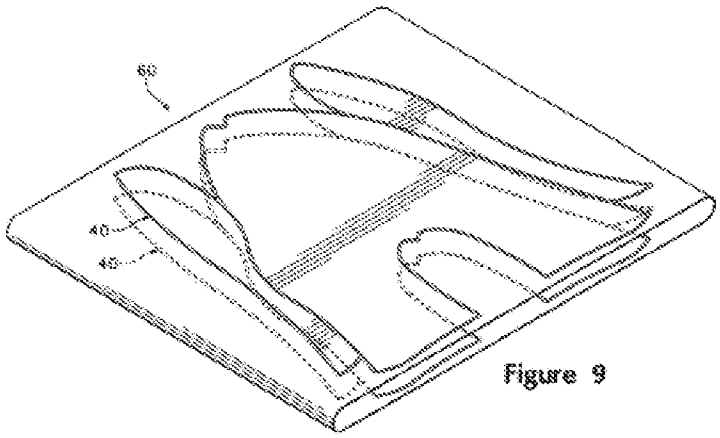


Figure 9

III. Prosecution History Of The '011 Patent.

The original patent application was filed on March 3, 2004, with claims 1-67. Original independent claims 1, 20, 28, 41, and 65 were directed to articles of footwear having an upper incorporating a textile element, and original independent claims 50 and 58 were directed to methods of manufacturing a footwear element. After a restriction requirement, Nike elected claims 1-49 and 65-67. A394.

An Office Action then issued, rejecting claims 1-11, 13, 14, 16-24, 26-35, 37-49, 65, and 67 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 1,888,172 to Joha ("Joha"). A381-A382. Several of the independent claims included the knitting method by which it was formed (*e.g.,* "formed by weft knitting"). The Examiner noted "such phrases have been treated as product by process limitations…[and] do[] NOT serve to resolve the issue concerning patentability of the product." A381. The Examiner further found "that the

numerous types of knitting are well-known in the art and are noted in some of the cited references." A381-A382.

Claims 1, 2, 7-11, 13-24, 26, 27, 41-43, 47-49, and 65-67 were rejected as being clearly anticipated by U.S. Patent No. 6,308,438 to Throneburg ("Throneburg"). A382. Accompanying these rejections, the Examiner reiterated the statements regarding product by process limitations and the known types of knitting. A382.

The Examiner further rejected claims 12, 25, and 36 under 35 U.S.C. § 103 as being unpatentable over Joha in view of U.S. Patent No. 5,746,013 to Fay, Sr. ("Fay"), and rejected claims 12 and 25 under 35 U.S.C. § 103 as being unpatentable over Throneburg in view of Fay. A383.

Nike thereafter cancelled original claims 7-10, 30, 47, and 50-64, and amended the claims to distinguish over Joha and Throneburg. A370. Nike asserted that neither Joha nor Throneburg disclose:

- an upper incorporating a single type of textile having a plurality of constructions (amended claims 1, 28, 41);
- a weft-knitted textile element having first and second areas each having a different stitch configuration to impart varying properties to each area of the textile element (amended claim 20);

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- a first area having a first set of properties and a second area having a second set of properties different from the first set (amended claim 65 rejected based on Joha); or
- disclose an upper having two different areas with each area having a different construction (amended claim 65 rejected based on Throneburg).

A370-A371.

Nike did not challenge or otherwise address the Examiner's comments regarding the unpatentability of claiming a specific method by which an upper is knitted. Therefore, these elements were believed by Nike to be the key to the patentability of the original claims.

The Examiner responded to Nike's amendment and response by moving directly from a rejection of the pending claims under 35 U.S.C. § 102 to allowance.[1] A354-A357. The missing elements Nike focused upon in its response were clearly taught by several of the references of record (*see* Nishida, Glidden) and, thus, it appeared that the Examiner may not have reconsidered the question of anticipation by other references of record or obviousness under 35 U.S.C. § 103 before deciding to allow the claims.

[1]The Examiner had rejected dependent claims 12, 25, and 36 under 35 U.S.C. § 103, but Nike reiterated the arguments made with respect to the independent claims as amended to overcome this rejection.

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IV. *Inter Partes* Review before PTAB.

adidas petitioned for *inter partes* review of claims 1-46 of the '011 patent. A1064-A1065. In support of adidas' Petition, adidas relied on testimony from Dr. Edward C. (Ned) Frederick, an expert with over thirty years of experience in all aspects of shoemaking in the sports industry, including experience in footwear design and biomechanics, as well as a comprehensive understanding of the range of material choices, construction techniques, and processes used to create the various parts of a shoe. Dr. Frederick detailed how each claim limitation of the originally issued claims were met by Nishida, among other references. A136, ¶ 4-A137, ¶ 5; A291-A313.

In its May 17, 2013 Decision to Institute, the PTAB instituted *inter partes* review of the originally challenged claims, finding that claims 1-16, 19-34, 36, and 39-46 were anticipated by Nishida, claims 16-18 were anticipated by Glidden, claims 1-16 and 19-46 were obvious over Nishida, and claims 16-18 were obvious over Glidden. A1184. Other grounds were deemed by the PTAB to be redundant with the instituted grounds. A1164.

Following institution, Nike did not challenge whether Nishida taught or suggested all of the limitations of the originally challenged claims. Instead, Nike moved to amend, requesting cancellation of all issued claims of the '011 patent and

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proposing substitute claims. Claim 47 was proposed as a substitute for issued claim 16,[2] with certain key features noted in italics:

> An article of footwear comprising:
> an upper incorporating a [weft-knitted] *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.

adidas opposed the amendment. It relied on expert testimony from both Dr. Frederick and Dr. Sabit Adanur, a tenured professor in Auburn University's Polymer and Fiber Engineering Department, who had taught knitting technology and structure of knitted fabrics since 1992. Their testimony addressed the meaning of "flat knit textile element" and "flat knit edges." A1845, ¶ 4-A1847, ¶ 9; A1862-A1901; A1857, ¶ 35-A1860, ¶ 38; A2009, ¶ 6-A2010, ¶ 8.

[2] Nike's Motion to Amend also proposed substituting dependent claims 48 and 49 for issued dependent claim 19, and substituting dependent claim 50 for issued dependent claim 20.

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A. "Flat-Knit" Textile Element

Nike asserted that "flat knit" is exclusively a sub-type of weft-knitting, and therefore its substitution in place of "weft-knitted" is a further limitation of the original scope of issued claim 16. A1228-A1229; A1573, ¶ 38-A1574, ¶ 39; A1584, ¶ 58-A1585, ¶ 59.

In contrast, Dr. Adanur explained that skilled persons would understand that a "flat knit textile element" is merely "a knitted textile that is knit in flat form," and is not exclusively limited to a specific sub-type of weft-knitting. A1858, ¶ 36, A2203, ll. 13-24. For example, flat knit textile elements are known to include weft, warp, and Milanese types of knitted materials. A1858, ¶ 37; A2214-A2215.

The Board concluded that, because the specification of the '011 patent expressly describes flat knitting as a *sub-type* of weft knitting (and not as a *sub-type* of warp knitting or any other type of knitting), "flat knit textile element" means "a flat *weft* knit textile element." A16, A27 (emphasis in original).

B. The Dispute Over the "Flat Knit Edges" Phrase:

The parties disputed the meaning of the phrase "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." There were two aspects to this phrase that were in dispute, as explained below.

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1. Claim Construction of "Flat Knit Edge."

Nike's expert, Raymond Tonkel, offered opinions on the meaning of "flat knit edges." Mr. Tonkel's opinions were limited to his own industry knowledge, and he acknowledged that he does not qualify as a textile expert. A1739; A1741; A1824; A1825. In any event, Mr. Tonkel opined that a flat knit edge referenced a textile element that was "knit to shape," although he could not identify any written description support for this proposed construction. A1606, ¶ 101; A1798-A1828.

adidas' expert, Dr. Adanur, explained that a POSITA would understand under a broadest reasonable interpretation that "flat knit edges" means "edges of a knitted textile that are knit in flat form," whether knit to shape or not. A1859-A1860, ¶ 38; A2283, ll. 2-17. In other words, flat knit edges may be edges created when a textile element is cut from a larger flat knit textile element and may also be the edges created when a flat knit textile structure is knit to shape.

The Board agreed with adidas' assertion that the term had two plausible meanings. It nevertheless determined that for the '011 patent, a flat knit edge means "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." A19.

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2. Claim Construction of "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."

Nike's proposed construction for this term is "requiring that edges of the textile element have flat knit edges without surrounding textile structure such that the flat knit edges are not surrounded by textile structure from which the textile element must be removed." A1590, ¶ 68. Mr. Tonkel testified that "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" means that the textile structure is formed as a *knit to shape* textile element, and therefore not cut from a larger textile structure. A1798-A1828.

In contrast, adidas proposed that the proper construction for this term, and the only one that is sufficiently described in the '011 patent specification, is "edges of a knitted textile that are knit in flat form, which have been *removed* from a surrounding textile structure so that the edges are free of surrounding textile structure." A1689; A330, 5:58-60; A330, 6:66-A331, 8:14; A332, 9:7-14, 9:35-48; A333, 11:19-41. adidas' proposed construction takes into account that the proposed claim language did not specify that the "edges" are always "free of surrounding textile structure…." Thus, adidas proposed a construction that is

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consistent with the specification, which teaches removing a shoe upper by cutting it from a surrounding textile element.

The Board nevertheless determined that "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" means "a knit to shape textile element formed by flat knitting, having flat knit edges. Such flat knit edges are knit, such that the yarns and fibers forming the flat knit edges of the flat knit textile element, as recited in substitute claim 47, are unbroken and remain joined between rows forming the edges." A23.

3. The Written Description Support Identified by Nike:

The only support identified by Nike for its proposed "knit to shape" construction included (1) a few original claims in the application that do not positively recite removing a flat knitted textile element from a larger textile element, (2) Figures 8, 10, and 11 showing the textile element 40, 40', 40" in a final form, and (3) a statement that flat knitting generally could be used to form the textile element in an attempt to show that the "inventors thus contemplated such footwear as part of their invention." A1229; A1586, ¶ 62-A1590, ¶ 67.

adidas asserted that the "flat knit edges" phrase must be construed as a negative limitation and, as such, the patent lacked sufficient supporting written

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description. In particular, adidas explained that the absence of the positive recitation in the as-filed claims that the textile element is removed from a larger textile structure is not a sufficient basis to conclude that the specification teaches that the feature should be excluded.

adidas explained that each of Figures 8, 10, and 11 represent a "*general shape*" of textile element 40, 40', 40" following its formation with a "wide-tube circular knitting machine" or "other types of knitting machines" as part of a larger textile structure 60, as shown in Figure 9. A330, 5:58-60; A330, 6:66-A331, 8:14; A332, 9:7-14, 9:35-48; A333, 11:19-41 (emphasis added). Nike's expert, Mr. Tonkel, admitted that the textile element 40 shown in Figures 8, 10, and 11 could just as easily represent a textile element 40 formed by the process taught in Figure 9. A1820.

adidas further described how the '011 patent also fails to describe any *disadvantages* associated with removing the textile element from the larger textile structure, nor any *advantages* of not having to do so. In fact, the only reference to the text of the '011 specification (other than Figures 8, 10, and 11) that Mr. Tonkel provided in support of the proposed claim element describes the advantage of using a single textile element, rather than numerous joined elements, to form an article of footwear. A1821-A1822; A333, 11:12-18.

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Finally, adidas explained that the mere fact that these textile elements *could* be formed from flat knitting in no way indicates that the inventors of the '011 patent *actually intended* the textile element to be formed directly on a flat knitting machine without being cut from a larger textile structure. Rather, textile elements are typically flat knit as part of a larger textile structure and removed therefrom to form the final textile element, as described in Nishida. A545, 1:10-18. Thus, the bare recitation of a textile element that is flat knitted, without a more specific description of *how* it was knit, did not provide sufficient written description for the "flat knit edges" limitation under Nike's proposed construction.

Despite the scarcity of written description support, the Board concluded that the depiction of the textile element, without surrounding material, in Figures 8, 10, and 11 and the non-limiting language used to describe the embodiment with the surrounding material in Figure 9, was sufficient to "adequately support[] the language added to original claim 16 in substitute claim 47." A31.

C. Invalidity of Proposed Substitute Claims Under Either Party's Proposed Constructions.

Nike's expert identified only *one* distinction between proposed claim 47 and Nishida: that "Nishida's 'layout' is made as part of a larger textile structure of web and must be cut out of the web," whereas, under Nike's proposed construction,

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claim 47 is limited to flat-knit textile element that is knit to shape. A1606, ¶ 101, A1817.

adidas and Dr. Frederick asserted that this is not a distinction at all under the BRI construction of the term because "flat knit edges" means "edges of a knitted textile that are knit in flat form," whether knit to shape or not. A2010, ¶ 8. But, in addition, adidas demonstrated that even under Nike's narrower construction, the proposed claims were obvious over Nishida alone. There is scant, if any, written description support in the '011 patent to support Nike's "knit to shape" construction. Nike resorted to general statements in the '011 patent specification, such as the advantages of waste reduction, when arguing its construction was supported. Dr. Frederick explained that to the extent the '011 patent suggests forming a "knit to shape" textile element based on the suggested advantages of waste reduction, Nishida is equally, if not more, suggestive of forming a "knit to shape" textile element based on the recited advantages of reducing cutting and material waste. A2011, ¶ 12-A2013, ¶ 13. Thus, the amended claims are obvious in view of Nishida.

Finally, adidas and Dr. Frederick explained how the proposed claims are obvious over Nishida in combination with Schuessler I and II. Nishida taught all of the elements of the issued claim 16 of the '011 patent. The only limitations

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added to the claim by Nike's proposed amendment related to flat knit edges, which are free of surrounding textile structure. In Nike's words, "knit to shape." However, Schuessler I and II collectively describe a method of producing a knitted helmet (i.e., cap) from a swatch knit on a flat knitting machine (such as described in Schuessler II), wherein the helmets are "completed from the swatches as knitted without requiring cutting, and requiring the joining of only a few edges." A1996, 1:22-27, 1:48-2:2 (referencing Schuessler II). Thus, all the elements of the proposed amended claim are clearly disclosed in the combination of Nishida with Schuessler I and II.

D. The Board Acted Within Its Broad Discretion In Denying Nike's Motion to Amend.

In its Final Written Decision, the Board considered Nike's motion and noted that Nike had not challenged the Board's earlier determination that Nishida teaches or suggests all of the limitations of issued claims 16, 19, and 20. A36-A37. Thus, the Board limited its evaluation to the questions of whether the newly presented elements in the proposed claims were obvious in view of the combination of Nishida and Schuessler I and II. A37.

Ultimately, the Board determined that (1) Nike had not met its burden of establishing patentability of the proposed claims over the prior art of record and also other prior art known to Nike, and (2) Nike *also* had not demonstrated the

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patentability of the proposed claims over the combination of Nishida and Schuessler I and II, one of the grounds of unpatentability proposed by adidas. A34. In particular, the Board noted that Nike did not dispute that all of the limitations are taught in the prior art, but rather focused its arguments on why a POSITA would find the combination to be illogical because "*after* they are combined the elements of each reference serve the same purpose." A38-A39. The Board noted that, according to *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007), this is in fact "a factor *in favor of* an obviousness determination, and not a suggestion of non-obviousness." A39. Accordingly, the Board denied Nike's Motion to Amend. A39.

SUMMARY OF ARGUMENT

1. Substantial evidence supports the Board's factual findings that Nishida and Schuessler I and II render obvious the proposed claims. Nike chose to forego the opportunity to respond to the Petition, and the Board's factual inquiries were appropriately limited to (1) determining whether the limitations added in proposed claims 47-50 were found in the prior art and (2) determining whether there was some reasoning or rational for combining the teachings of Nishida with those of Schuessler I and II.

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As to the first point, Nike did not initially dispute that the prior art disclosed apertures, but now urges that the references of record failed to disclose " apertures . . . formed by omitting stitches" in proposed substitute dependent claim 49. Substantial evidence supports the Board's factual finding regarding this feature, as there is ample evidence that this feature is found in Nishida. Additionally, the inclusion of "omitting stitches" adds nothing to patentability because the method of formation is nothing more than a product-by-process limitation.

Substantial evidence also supports the Board's factual findings that skilled persons would have been motivated to combine Nishida with Schuessler I and II. Nike focuses on the fact that the references serve the same purpose after they are combined, but the Board correctly reasoned that this factor *favors* obviousness. Furthermore, Nishida's explicit teaching regarding the advantages of reducing the amount of cutting waste are suggestive of forming a knit to shape textile element of precisely the type described in Schuessler I and II.

Finally, there was no error in the Board's treatment of Nike's evidence of secondary considerations or, alternatively, any such error was harmless. ***There is no reversible error where the factual determinations were actually made and it is clear that they were considered while applying the proper legal standard of obviousness.*** At minimum, because Nike's evidence lacked the requisite nexus to

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the merits of the claimed invention to be accorded substantial weight, any claimed error is harmless.

2. The Board's determination that proposed claims 47-50 were invalid should be alternatively affirmed because the proposed claims are anticipated by Nishida under the proper BRI construction of "flat knit edges." There was no reasonable basis for the Board's decision to ignore the BRI standard and adopt a narrower construction. Nevertheless, even under the narrower construction adopted by the Board, proposed claims 47-50 are rendered obvious based on the disclosure of Nishida alone. In view of Nishida's disclosure of the advantages of reducing cutting and material waste, a POSITA would find such statements to be sufficiently suggestive of forming a "knit to shape" textile element.

3. Likewise, the Board's determination that proposed claims 47-50 are invalid should alternatively be affirmed because, under the Board's construction, the proposed claims lacked sufficient written description. The Board erred as a matter of law in declining to construe Nike's proposed "flat knit edges" phrase as a negative limitation. Under the proper construction of that phrase as a negative limitation, the written description is required to contain a specific supporting description of how textile elements were "knit to shape." No such disclosure exists – instead, Nike supported its construction by reference only to (1) a few original

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claims that do not *positively* recite removing a flat knitted textile element from a larger textile element, (2) Figures 8, 10, and 11 showing a general shape of the textile element, and (3) a statement that flat knitting generally could be used to form the textile element. Under a proper construction of the term as a negative limitation, and the controlling law governing the level of written description support for such negative limitations, the proposed claims are invalid as lacking sufficient written description.

4. Nike has failed to meet its burden of proving that the Board abused its discretion in denying Nike's Motion to Amend and proving that the Board regulations governing motions to amend are arbitrary and capricious. The relevant statute expressly provides that amendment of a patent in an IPR is not a matter of right, but that a patent owner must file a motion to amend the patent with the Board. The statute also expressly conveys rulemaking authority to the USPTO regarding such motions. In determining that Nike's proposed claims did not meet the USPTO's procedural regulations governing motions to amend, the Board also found that Nike's proposed claims would not have overcome the combination of Nishida and Schuessler I and II.

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ARGUMENT

I. Standard of Review

Claim construction is a question of law that this Court reviews *de novo*. *In re Baker Hughes Inc.*, 215 F.3d 1297, 1301 (Fed. Cir. 2000). "[C]laims under examination before the PTO are given their broadest reasonable interpretation consistent with the specification." *In re Abbott Diabetes Care, Inc.*, 696 F.3d 1142, 1148 (Fed. Cir. 2012). This Court recently confirmed that the broadest reasonable interpretation approach applies during IPR proceedings. *In re Cuozzo Speed Techs., LLC*, No. 2014-1301, slip op. at 19 (Fed. Cir. Feb. 4, 2015).

The PTAB's factual findings are to be upheld unless they are not supported by substantial evidence, while its legal conclusions are reviewed *de novo*. *Flo Healthcare Solutions, LLC v. Kappos*, 697 F.3d 1367, 1375-76 (Fed. Cir. 2012). Substantial evidence is more than a "mere scintilla of evidence" but something less than the "weight of the evidence." *In re Kotzab,* 217 F.3d 1365, 1369 (Fed. Cir. 2000) (citation omitted). It is simply "such relevant evidence as reasonable minds might accept as adequate to support a conclusion even if it is possible to draw two inconsistent conclusions from the evidence." *Fleming v. Escort Inc.*, 774 F.3d 1371, 1375 (Fed. Cir. 2014).

Obviousness is a question of law with underlying issues of fact regarding, *inter alia*, the scope and content of the prior art, and the differences between the

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prior art and the claims at issue. *In re Morsa*, 713 F.3d 104, 109 (Fed. Cir. 2013), cert. denied sub nom. *Morsa v. Patent and Trademark Office*, 134 S. Ct. 1317 (2014).

In reviewing decisions of the PTAB, this Court applies the standards of the Administrative Procedure Act. *Pioneer Hi-Bred Int'l, Inc. v. Monsanto Tech. LLC*, 671 F.3d 1324, 1326-27 (Fed. Cir. 2012). Therefore, PTAB actions are only set aside if they are arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. *Id.; see also Japanese Found. for Cancer Research v. Lee*, 773 F.3d 1300, 1304 (Fed. Cir. 2014); *In re Sullivan*, 362 F.3d 1324, 1326 (Fed. Cir. 2004); 5 U.S.C. § 706(2)(A). Agency regulations promulgated pursuant to an express delegation of authority by Congress are entitled to broad deference from this Court unless based on an unreasonable construction of the statute. *Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 843-44 (1984); *see also In re Cuozzo*, No. 2014-1301, slip op. at 8 (Fed. Cir. Feb. 4, 2015) ("Because Congress authorized the PTO to prescribe regulations, the validity of the regulation is analyzed according to the familiar Chevron framework."); *see also Pioneer Hi-Bred Int'l, Inc. v. Monsanto Tech. LLC*, 671 F.3d 1324, 1326-27 (Fed. Cir. 2012). The USPTO's interpretation of its own regulations is "controlling unless plainly erroneous or inconsistent with the regulation," *Auer v. Robbins*, 519 U.S. 452, 461

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(1997) (internal quotation marks omitted); *see also In re McDaniel*, 293 F.3d 1379 (Fed. Cir. 2002). Indeed, "considerable weight should be accorded to an executive department's construction of a statutory scheme it is entrusted to administer." *See United States v. Mead Corp.*, 533 U.S. 218, 227-228 (2001) (citing *Chevron*, 467 U.S. at 844).

II. Substantial Evidence Supports The Board's Factual Findings That Nishida And Schuessler I And II Render Obvious The Proposed Substitute Claims.

As reiterated in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), the framework for the objective analysis for determining obviousness under 35 U.S.C. § 103 is provided in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). This guidance explains that obviousness is a question of law based on underlying factual inquiries, which are as follows: (A) Determining the scope and content of the prior art; and (B) Ascertaining the differences between the claimed invention and the prior art; and (C) Resolving the level of ordinary skill in the pertinent art. *See Graham*, 383 U.S. at 17. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. *Id.* at 18.

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As shown below, Nike has failed to present this Court with any reasonable basis for overturning the Board's factual findings and legal conclusions as to the combination of Nishida with Schuessler I and II, which together render the '011 Patent obvious. The Board's factual determinations are supported by substantial evidence and the Board's application of the legal standard of obviousness is sound.

A. Substantial Evidence Supports The Board's Factual Findings That The Limitations Added To Issued Claims 16, 19, And 20 (In The Proposed Substitute Claims) Were Found In The Prior Art.

As the Board correctly noted, each feature included in proposed claims 47-50, which was also present in issued claims 16, 19, and 20, is accepted as being unchallenged. Nike purposely chose to forego the opportunity to respond to the Petition, and as a result the Board correctly noted that it "accept[s] as unchallenged that Nishida teaches or suggests all of the limitations of original claims 16, 19, and 20." A36-A37; *see also* A1178. As a result, the Board confined its inquiry to whether the newly added limitations in proposed claims 47-50 are taught or suggested in Schuessler I and II. A37.

With respect to these newly added features, adidas and Dr. Frederick explained that each of these features was either (1) disclosed by Schuessler I and II or (2) was *already present* in one or more of claims 1, 2, 16, 19, or 20 (and therefore any arguments regarding patentability of these features was waived by

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Nike's decision not to file a response to the petition because the Board *also* determined that more likely than not these claims were anticipated and/or rendered obvious by Nishida). A1696-A1700; A2010, ¶ 9-A2012, ¶ 15.

1. Proposed Substitute Independent Claim 47

With respect to proposed claim 47, the Board considered the declaration of Dr. Frederick, who provided extensive testimony as to how Schuessler I describes a method of producing a knitted helmet (i.e., cap) from a swatch knit on a flat knitting machine (such as described in Schuessler II), "as knitted *without requiring cutting*." A37 (emphasis in original); A1996, 1:39-42; 1:25-26, 1:17-18; A2010, ¶ 9-A2012, ¶ 15.

The Board further considered from Dr. Frederick's declaration that the swatch is a two-dimensional shape—the edges of which may be joined to form a three-dimensional shape, which is a cap that includes an opening to receive the wearer's head. A37; A1996, 2:41-45, 1:32-36; A1995, Fig. 2; A2012, ¶ 14. Specifically, the Board considered and agreed with Dr. Frederick's explanation, finding that "Schuessler I teaches or suggests knitting the swatch to shape." A37; A1996, 1:48-2:2; A2012, ¶¶ 14-15.

In short, the Board found Dr. Frederick's testimony and explanation regarding Schuessler I's disclosure of the newly added features of claim 47 to be

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persuasive. In view of the evidence provided by adidas and Dr. Frederick to demonstrate how the newly added limitations to claim 47 are found in Schuessler I and II, as well as the fact that Nike has not challenged this evidence, the Board's conclusion that the newly added features in independent claim 47 were taught or suggested by Schuessler I and II is supported by substantial evidence.

2. Proposed Substitute Dependent Claims 48-50

With respect to the proposed substitute dependent claims 48-50, adidas explained that these proposed claims included no subject matter that was not already present in one or more of the originally issued claims. A1696-A1700. With respect to the proposed claims 48-50, adidas explained that each of the claimed features corresponded to a feature that was already present in one or more of the issued claims 2, 19, and 20, as well as identifying where that feature was described in Nishida. A1696-A1700. As a result, Nike's waiver of the right to argue patentability of subject matter in the issued claims (as described above) also applied to proposed claims 48-50. Indeed, in its Reply, Nike *notably* did not challenge adidas' assessment that there was nothing "new" in proposed claims 48-50. A2055-A2060.

The Board found adidas' unchallenged explanation regarding which features were "newly added" to claims 47-50 to be persuasive, and determined that its

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inquiry was limited to whether "flat knit edges" phrase distinguished the art. A25; A37. As a result, it was entirely appropriate for the Board to "group substitute claims 48-50 with claim 47 for purposes of assessing patentability," as claims 48-50 added nothing new to the distinguish from the claims that the Board determined to have a high likelihood of being anticipated and/or rendered obvious by Nishida in the Decision to Institute, the determination of which Nike has waived the right to dispute. A39; A1166-A1178.

3. Proposed Substitute Dependent Claim 49

In response to adidas' explanation that there was nothing new about the feature in dependent claim 49, Nike submitted no evidence or argument to the contrary below. Nike *now* argues that the Board's determination that Nishida discloses claim 49's "plurality of apertures . . . *formed by omitting stitches* in the flat knit textile element and positioned in the upper for receiving laces" is unsupported by substantial evidence. Nike waived its opportunity to argue the patentability of this feature by not presenting these arguments to the Board.

But, in any event, Nike's arguments are flawed for several reasons. As fundamental matter, the Board considered and agreed with adidas' and Dr. Frederick's explanation that Nishida discloses the use of holes for lacing. A546, 3:43-52; A547, 6:25-31; A542, Figure 3; A191-A192. Specifically, the Board

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found that "Nishida describes forming lacing areas by knitting." A25. In reaching this determination, the Board referenced its Decision to Institute regarding issued claim 26, in which the Board previously found adidas and Dr. Frederick's explanations as to how each element of claim 26 was disclosed by Nishida to be persuasive and unrebutted by Nike. A25; A1171-A1172. The Board also found persuasive adidas' claim chart for proposed claim 49, which cited Dr. Frederick's testimony regarding Nishida's disclosure of this element. A25; A1700; A191-A192. Thus, substantial evidence supported the Board's factual determination that the features of claim 49 are disclosed by Nishida, a point Nike failed to dispute before the Board.

Despite this well-supported factual determination by the Board regarding Nishida's disclosure of the recited apertures, Nike nevertheless asserts that the Board failed to appreciate that the apertures must be *formed by omitting stitches*, and claims that Nishida's apertures are instead formed by puncturing holes through embroidery. Nike Appeal Br., p. 25. Even if the argument was not raised, it is legally immaterial; *how* the apertures are formed in Nishida's upper is irrelevant, as this is nothing more than a product-by-process limitation. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does

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not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985). Thus, so long as Nishida discloses the claimed apertures positioned in the upper for receiving laces (which it clearly does), there is no need to consider how the holes are formed for purposes of patentability.

Factually, there was also ample evidence to support the Board's contrary conclusion. As detailed by adidas and Dr. Frederick, Nishida specifically discloses that the apertures are *formed by omitting stitches*, precisely as recited in claim 49. The Board considered adidas' and Dr. Frederick's undisputed explanation of how Nishida discloses omitting stitches (via use of a net-like structure) as a way to provide air permeability to the upper, and found that explanation to be persuasive. A25; A1698; A1700; A191-A192; A546, 3:43-52, 3:66-4:5. That evidence and Nishida's disclosure constitutes more than substantial evidence to support the Board's conclusions.

Nike avoids addressing this evidence and instead points to Nishida's separate disclosure of optional lacing strips. Those lacing strips may be layered over the net like structure to reinforce that structure and holes formed in the lacing

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strips may be aligned with the existing holes in the net-like structure. Thus, Nishida explains that "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*." A546, 4:1-5 (emphasis added). Nishida thus recognizes that (a) the lacing strips are optional and may not be applied; (b) that the net-like structure may itself then be used or (c) if no lacing strips are applied and the net-like structure is used, then the lacing areas can be further stabilized.[3]

Nishida thus describes *additional options* that may be used to *stabilize* apertures *already* present in the lacing areas 23 and 24. Furthermore, the fact that the holes are more prominent in Figure 3 (versus Figure 2)—another reason provided by Nike to support its contrived interpretation—is of no moment because Nishida's Figure 3 illustrates the *optional reinforcing holes* present in the *optional lacing strips 25*, not the lacing areas 23 and 24 underneath. Figure 2, on the other hand, and the specification teaches that shoe uppers are completed on the web of

[3] In the latter case, the additional stability may be formed via an embroidery. A546, 4:31-38. Nike points to this disclosure to argue that the holes for lacing areas shown in Figure 3 must be created by *puncturing* through the lacing areas, as Nike asserts. Nike Appeal Br., pp. 25-26. But if the optional strips or embroidery are not used, the net-like structure exists and has apertures formed by omitting stitches. And, if those options are used for reinforcement, nothing in Nishida's disclosure says they are created via puncturing.

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material and ready for use and will include having holes for laces. *See also* A540, Abstract ("[A] process is used by which such shoe uppers can be produced in a time saving and efficient manner …. For this purpose, a web of material (1) is used to produce layouts (2)… The layout is cut from the web as a unit with the sole part and processed into a shoe having an upper and sole part.").

For at least these reasons, the Board's determination that each element of the proposed claims is disclosed by the combination of Nishida and Schuessler I and II is supported by substantial evidence, and should be affirmed.

B. Substantial Evidence Supports The Board's Factual Findings That A POSITA Would Have Been Motivated To Combine Nishida With Schuessler I And II.

The Board correctly considered and agreed with adidas and Dr. Frederick that there are multiple reasons for combining Nishida with Schuessler I and II. A2012, ¶ 14-A2012, ¶ 15. The disclosures of Nishida and Schuessler I clearly show that they are indeed analogous prior art because they are both "in similar fields and address the same problem, namely the formation of two-dimensional textile elements having edges that are joined to form three-dimensional, wearable items." A38. Schuessler II simply confirms that the knitted cap disclosed in Schuessler I was indeed flat knitted.

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Nike's only argument with respect to the combination is that it is illogical for a POSITA to combine Nishida's teaching regarding waste reduction by placing layouts in adjoining positions and Schuessler I's teaching regarding knitting textile elements to shape based on the fact that the two references serve the same purpose *after* they are combined. As the Board correctly noted, "'if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.'" A38-A39 (quoting *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007)). In view of *KSR*'s teaching, the Board correctly determined that Nike's argument is "a factor *in favor of* an obviousness determination, and not a suggestion of non-obviousness." A39.

Nike first argues that the Board improperly placed the burden on Nike to demonstrate the patentability of the amended claims over the combination of Nishida and Schuessler I and II. As detailed below, as the moving party, the Board properly determined that Nike bore the burden of proof of establishing that it was entitled to the relief it requested, including demonstrating the patentability of its proposed claims over cited art as well as all other art. A39; 37 C.F.R. § 42.20(c). The express language of the statute makes clear Congress' intent that amendments

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to a patent in an IPR are not to be entered as a matter of right, but only can be presented as a *motion* to amend the patent filed with the Board. 35 U.S.C. § 316(d)(1). The Board's regulations align with this express intent that amendments are not entered as a matter of right. All motions before the PTAB, including motions to amend a patent in an IPR, are governed by 37 C.F.R. § 42.20(c), which provides that the "moving party has the burden of proof to establish that it is entitled to the requested relief." 37 C.F.R. § 42.20(c).

The Board considered Nike's motion to amend, but found Nike did not meet its burden of establishing the proposed claims were patentable given the art. A34-A39. Furthermore, the reasoning used by the Board was based on an appropriate analysis of the obviousness question, regardless of the burden imposed on the parties. Because this is nothing more than a routine obviousness case with trivial differences between the main reference and the proposed claims, the result does not change regardless of how the burden is applied.

Nike next asserts that the description of the reasons to combine—that all three references are in the general field of textiles that can be shaped into wearable items and collectively feature the disparate elements of the proposed claims—is not sufficiently explicit to demonstrate the rationale as to why a POSITA would have thought to combine the references. In particular, Nike focuses on the fact that

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Nishida is a subtractive process in which the textile element is removed from a larger web, whereas Schuessler I and II are directed to an additive process of knitting textile elements to shape.

As the Board noted, *KSR* teaches that one way of determining whether a claim is obvious is to identify a known problem existing at the time of the invention and determine whether there was an obvious solution encompassed by the claims. A38-A39; *KSR*, 550 U.S. at 420. As explained by adidas and Dr. Frederick, a POSITA would find that these references are directed to solving the same problem, which is finding a way to form a three-dimensional wearable item in an efficient and economical way from a knitted two-dimensional textile element. A1696; A2012, ¶¶ 14-15. For example, it is plainly evident that the problem of reducing manufacturing costs and material waste to create more efficient shoe manufacturing processes existed as of the filing date of the '011 patent. Nishida addresses this problem by providing a knitted upper of a single material, which is knitted on a web of material, just like that described in the '011 patent disclosure. Nishida, concerned with material waste, describes minimizing excess web material and using a lower cost material for the web portions that are not used in shoe creation. A2011, ¶ 11; A545, 1:10-37, 2:15-25.

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Contrary to Nike's assertions, a POSITA would find extensive and explicit reasons to look to other processes to further reduce material waste (such as that described in Schuessler I) when Nishida has explicitly recognized the advantages of reducing the amount of cutting waste, such as by having individual patterns or partial patterns already "produced directly in the production of the web of material in the desired shoe size, *by which the cutting waste can be still further limited*, since the individual patterns or partial patterns in the provided size can directly adjoin one another." A2011, ¶ 11-A2012, ¶ 13; A545, 2:27-32 (emphasis added). Furthermore, Dr. Frederick specifically explained how such statements in Nishida are suggestive of forming a knit to shape textile element. A2011, ¶ 11-A2012, ¶ 13.

The Board thus had ample evidence to find the prior art suggested or motivated the combination of references. Indeed, Nike's contrary argument that a POSITA with an understanding of Nishida, would be incapable of making further process adjustments to knit only the shoe uppers with no web at all and further eliminating any wasted materials as taught by Schuessler I, would be premised on the POSITA possessing no creativity at all. This is precisely what *KSR* cautioned against. *KSR*, 550 U.S. at 421. Thus, the Board had ample evidence to justify its factual findings and legal conclusions of obviousness.

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C. There Was No Error In The Board's Treatment of Nike's Evidence Of Secondary Considerations, Or Alternatively, Any Such Error Was Harmless.

Nike presented the Board with evidence of what it considered to be a long-felt need for its invention. Specifically, Nike claimed a long felt need to reduce cutting waster and the number of steps in the manufacturing process. Nike now claims that the Board failed to consider this evidence because there was no mention of the secondary considerations in the Final Written Opinion. Nike Appeal Br., pp. 32-33.

While Nike is correct that it is error not to *consider* evidence of secondary considerations when present, the mere fact that the Board did not explicitly enumerate each of the *Graham* factors when making its obviousness determination is not dispositive of whether the Board erred in its obviousness analysis. "Where the record adequately supports the judgment, the district court does not have an obligation to recite every detail of its reasoning." *MySpace, Inc. v. GraphOn Corp.*, 672 F.3d 1250 (Fed. Cir. 2012) (quoting *Lexion Med., LLC v. Northgate Techs., Inc.*, 641 F.3d 1352, 1359 (Fed. Cir. 2011)); *see Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 990 (Fed. Cir. 1988) ("It would have been preferable if the court had enumerated the *Graham* factors and systematically presented its analysis in terms of these factors. However, there is no reversible error if the required

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factual determinations were actually made and it is clear that they were considered while applying the proper legal standard of obviousness.").

As detailed in Nike's Appeal Brief, both parties presented extensive arguments through the IPR briefing and during the hearing regarding the *Graham* factors and, in particular, Nike's assertions of secondary considerations of nonobviousness. As this Court determined in *MySpace,* that type of briefing and argument is sufficient evidence to determine that there was no error in the Board's handling of Nike's evidence of secondary considerations. *MySpace*, 672 F.3d at 1264.

Even assuming the Board had some obligation to address Nike's argument in its decision, any possible error is harmless because Nike's evidence lacked the requisite nexus to the merits of the claimed invention to be accorded substantial weight. Nike's evidence of long-felt need focused strictly on the "knit to shape" feature, which adidas demonstrated was present in the prior art, particularly in Schuessler I. There was thus no legally-cognizable nexus between the evidence of secondary considerations and a novel feature in the claims.

As noted by this Court, "[f]or 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." *In re Huai-*

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Hung Kao, 639 F.3d 1057, 1068 (Fed. Cir. 2011) (quoting *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010) (internal quotation omitted)). "Where the offered secondary consideration actually results from something other than what is both claimed and novel in the claim, there is no nexus to the merits of the claimed invention." *In re Huai-Hung Kao*, 639 F.3d at 1068 (citing *Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d 1358, 1369 (Fed. Cir. 2011)). Thus, without a nexus, the evidence should not have been accorded substantial weight, and any such error for failing to explicitly enumerate the consideration of that evidence is harmless.

In sum, there was no error in the Board's treatment of Nike's evidence of secondary considerations. At most, its failure to comment on that evidence, even if error, was harmless as Nike's evidence lacked sufficient nexus to be accorded substantial weight in the obviousness analysis.

III. Alternatively, This Court Should Affirm The Board's Judgment That The Proposed Substitute Claims Are Invalid As Anticipated And/Or Obvious Based On Nishida Alone.

The Board's determination that the challenged claims of the '011 patent are invalid should be alternatively affirmed as anticipated and/or obvious based on the disclosure of Nishida alone. *Jennings v. Stephens*, 135 S. Ct. 793, 798 (2015);

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Shamrock Techs., Inc. v. Med. Sterilization, Inc., 903 F.2d 789, 792 (Fed. Cir. 1990).

The only disputed issue is whether Nishida discloses or suggests all of the recited limitations of claims 47-50. As described above, Nike's expert identified only *one* distinction between proposed claim 47 and Nishida: that "Nishida's 'layout' is made as part of a larger textile structure of web and must be cut out of the web," whereas, under Nike's proposed construction, claim 47 is limited to flat-knit textile element that is arguably knit to shape. A1606, ¶ 101, A1817.

A. The Proposed Substitute Claims 47-50 Are Anticipated By Nishida Under The Broadest Reasonable Construction Of "Flat Knit Edges."

adidas and Dr. Frederick asserted that the distinction alleged by Nike is in fact not a distinction at all under the BRI construction of the term because "flat knit edges" means "edges of a knitted textile that are knit in flat form," whether knit to shape or not. A2010, ¶ 8. Under the BRI construction of this term, claims 47-50 are clearly anticipated by Nishida. A1859-A1860, ¶ 38; A2283, ll. 2-17.

Inexplicably, the Board ignored the BRI construction of this term and instead adopted Nike's narrower "knit to shape" construction. A19. According to the Board's own words, it is required to "apply the broadest reasonable interpretation of the words in their ordinary usage, as those words would be

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understood by one of ordinary skill in the art, taking into account any definitions supplied by the Specification." *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). A15.

Nike provided no construction of this term at all, whereas adidas provided expert testimony from Dr. Adanur, a knitting professor from Auburn University, explaining how a POSITA would understand those words. A1859, ¶ 38. Nor are there any definitions or other description in the Specification to support the narrower construction. If anything, the broadest reasonable construction is the *only* construction that has sufficient written description within the '011 patent. A1691; A330, 5:58-60; *see also* A330, 6:66-A331, 8:14; A332, 9:7-14, 9:35-48; A333, 11:19-41. Hence, there is no reasonable basis within the framework provided by this Court for the Board to decide not to adopt the BRI construction of "flat knit edges."

adidas urges that the Board should have adopted the BRI construction of "flat knit edges," and the Board's judgment should be affirmed on the basis that claims 47-50 are anticipated by Nishida.

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B. The Proposed Substitute Claims 47-50 Are Rendered Obvious By Nishida Under The Board's Narrower Construction Of "Flat Knit Edges."

Even under the Board's narrower construction of "flat knit edges," the proposed claims are obvious over Nishida alone.

As adidas explained in its Opposition, Dr. Frederick provided a detailed explanation on the common sense modification of Nishida's process resulting in a knit to shape configuration. In particular, Dr. Frederick explained that for the very same reasons a POSITA would find the statements in the '011 patent regarding the advantages of manufacturing an upper as a single textile element to suggest forming a "knit to shape" textile element, a POSITA would find similar statements in Nishida regarding the advantages of reducing cutting and material waste to be equally, if not more, suggestive of forming a "knit to shape" textile element. A2011 ¶ 11-A2012, ¶ 13.

For example, as Dr. Frederick explained, Nishida recognizes that there are advantages to reducing the amount of cutting waste, such as by having individual patterns or partial patterns already "produced directly in the production of the web of material in the desired shoe size, by which the cutting waste can be still further limited, since the individual patterns or partial patterns in the provided size can directly adjoin one another." A2011, ¶ 11; A545, 2:27-32. It would have been a

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trivial matter for a POSITA to read Nishida's suggestion of minimizing the amount of material between textile elements as much as possible by having the patterns "directly adjoin one another" and determine that the obvious next step would be to eliminate the material between the textile elements entirely by knitting the textile elements to shape. A2011, ¶ 13.

As this Court has recognized, obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. *In re Kahn*, 441 F.3d 977, 986 (Fed. Cir. 2006). In this case, Nishida provides a clear suggestion to make the trivial modification to a "knit to shape" process and, as such, the Board should have also found that claims 47-50 were obvious in view of Nishida alone under the narrower construction.

In sum, there were ample grounds for concluding that Nishida alone rendered the proposed claims anticipated and/or obvious. Thus, the Board's judgment should be affirmed.

IV. Alternatively, This Court Should Affirm The Board's Judgment On The Basis That the Proposed Substitute Claims Are Invalid Because, Under The Board's Construction, The Proposed Substitute Claims Lack Sufficient Written Description Under 35 U.S.C. § 112, First Paragraph.

The Board's determination that the challenged claims of the '011 patent are invalid as obvious should alternatively be affirmed as invalid because the Board's

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construction lacks sufficient written description. *Jennings*, 135 S. Ct. at 798; *Shamrock Techs.*, 903 F.2d at 792.

As described above, adidas urged in its Opposition that the BRI construction of "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" is indefinite because it is subject to two plausible meanings: (1) a flat knit textile element having flat knit edges, *which has been removed from a larger structure*, and (2) a flat knit textile element having flat knit edges, *which has been flat knit to shape.*

While the Board agreed with adidas on this point ("[i]n an absolute sense, we agree"), it avoided the indefiniteness issue by construing the term as being limited to only the latter: a flat knit textile element having flat knit edges, which has been flat knit to shape. A19. This despite nothing in the claim language or elsewhere suggesting that the claim language is so limited.

In addition to the indefiniteness problem, adidas asserted that the claim language should be treated as a negative limitation, and as such, lacks the necessary written description. In particular, adidas explained that the absence of the positive recitation in the as-filed claims that the textile element is removed

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from a larger textile structure is not a sufficient basis to conclude that the specification teaches that the feature should be excluded. A1689.

While the Board acknowledged the possibility of a negative limitation, it failed to specifically state that it was construing the claim term as a negative limitation.[4] A20-A21. By not affirmatively applying the proper construction to this term, the Board's analysis of the sufficiency of written description to support the claim term was flawed because it was not guided by the heightened requirement applied to the level of written description needed to support negative limitations.

"Negative claim limitations are adequately supported when the specification describes a *reason* to exclude the relevant limitation." *Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344, 1351 (Fed. Cir. 2012) (emphasis added). "[T]he mere absence of a positive recitation in the original disclosure is not [a] basis to exclude the limitation." *Ex parte Lazaridis*, No. 2010-005137, at 5 (P.T.A.B. Mar. 1, 2013); *see also Ex part Miyashita*, No. 2010-010626, at 6 (P.T.A.B. Apr. 2, 2013) (holding that a specification that neither explicitly describes the negative limitation of excluding a feature, nor indicates possession of the feature by

[4] Even though the ultimate conclusion may involve an error in written description, failure to construe a term as having a negative limitation is a fundamental error in claim construction that is reviewed *de novo*. *In re Baker Hughes Inc.*, 215 F.3d 1297, 1301 (Fed. Cir. 2000).

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describing any advantage of excluding the feature or any disadvantage of including the feature lacks sufficient written description). Thus, the absence of the positive recitation in the original as-filed claims of the '011 patent that the textile element is removed from a larger textile structure, as Nike argues, is not a sufficient basis to support the negative limitation.

The items that Nike cobbled together in support of this "knit to shape" construction included (1) a few original claims in the application that do not *positively* recite removing a flat knitted textile element from a larger textile element, (2) Figures 8, 10, and 11 showing a *general shape* of the textile element 40, 40', 40" in final form, and (3) a statement that flat knitting generally could be used to form the textile element in an attempt to show that the "inventors thus contemplated such footwear as part of their invention." A1229; A1586, ¶ 62-A1590, ¶ 67.

With respect to the support from Figures 8, 10, and 11, adidas explained that these figures represent a "*general shape*" of textile element 40, 40', 40" following its formation with a "wide-tube circular knitting machine" or "other types of knitting machines" as part of a larger textile structure 60, as shown in Figure 9. A330, 5:58-60; A330, 6:66-A331, 8:14; A332, 9:7-14, 9:35-48; A333, 11:19-41. Nike's expert, Mr. Tonkel, admitted that the textile element 40 shown in Figures 8,

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10, and 11 could just as easily represent a textile element 40 formed by the process taught in Figure 9. A1820.

adidas also demonstrated to the Board that the '011 patent fails to describe any *disadvantages* associated with removing the textile element from the larger textile structure, nor any *advantages* of not having to do so. In fact, the only reference to the text of the '011 specification (other than Figures 8, 10, and 11) that Mr. Tonkel provided in support of the proposed claim element describes the advantage of using a single textile element, *rather than numerous joined elements*, to form an article of footwear (regardless of whether the textile element is cut from a larger textile structure or knit to shape). A1821-A1822; A333, 11:12-18 (emphasis added).

Finally, adidas explained that the mere fact that these textile elements *could* be formed from flat knitting in no way indicates that the inventors of the '011 patent *actually intended* the textile element to be formed directly on a flat knitting machine without being cut from a larger textile structure. Rather, textile elements are typically flat knit as part of a larger textile structure and removed therefrom to form the final textile element, as described in Nishida. A545, 1:10-18. Thus, the bare recitation of a textile element that is flat knitted, without a more specific

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description of *how* it was knit, does not rise to the level of providing sufficient written description for this negative limitation.

Despite adidas' explanation as to the scarcity of written description support for the proposed claims, the Board nevertheless concluded that the depiction of the textile element, without surrounding material, in Figures 8, 10, and 11 and the non-limiting language used to describe the embodiment with the surrounding material in Figure 9, was sufficient to "adequately support[] the language added to original claim 16 in substitute claim 47." A31.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. *See, e.g., Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319 (Fed. Cir. 2003). In this case, as described above, adidas provided an extensive explanation as to why the meager suggestions in the '011 patent did not rise to the level of describing the "knit to shape" invention in sufficient detail that a POSITA could reasonably conclude that this concept is what the inventors had in mind at the time of the invention.

Moreover, by reaching this conclusion regarding the written description, while simultaneously concluding that the proposed claims are not rendered obvious

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by Nishida alone, the Board has reached an inconsistent result. As described above, the '011 patent language that Nike cites as being suggestive of a "knit to shape" textile element is equivalent to the language cited by adidas in Nishida as being suggestive of a "knit to shape" textile element. As this Court has noted, a description that does not render a claimed invention obvious cannot sufficiently describe the invention for the purposes of the written description requirement of 35 U.S.C. 112. *Regents of the Univ. of Cal. v. Eli Lilly and Co.,* 119 F.3d 1559, 1567 (Fed. Cir. 1997). In other words, the level of suggestion in Nishida is either enough to render the proposed claims obvious or the level of suggestion in the '011 is not enough to provide sufficient written description support for the "knit to shape" feature in the proposed claims.

adidas therefore urges this Court to affirm the Board's judgment on the basis that the challenged claims of the '011 patent are invalid under this alternative basis.

V. The PTAB Properly Exercised its Discretion in Denying Nike's Motion to Amend.

The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 11-229 (Sept. 16, 2011), created IPR proceedings. 125 Stat. 284 – 125 Stat. 341 (2011) (codified in of various sections of 35 U.S.C., with 35 U.S.C. §§ 311-319 directed to IPR proceedings). The AIA expressly provides that amendment of a patent in an IPR is

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not a matter of right, but that a patent owner *may* file a motion to amend the patent with the PTAB. 35 U.S.C. § 316(d)(1). The AIA conveyed rulemaking authority to the USPTO and provides that "[t]he Director shall prescribe regulations . . . setting forth standards and procedures for allowing the patent owner to

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No. 2014-1719

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

NIKE, INC.,

Appellant,

v.

ADIDAS AG,

Appellee.

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

APPELLANT'S UNOPPOSED MOTION FOR A 30-DAY EXTENSION OF TIME TO FILE ITS REPLY BRIEF

Pursuant to Federal Rule of Appellate Procedure 26(b) and Federal Circuit Rule 26(b), Appellant Nike, Inc. ("Nike") respectfully moves for a 30-day extension of the time within which it may file its reply brief. Counsel for Appellee Adidas AG ("Adidas") and Intervenor Director, U.S. Patent and Trademark Office ("PTO") have informed counsel for Nike that Adidas and the PTO do not oppose this motion and will not file a response.

Nike's reply brief is currently due on or before April 27, 2015. Nike respectfully requests that the briefing schedule be revised such that the deadline is extended by 30 days. If Nike's request is granted, its reply brief would be due May 27, 2015. This Court has previously granted Nike's unopposed request for a 60-day extension of the time within which to file its opening brief, and Adidas's

unopposed request for a 71-day extension of the time within which to file its responsive brief.

As set forth in the accompanying declaration of counsel, there is good cause for a 30-day extension of the time within which Nike may file its reply brief. The existing briefing schedule conflicts with other professional obligations of counsel for Nike. Nike respectfully requests that its motion be granted. A proposed order is included herewith.

Dated: April 13, 2015

Respectfully submitted,

/s/ Kevin A. Goldman

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PLAINTIFFS-APPELLANTS' CERTIFICATE OF INTEREST

Counsel for Appellant Nike, Inc. certifies the following:

1. The full name of every party or *amicus* represented by us is:

Nike, Inc.

2. The names of the real party in interest represented by us is:

Not Applicable

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

WILMER CUTLER PICKERING HALE AND DORR LLP: Mark C. Fleming, Kevin A. Goldman, Andrea Jeffries, William F. Lee

BANNER & WITCOFF, LTD: Jonathan Pieter van Es, Thomas K. Pratt, H. Wayne Porter, Joseph M. Skerpon

Dated: April 13, 2015

/s/ Kevin A. Goldman

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No. 2014-1719

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

NIKE, INC.,

Appellant,

v.

ADIDAS AG,

Appellee.

DECLARATION OF KEVIN A. GOLDMAN IN SUPPORT OF APPELLANT'S UNOPPOSED MOTION FOR A 30-DAY EXTENSION OF TIME TO FILE ITS REPLY BRIEF

1. I am a counsel at Wilmer Cutler Pickering Hale and Dorr LLP ("WilmerHale"), counsel to Appellant Nike, Inc. ("Nike") in this appeal. I am submitting this declaration of counsel in support of Nike's motion for a 30-day extension of the time within which to file its reply brief.

2. Under the current briefing schedule, Nike must file its reply brief responding to the briefs of both Appellee Adidas AG ("Adidas") and Intervenor Director, U.S. Patent and Trademark Office ("PTO") on or before Monday, April 27, 2015. Nike respectfully requests an extension of 30 days. If granted, such an extension would permit Nike to file its reply brief on or before Wednesday, May 27, 2014. This Court has previously granted Nike's unopposed request for a 60-day extension of the time within which to file its opening brief, and Adidas's

unopposed request for a 71-day extension of the time within which to file its responsive brief.

3. The additional time requested herein is necessary to accommodate the professional schedules of Nike's counsel in earlier-filed matters. William F. Lee, principal counsel for Nike in this appeal, is scheduled to present argument at a hearing in *Apple Inc. v. Telefonaktiebolaget LM Ericsson*, No. 15-cv-0154 (N.D. Cal.) on April 15, 2015; and is scheduled to present argument at hearings in Los Angeles on May 4 and 13, 2015. Additionally, Mark C. Fleming is scheduled to present oral argument in the Supreme Court on April 29 in *Mata v. Holder*, No. 14-185; and both Mr. Lee and Mr. Fleming are preparing the reply brief in *Cubist Pharmaceuticals, Inc. v. Hospira, Inc.*, Nos. 2015-1197, -1204, -1259 (Fed. Cir.) that is due on May 1.

5. Pursuant to Federal Circuit Rule 27(a)(5), counsel for Nike has conferred with counsel for Adidas and the PTO regarding this motion. Adidas and the PTO do not oppose Nike's request for a 30-day extension of the time within which to file its reply brief and will not file a response.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 13, 2015

/s/ Kevin A. Goldman
KEVIN A. GOLDMAN

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No. 2014-1719

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

NIKE, INC.,

Appellant,

v.

ADIDAS AG,

Appellee.

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

ORDER

Upon consideration of Appellant Nike's Unopposed Motion For A 30-Day Extension of Time To File Its Reply Brief, IT IS HEREBY ORDERED THAT:

The motion is granted. Nike's Reply Brief is to be filed on or before May 27, 2015.

Dated:_____, 2015 _____

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CERTIFICATE OF SERVICE

I hereby certify that I filed the foregoing Appellant's Unopposed Motion For A 30-Day Extension Of Time To File Its Reply Brief with the Clerk of the United States Court of Appeals for the Federal Circuit via the CM/ECF system this 13th day of April, 2015, and served a copy on counsel of record by the CM/ECF system.

/s/ Kevin A. Goldman

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NOTE: This order is nonprecedential.

United States Court of Appeals for the Federal Circuit

NIKE, INC.,
Appellant

v.

ADIDAS AG,
Appellee

2014-1719

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

ON MOTION

ORDER

Upon consideration of the unopposed motion of appellant Nike, Inc. to extend time to file its reply brief by 30 days, until May 27, 2015,

IT IS ORDERED THAT:

The motion is granted. The appellant's reply brief is due on May 27, 2015.

FOR THE COURT

April 14, 2015

/s/ Daniel E. O'Toole
Daniel E. O'Toole
Clerk of Court

No. 2014-1719

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

NIKE, INC.,

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v.

ADIDAS AG,

Appellee.

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

REPLY BRIEF FOR APPELLANT NIKE, INC.

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May 27, 2015

Attorneys for Appellant Nike, Inc.

CERTIFICATE OF INTEREST

Counsel for Appellant Nike, Inc. certifies the following:

1. The full name of every party or *amicus* represented by us is:

Nike, Inc.

2. The names of the real party in interest represented by us is:

Not Applicable

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

WILMER CUTLER PICKERING HALE AND DORR LLP: Mark C. Fleming, Kevin A. Goldman, Andrea Jeffries, William F. Lee

BANNER & WITCOFF, LTD: Jonathan Pieter van Es, Thomas K. Pratt, H. Wayne Porter, Joseph M. Skerpon

Dated: May 27, 2015

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INTRODUCTION

Nike's FLYKNIT technology satisfied a long-felt need in the industry by streamlining the footwear manufacturing process and minimizing the amount of textile waste. Despite making repeated claims that Nike's innovation represents a trivial and obvious improvement, Adidas has never explained why no one attempted Nike's solution in the 20 years following the issuance of the closest prior art reference. The Board, for its part, rendered its obviousness determination based on unsupported factual findings and faulty legal analyses. It also denied Nike's motion to amend based on its interpretation of a regulation that conflicts with the controlling statute; neither Adidas nor the Director of the United States Patent and Trademark Office ("the PTO") has provided a valid basis for the Board's requirement that Nike prove that its proposed claims were patentable, and certainly not over prior art ***not*** of record.

Given these deficiencies, Adidas now asserts a variety of alternative arguments that either were not presented to the Board or that the Board explicitly rejected. Adidas's recourse to alternative arguments, which permeate its brief, runs afoul of the *Chenery* doctrine, which confines this Court's review of an agency decision to the grounds actually relied on by the agency. *See SEC v. Chenery Corp.*, 332 U.S. 194, 196 (1947) ("[A] reviewing court, in dealing with a determination or judgment which an administrative agency alone is authorized to

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make, must judge the propriety of such action solely by the grounds invoked by the agency. If those grounds are inadequate or improper, the court is powerless to affirm the administrative action by substituting what it considers to be a more adequate or proper basis."). Adidas's numerous alternative grounds of affirmance are accordingly not appropriately before the Court. While Nike explains why Adidas's arguments fail in any event, this Court need not and should not consider them.[1]

The Board's decision should be reversed or vacated.

ARGUMENT

I. THE BOARD INCORRECTLY DETERMINED THAT A COMBINATION OF PRIOR ART REFERENCES RENDER THE AMENDED CLAIMS OBVIOUS.

As Nike explained (Br. 21-34), the Board's obviousness determination is based on unsupported factual findings and is incorrect as a matter of law. Adidas and the PTO raise a number of arguments in defense of the Board's decision, primarily asserting alternative bases for affirmance. But this Court's "review of an administrative decision must be made on the grounds relied on by the agency," and not on "appellate counsel's post hoc rationalization." *In re Sang-Su Lee*, 277 F.3d 1338, 1345 (Fed. Cir. 2002). A "ground [that] does not appear in the Board's

[1] Adidas cites two cases discussing affirmance on alternative grounds, but both were appeals from ***district court*** judgments. Adidas Br. 45-46, 49-50 (citing *Jennings v. Stephens*, 135 S. Ct. 793, 798 (2015); *Shamrock Techs., Inc. v. Medical Sterilization, Inc.*, 903 F.2d 789, 791-92 (Fed. Cir. 1990)). Those cases do not govern this agency appeal; *Chenery* does.

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decision … may not be the basis for affirmance." *In re Thrift*, 298 F.3d 1357, 1367 (Fed. Cir. 2002) (citing *Chenery*, 332 U.S. at 196).

A. The Board Failed To Consider Objective Indicia Of Nonobviousness.

Nike presented the Board with detailed evidence of objective indicia of nonobviousness. Nike Br. 32-34; Adidas Br. 43; PTO Br. 18. Nike's FLYKNIT technology—hailed as a "quantum leap for flat knitting," A2141-42(40:22-41:3)(Frederick Dep.); A2026-34—improves the process for manufacturing textile footwear uppers by minimizing "cutting waste" and eliminating the additional production step of removing the upper from a larger web of material. A64(7:5-12); A1647-48(¶¶177-79). At a minimum, the Board was required to consider this evidence in rendering its decision, and its failure to do so is reversible error. *See, e.g.*, *Apple Inc. v. ITC*, 725 F.3d 1356, 1365 (Fed. Cir. 2013) ("[E]vidence relating to all four *Graham* factors—including objective evidence of secondary considerations—***must be considered*** before determining whether the claimed invention would have been obvious.");[2] Nike Br. 32-34.

Adidas concedes that the Board was required to consider evidence of objective indicia of nonobviousness and that the Board failed to address this evidence in its Final Written Decision. Adidas Br. 43-44. Nevertheless, Adidas urges the Court to infer that the Board considered the evidence because the parties

[2] Except as otherwise noted, each emphasis in this brief is added.

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addressed it. *Id.* The PTO similarly contends that the Board "implicitly" considered it. PTO Br. 18-19.

The mere fact that an issue was argued by the parties does not demonstrate that it was considered. In the cases relied on by Adidas, this Court found that "the required factual determinations ***were actually made***." *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) (explaining that district court's failure to provide its reasoning was not error where "the record establishes that the evidence was properly before ***and considered by*** the court").

Furthermore, the cases cited by Adidas involved appeals from district court decisions rather than agency proceedings. This Court "may affirm a judgment of a district court on any ground the law and the record will support so long as that ground would not expand the relief granted." *Glaxo Grp. Ltd. v. TorPharm, Inc.*, 153 F.3d 1366, 1371 (Fed. Cir. 1998). Agency cases are different, however; this Court "may not accept counsel's post hoc rationalizations for agency action. It is well-established that an agency's action must be upheld, if at all, on the basis ***articulated*** by the agency itself." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Automobile Ins. Co.*, 463 U.S. 29, 50 (1983) (*citing Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)); *see also Chenery*, 332 U.S. at 196. Since there is no dispute that the Board failed to articulate its required

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consideration of objective indicia of nonobviousness, its decision must at a minimum be vacated and remanded.

Adidas also argues that this Court should independently find a lack of nexus between Nike's invention and the long-felt need to minimize waste. Adidas Br. 44-45. But that argument is off-limits on appeal, as the Board did not adopt it.[3] *See Chenery*, 332 U.S. at 196. Even if the argument were properly before the Court—and it is not—it would fail on the merits, as Nike's knit-to-shape uppers plainly reduce material waste, as Adidas's own expert admitted. A2022-23(¶40)(Frederick) (acknowledging "the reduced waste resulting from making shoes by [the claimed] methods"); *see also* A1647-48(¶178)(Tonkel).

Finally, the PTO argues that the problem of "cutting waste" was solved by both Nishida and the Schuessler references, and therefore that there was no long-felt need to reduce waste in the footwear industry. PTO Br. 18-19. But contrary to the PTO's suggestion, the Board never articulated such a finding, *see* A37-38, and thus the Board's decision cannot be affirmed on that basis. *See Chenery*, 332 U.S. at 196. Furthermore, the PTO's claim is clearly incorrect—while Nishida and the Schuessler references address the issue of "cutting waste" in separate, diametrically-opposed ways, *see infra* pp. 7-8, neither "solved" the long-standing

[3] In its briefing below, Adidas did not dispute that Nike's invention addressed a long-felt need to reduce waste; it merely argued that the benefits conferred by Nike's invention would be offset by production losses. A1694-95; A2021.

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problem in the footwear industry. As Adidas itself concedes (Br. 41), "it is plainly evident that the problem of reducing manufacturing costs and material waste to create more efficient shoe manufacturing processes existed as of the filing date of the '011 patent."

B. There Was No Motivation To Combine Nishida With The Schuessler References.

The Board made two separate errors in finding a motivation to combine Nishida with the Schuessler references: it improperly placed the burden of proof on Nike rather than Adidas, and its finding was not supported by substantial evidence regardless of where the burden lies. Nike Br. 21-25. Adidas and the PTO raise several arguments in response; none has merit.

First, Adidas (Br. 39-40) and the PTO (Br. 11-12) argue that the America Invents Act gives the PTO authority to place the burden of proving patentability on a patent owner, on essentially the same basis that they defend the Board's *Idle Free* rule. *See* Adidas Br. 61-63; PTO Br. 11-17. The Board's actions, however, plainly violate 35 U.S.C. § 316, which states that "***the petitioner*** [in an IPR proceeding] shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence." 35 U.S.C. § 316(e). This provision applies to ***any*** "proposition of unpatentability"; no exception is made for unpatentability assertions made in response to a motion to amend. *See also infra* pp. 14-16.

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Second, Adidas argues, in the alternative, that the Board's failure to apply the correct burden of proof was harmless error, because the Board allegedly would have reached the same result had it applied the correct standard. Adidas Br. 40. Again, however, this argument misconstrues the nature of this Court's appellate role in an agency case, which does not permit affirmance under standards not applied by the agency. *Chenery*, 332 U.S. at 196. Indeed, remand is the appropriate course even when correcting a legal error in a district court decision. *See Pullman-Standard v. Swint*, 456 U.S. 273, 291-92 (1982).

This Court has repeatedly held the use of the incorrect burden of proof to be reversible error in similar contexts. In the reexamination context, where nonpatentability must be shown by a preponderance of the evidence (the same standard as here), this Court held that the Board committed reversible legal error by "plac[ing] the burden on [the patent owner] to prove that its claims were not obvious." *Rambus Inc. v. Rea*, 731 F.3d 1248, 1255 (Fed. Cir. 2013); *see also Price v. Symsek*, 988 F.2d 1187, 1194 (Fed. Cir. 1993) (holding in the interference context that "the erroneous burden of proof utilized by the Board worked against [the appellant's] interest, *i.e.*, it was more difficult to overcome than the proper burden of proof. Such a situation cannot ordinarily be classified as 'harmless.'").

Finally, Adidas contends (Br. 41) that a skilled artisan would have been motivated to combine Nishida with the Schuessler references because all three "are

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directed to solving the same problem, which is finding a way to form a three-dimensional wearable item in an efficient and economical way from a knitted two-dimensional textile element." According to Adidas, the mere fact that there was a known desire to reduce manufacturing costs and material waste provides the necessary rationale to combine the references. *Id.* 41-42. But this is improper hindsight. Only in retrospect, and with the benefit of Nike's patented invention, does it seem straightforward to combine these diametrically-opposed references, *i.e.*, the additive process of knitting-to-shape (Schuessler) and the subtractive process of creating patterns on a larger textile web (Nishida). As Nike demonstrated, but the Board failed to consider, the fact that no one combined these references for 20 years despite a long-felt need to reduce waste supports nonobviousness. *See, e.g.*, *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1356-57 (Fed. Cir. 2013) (reversing Board's obviousness finding where prior art references were "published decades before" the patent-at-issue: "The elapsed time between the prior art and the '013 patent's filing date evinces that the '013 patent's claimed invention was not obvious to try. Indeed this considerable time lapse suggests instead that the Board only traverses the obstacles to this inventive enterprise with a resort to hindsight.").

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C. Nishida Does Not Disclose An Aperture Formed By Omitting Stitches.

The Board further erred in finding that Nishida discloses an aperture for receiving laces that is formed by omitting stitches, as required by Nike's proposed claim 49. The PTO tellingly does not even address, much less deny, this error. PTO Br. 17-19. Adidas once again attempts to defend the Board's decision on grounds other than those the Board actually articulated—a gambit that again fails.

First, Adidas asserts (Br. 31) that Nike's argument is barred because it did not file a response challenging the Decision on Institution (but instead filed a motion to amend) and thus did not dispute that Nishida discloses all of the limitations of original claims 16, 19, and 20. But neither those claims nor any other original claims contained the limitation "apertures formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces." A66-67. That element was added for the first time in proposed claim 49, which was submitted with Nike's motion to amend. A1227. Accordingly, the "omitting stitches" argument could not have been made in connection with the initial Decision on Institution. Adidas's waiver assertion (Br. 34) is also incorrect; Nike's motion to amend expressly distinguished claim 49 from Nishida on the basis that "Nishida contains no description or suggestion of forming such openings *by* ***omitting stitches*** in the layout." A1233; *see also* A1610(¶107)(Tonkel). Adidas attempts to fault Nike for not restating this same argument "in its Reply"

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(Adidas Br. 33), but Nike was not required to make the argument ***twice*** in order to preserve it. *See Consolidation Coal Co. v. United States*, 351 F.3d 1374, 1378 (Fed. Cir. 2003) (issue preserved for appeal so long as lower court "fairly put on notice as to the substance of the issue" (internal quotation marks omitted)).

Second, Adidas argues that the Board "considered and agreed with adidas's and Dr. Frederick's explanation that ***Nishida discloses the use of holes for lacing***." Adidas Br. 34. But a finding that Nishida discloses "holes for lacing" is not responsive to claim 49, which additionally requires that the apertures be formed in the textile web ***by omitting stitches***. As Nike explained (Br. 27-28), none of the evidence cited in the Board's decision discloses this additional limitation.

Third, Adidas argues—for the first time on appeal—that claim 49's requirement of apertures "formed by omitting stitches" is a product-by-process limitation, and therefore may be disclosed by any apertures for receiving laces, regardless of how they were formed. Adidas Br. 35-36. Once again, however, Adidas's effort to shore up the Board's conclusion with different reasoning fails in this agency appeal; the Board did not base its decision on Adidas's new product-by-process argument, and this Court cannot affirm on that basis. *Chenery*, 332 U.S. at 196. Even if the argument were cognizable, however, process limitations properly distinguish prior art in cases where "the process imparts structural

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differences to the product." *Greenliant Sys., Inc. v. Xicor LLC*, 692 F.3d 1261, 1265 (Fed. Cir. 2012). Textile apertures that are knit to shape (*i.e.*, formed by omitting stitches) have a more stable structural configuration than apertures cut from a larger textile web. A18-19; A546(3:66-4:5)(Nishida); A1608-10(¶¶105-07)(Tonkel).

Fourth, Adidas contends that Dr. Frederick "detailed" Nishida's disclosures of apertures for receiving laces formed by omitting stitches, but Adidas tellingly does not quote any of Dr. Frederick's actual testimony. Adidas Br. 36. Adidas cites only two pages of a claim chart in Dr. Frederick's initial expert report, which nowhere says that Nishida's apertures were formed by omitting stitches; indeed, there would have been no reason to, since no original claim considered in that report contained the "omitting stitches" limitation. A191-92. Dr. Frederick filed a supplemental expert report in response to Nike's motion to amend, but he did not address whether Nishida disclosed apertures formed by omitting stitches. A2008-25. And when specifically asked about that limitation, Dr. Frederick conceded that Nishida did ***not*** disclose forming apertures in the textile layout. Nike Br. 29-30 (quoting A1517(150:10-17)(Frederick Dep.)).[4] The Board, for its part, simply

[4] Adidas asserted a different theory regarding claim 49 before the Board, alleging that Nishida disclosed the claimed apertures formed by omitting stitches merely by depicting holes for laces—holes that may be formed after the textile web has already been stitched. *See* A1698 (attorney argument unsupported by expert testimony).

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found that Nishida discloses knit lacing areas, not apertures formed by omitting stitches. A25.

Fifth, Adidas makes yet another new argument on appeal—that Nishida's disclosure of a "net-like woven or knitted structure" discloses apertures formed by omitting stitches that may be used to receive laces. Adidas Br. 36-37. But Nishida's net-like structure describes the stitching pattern of the textile itself, not the ***omission*** of stitches to create an aperture in the textile. A546(3:43-52). In any event, the net-like structure is not used for receiving laces—it covers the "toe area" of the upper. *Id.* Once again, Adidas's new argument cannot provide a basis to affirm the Board's decision, since the Board made no finding that the toe portion of Nishida could be used for receiving laces. *Chenery*, 332 U.S. at 196.

Finally, Adidas argues that Nishida discloses apertures in the lacing area of Figure 2, *i.e.*, apertures formed by omitting stitches before the upper is removed from the textile web. Adidas Br. 37-38. According to Adidas, the lacing apertures depicted in Figure 3 are simply "more prominent." *Id.* 37. A straightforward comparison of the two figures, however, makes plain that Figure 2 ***does not*** depict apertures for receiving laces in lacing areas 23 and 24 or elsewhere:

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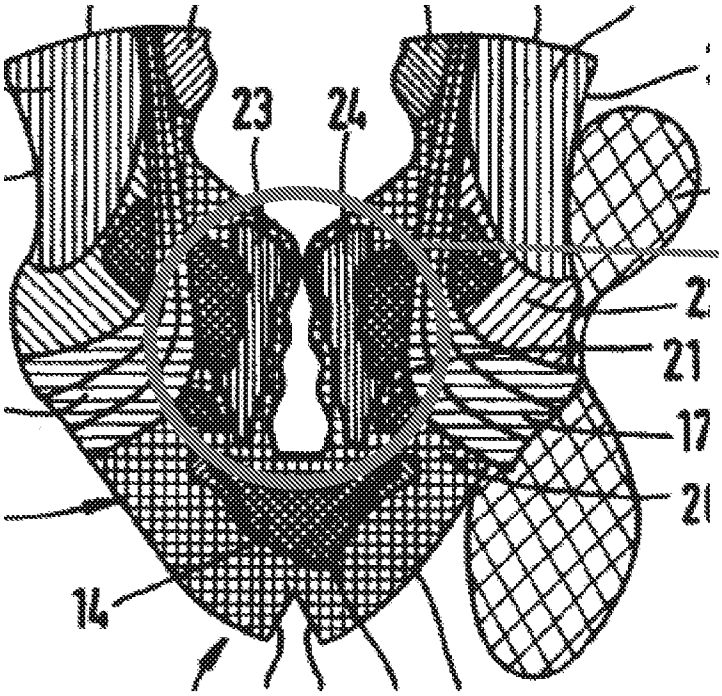
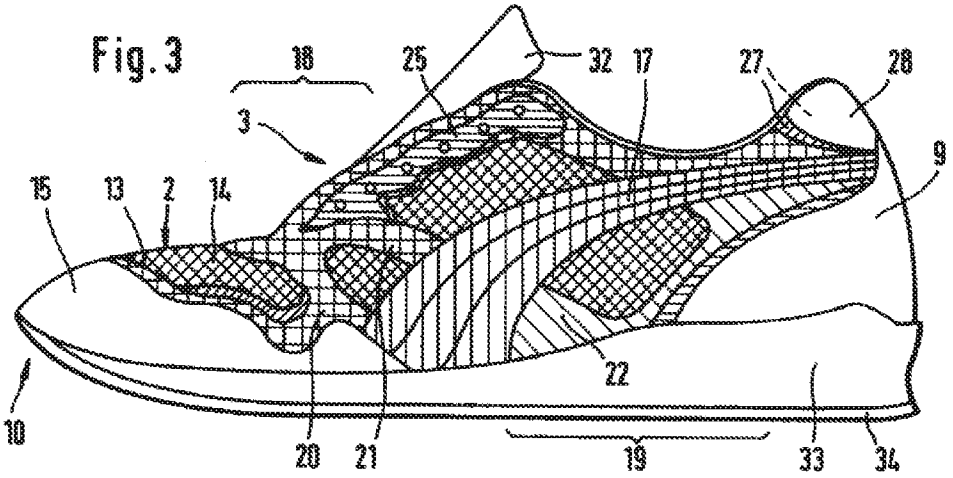


Figure 2 (excerpt)

No lacing apertures present, because apertures are punched through the textile, not formed by omitting stitches in the textile.



A542(Fig. 2)(Nishida)(annotation added); A543(Fig. 3)(Nishida). Figure 2 shows that, when the Nishida textile is originally cut from the web, it has ***no*** apertures in lacing areas 23 and 24. Lacing strips 25 are ***added*** later, and contain holes that can be used as stencils to punch out lacing apertures in the upper's lacing areas 23 and 24. A546(4:1-5, 4:31-38)(Nishida); A1610(¶107)(Tonkel). Accordingly, these two figures further confirm that—as Nike explained (Br. 26-28)—Nishida lacks

apertures formed by omitting stitches, and instead features apertures formed by punching holes into the lacing area after the upper is removed from the textile web.

II. THE BOARD IMPROPERLY PLACED THE BURDEN ON NIKE TO DEMONSTRATE THE PATENTABILITY OF THE AMENDED CLAIMS.

The Board legally erred in placing the burden on Nike to demonstrate the patentability of the proposed amended claims over both the prior art of record as well as additional prior art not of record.

First, as Nike explained (Br. 39-40), the Board's actions violated 35 U.S.C. § 316(e), which provides that "***the petitioner*** [in an IPR proceeding] shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence." Adidas does not even address this argument (Adidas Br. 39-40, 60-63), while the PTO contends that Section 316(e) should be interpreted as not applying to proposed amended claims under Section 316(d). PTO Br. 13. The statute's clear and unambiguous language does not bear the PTO's reading. Section 316(e) states that it governs the burden of proving unpatentability "[i]n an *inter partes* review instituted under this chapter," and Section 316(d) similarly states that the motion to amend process takes place "[d]uring an *inter partes* review instituted under this chapter." By its plain terms, Section 316(e) applies to any "proposition of unpatentability" in an *inter partes* review, including the unpatentability of proposed amended claims.

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The PTO argues, in the alternative, that even if Section 316(e) might otherwise control, Section 316(d)'s requirement that a patent owner move to amend, rather than add amended claims as a matter of right, indicates that Congress intended to shift the burden of proof on patentability back to the patent owner for proposed amended claims. PTO Br. 13-14; *see also* Adidas Br. 40, 61-62. But Section 316(d) says nothing about the burden of proof—that is addressed in Section 316(e) only. Instead, Section 316(d) provides the framework governing the ***scope*** of motions to amend, explaining that they must "propose a reasonable number of substitute claims" and that proposed amended claims "may not enlarge the scope of the claims of the patent or introduce new matter." 35 U.S.C. § 316(d)(1)(B), (3). Contrary to the PTO's suggestion, the mere fact that a patent owner must "move" to amend does not prove that the moving party bears the burden of proof on all related issues. Typically, the burden of proof does not shift depending on the procedural context. *See, e.g.*, *Medtronic, Inc. v. Mirowski Family Ventures, LLC*, 134 S. Ct. 843, 849 (2014) (burden of proving infringement remains with the patent holder even when the accused infringer is the plaintiff in a declaratory action); *Brown v. Barbacid*, 276 F.3d 1327, 1332-33 (Fed. Cir. 2002) (junior party in an interference always bears the burden of proving priority). The general framework set forth in Section 316(d) cannot override Congress's explicit

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requirement in Section 316(e) that the petitioner bear the burden of proving propositions of unpatentability in an *inter partes* review.

The PTO also asserts that Section 316(a)(9)—which provides that the Director shall prescribe regulations "setting forth standards and procedures for allowing the patent owner to move to amend the patent"—provides the PTO with the power to allocate the burden of proof to the patent owner. PTO Br. 12. But Congress's general delegation of authority did not authorize the Director to promulgate rules that violate other provisions of the statute; such an interpretation would impermissibly construe the Act as self-contradictory. *See FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 132-33 (2000) (courts must "interpret the statute as a coherent regulatory scheme and fit, if possible, all parts into [a] harmonious whole" (internal quotation marks and citation omitted)). Accordingly, the delegation of rulemaking authority under Section 316(a)(9) cannot be used to promulgate regulations that violate Section 316(e) or any other statutory provision.

Second, even if Section 316(e) did not govern motions to amend (though it plainly does), the PTO's own regulations provide no basis for requiring a patent owner to demonstrate the patentability of proposed amended claims over prior art ***not*** of record (the *Idle Free* rule). Nike Br. 37-39. To the contrary, the regulations set forth only two substantive grounds under which a motion to amend may be denied: "(i) [t]he amendment does not respond to a ground of unpatentability

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involved in the trial; or (ii) [t]he amendment seeks to enlarge the scope of the claims of the patent or introduce new subject matter." 37 C.F.R. § 42.121(a)(2).

The PTO and Adidas nevertheless invoke Section 42.20(c), which states that, in an *inter partes* review proceeding, "[t]he moving party has the burden of proof to establish that it is entitled to the requested relief." PTO Br. 15-16; Adidas Br. 61-62. But Section 42.20(c) is merely a procedural rule allocating the burden of proof in motion practice. It does not change the ***substantive requirements for a motion to amend***, which are set forth in Section 42.121, and do not include proving patentability over prior art not of record.

As Nike explained, the Board was not free to unilaterally impose, through its *Idle Free* decision, a new rule that patent owners must demonstrate the patentability of proposed amended claims over prior art not of record. Nike Br. 38-39. Such a substantive rule may be promulgated, if at all, only after notice-and-comment rulemaking. *Id.*

The PTO and Adidas do not dispute that the *Idle Free* rule is substantive, nor that it was promulgated via adjudication rather than notice-and-comment rulemaking. The PTO and Adidas both contend, however, that the *Idle Free* rule is merely the agency's interpretation of Section 42.20(c) and therefore entitled to deference under *Auer v. Robbins*, 519 U.S. 452 (1997). PTO Br. 11, 16-17; Adidas Br. 29-30, 61-62. But as the Supreme Court has held, "*Auer* deference is

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warranted only when the language of the regulation is ambiguous. … [Otherwise, t]o defer to the agency's position would be to permit the agency, under the guise of interpreting a regulation, to create a de facto new regulation." *Christensen v. Harris Cnty.*, 529 U.S. 576, 588 (2000). There is no relevant ambiguity in Section 42.20(c), and the *Idle Free* rule is precisely the type of impermissible "de facto new regulation" described in *Christensen*.[5]

The PTO and Adidas further argue that the *Idle Free* rule is necessary as a matter of policy, because "[i]f a patent owner were not required to make such a showing [of patentability over prior art not of record], an amended patent could be put in place with untested claims." PTO Br. 14; *see also* Adidas Br. 58. Whether the rule is good policy or not is beside the point. The Board lacks the ***power*** to promulgate substantive rules—such as the *Idle Free* rule—in the absence of notice-and-comment rulemaking. *See* 5 U.S.C. § 553; *Lincoln v. Vigil*, 508 U.S. 182, 195-96 (1993). In any event, the concerns raised by the PTO and Adidas regarding potentially "untested" claims are unfounded. In every *inter partes* review involving a motion to amend, the original claims have already been examined by the PTO during the initial prosecution and by the Board in its Decision on

[5] *Auer* is questionable even on its own terms, and Nike reserves the right to challenge its correctness. *See Decker v. Northwest Envtl. Def. Ctr.*, 133 S. Ct. 1326, 1339 (2013) (Roberts, C.J., joined by Alito, J., concurring) ("The bar is now aware that there is some interest in reconsidering [*Auer*.]"); *id.* at 1339-42 (Scalia, J., concurring in part and dissenting in part) (urging overruling *Auer*).

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Institution, and the Board must further evaluate the patentability of the proposed amended claims in its Final Written Decision. *See* 35 U.S.C. § 318(a) ("[T]he Patent Trial and Appeal Board shall 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)***."). Furthermore, patent owners are not permitted to propose amendments that broaden the scope of issued claims or otherwise add new matter, and every amendment must respond to a ground of unpatentability set forth by the Board. *See* 35 U.S.C. § 316(d); 37 C.F.R. § 42.121. Thus, far from being "untested," every proposed amended claim is subject to the Board's review and will not issue unless it is found to narrow the scope of the previously-issued claim and successfully traverse all of the grounds of unpatentability identified by the Board.

Finally, the PTO argues that the *Idle Free* rule is necessary because the petitioner may not be motivated to challenge the patentability of the amended claims. PTO Br. 15. Once again, such policy concerns do not justify the adoption of a substantive rule without compliance with binding notice-and-comment rulemaking procedures. *See* 5 U.S.C. § 553; *Lincoln*, 508 U.S. at 195-96. Further, it is clear that Congress ***intended*** that motions to amend be used to facilitate settlement in this manner. *See* 35 U.S.C. § 316(d)(2) ("Additional motions to amend may be permitted upon the joint request of the petitioner and the patent

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owner to materially advance the settlement of a proceeding under section 317."). Thus, the PTO's improperly-promulgated rule is designed to advance a policy goal that is at odds with the statutory scheme.

III. ADIDAS'S PROPOSED ALTERNATIVE BASES FOR AFFIRMANCE ARE NOT COGNIZABLE ON APPEAL AND FAIL IN ANY EVENT.

A. Adidas's Alternative Grounds Of Affirmance Are Not Properly Before The Court In This Agency Case.

Adidas argues that this Court may affirm the Board's decision on several additional grounds not relied on by the Board—that the claims are anticipated or obvious based on Nishida alone, and that the claims lack an adequate written description. Adidas Br. 45-55. Adidas once again does not confront *Chenery*, which flatly bars assertion of alternative grounds of affirmance on appeal from agency decisions. *Chenery*, 332 U.S. at 196. The Court should accordingly disregard them entirely.

Out of an abundance of caution, we address Adidas's arguments briefly on the merits, in order to assure the Court that—even if they were reachable on this appeal—they would provide no basis for rejecting Nike's amended claims.

B. The Amended Claims Are Neither Anticipated Nor Rendered Obvious By Nishida.

Adidas first asserts (Br. 46-47) that the Board failed to apply the broadest reasonable interpretation of the term "flat knit edges," and that under Adidas's proposed construction the claims would be anticipated by Nishida alone. Adidas

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would construe "flat knit edges" to encompass any type of edges of a flat knit textile, even if the edges themselves are not flat knit. But as this Court has repeatedly held, a claim's "broadest reasonable interpretation" is not its broadest conceivable interpretation; the claim still must be construed "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re American Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004); *see also In re Suitco Surface, Inc.*, 603 F.3d 1255, 1259-61 (Fed. Cir. 2010) ("[T]he PTO [does not have] an unfettered license to interpret claims to embrace anything remotely related to the claimed invention. Rather, claims should always be read in light of the specification and teachings in the underlying patent."); *In re Skvorecz*, 580 F.3d 1262, 1267 (Fed. Cir. 2009) ("The protocol of giving claims their broadest reasonable interpretation during examination does not include giving claims a legally incorrect interpretation. This protocol is solely an examination expedient, not a rule of claim construction. Its purpose is to facilitate exploring the metes and bounds to which the applicant may be entitled, and thus to aid in sharpening and clarifying the claims during the application stage, when claims are readily changed.").

Here, the Board considered the intrinsic and extrinsic evidence (including technical references and the testimony of both parties' experts) and concluded that "in the context of *this* claim (including surrounding claim language) and in the

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context of the Specification of *this* patent" the term "flat knit edges" referred specifically to edges that are themselves flat knit. A18-19; A33 (emphases in original).[6] In particular, the Board relied on the extrinsic evidence demonstrating that "flat knit" edges are structurally distinct from "cut" edges, and determined that within the context of the broader claim language—"flat knit edges free of surrounding textile structure such that the flat knit edges are not surrounded by textile structure from which the textile must be removed"—the term "flat knit edges" could not reasonably be construed to encompass "cut" edges. A18-19.

Adidas urges its broader proposed construction in light of its expert's testimony that a skilled artisan would consider the term "flat knit edges" to encompass cut edges. Adidas Br. 46-47. The Board did not credit that testimony, finding that it was inconsistent with the intrinsic disclosures in the specification as

[6] Adidas asserts (Br. 17) that the Board should not have considered the testimony of Nike's expert Mr. Tonkel because "he acknowledged that he does not qualify as a textile expert." Mr. Tonkel, however, explained that he has thirty years of in-depth expertise in footwear textiles, and merely noted that he is not an expert in non-footwear textiles. A1738-46(8:3-16:3). Adidas also suggests (Br. 17) that the Board should have discounted Mr. Tonkel's testimony because he did not identify written description support for Nike's proposed construction, but in fact, Mr. Tonkel explained how Nike's proposed construction is fully supported by the originally filed application that became the '011 patent. *See* A1571-76(¶¶36-42); A1586-90(¶¶61-67); *see also infra* pp. 24-29 (discussing Adidas's written description arguments).

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well as the additional extrinsic evidence submitted by Nike. A18; A33.[7] Particularly in light of this Court's deference to the Board's factual determinations, Adidas's expert's testimony is insufficient to overturn the Board's claim construction. *See In re Cuozzo Speed Techs., LLC*, 778 F.3d 1271, 1282-83 (Fed. Cir. 2015) (holding that in an IPR appeal, this Court "review[s] the Board's claim construction according to the Supreme Court's decision in *Teva Pharmaceuticals U.S.A., Inc. v. Sandoz, Inc.* …. We review underlying factual determinations concerning extrinsic evidence for substantial evidence and the ultimate construction of the claim de novo." (citation omitted)).

Adidas next argues (Br. 48-49) that the Board's decision should be affirmed based on the alternative theory that, under the Board's (correct) construction, the proposed amended claims are rendered obvious by Nishida alone, "for the very same reasons a [skilled artisan] would find the statements in the '011 patent regarding the advantages of manufacturing an upper as a single textile element to suggest forming a 'knit to shape' textile element." Adidas Br. 48. But the disclosures of the '011 patent are plainly not the same as Nishida's. As the Board correctly found, the '011 patent actually discloses knit-to-shape uppers. A29-31.

[7] Additionally, as Nike explained below, Adidas's expert Dr. Adanur has never been involved in the footwear industry and thus does not meet Adidas's own definition of a "person of ordinary skill in the art." A2057-58; A2177-90(17:10-30:23)(Adanur Dep.).

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By contrast, Nishida merely identifies the long-felt need to reduce waste in the manufacturing process and suggests addressing the problem by creating more efficient patterns of uppers to be cut from larger textile webs. A545(2:26-32)(Nishida). Nishida neither discloses nor suggests abandoning the pattern-making process and adopting a separate manufacturing process in which uppers are knit to shape in the first instance (*i.e.*, a completely different and unrelated solution to the "cutting waste" problem). Accordingly, nothing in Nishida renders the amended claims obvious.

C. The Amended Claims Are Supported By Adequate Written Description.

Adidas also asserts that the amended claims lack sufficient written description. Adidas Br. 49-55. In addition to once again violating the *Chenery* doctrine, this argument fails on the merits. As the Board correctly explained—based on the patent disclosures themselves as well as the consistent testimony of both parties' experts—the '011 patent provides a written description of footwear uppers that may be manufactured with flat knit edges as described in the amended claims. A21-23.

Notably absent from Adidas's argument is citation to any testimony from its experts. Whether the specification supports a claim is a fact issue assessed from the perspective of a person of ordinary skill in the art and reviewed for substantial evidence. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351-52 (Fed.

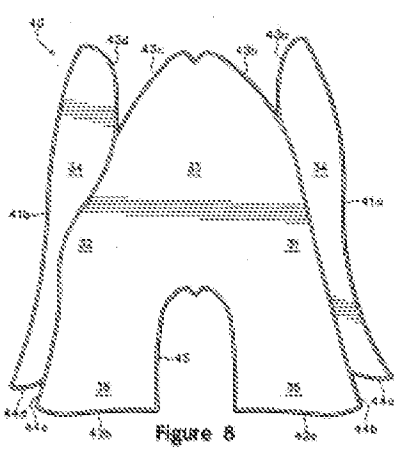
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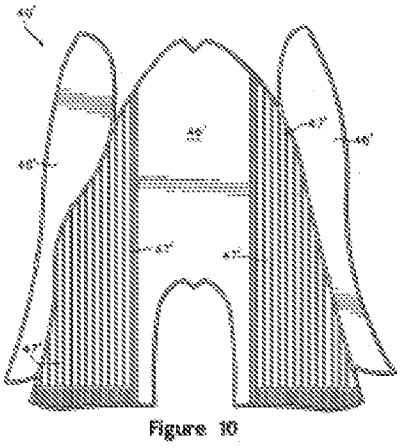
Cir. 2010) (en banc). Adidas relies only on attorney argument, which is not evidence. *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009).

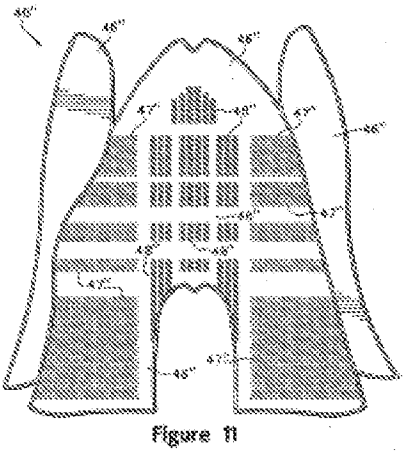
A patent's specification need not provide word-for-word support for a claim in order to provide an adequate written description, and even figures alone may satisfy the written description requirement. *Cooper Cameron Corp. v. Kvaerner Oilfield Prods., Inc.*, 291 F.3d 1317, 1322 (Fed. Cir. 2002). Furthermore, the specification need not present every embodiment or permutation of the invention, and the claims are not limited to a preferred embodiment. *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998).

Here, the specification explains that the disclosed uppers may be manufactured by a variety of processes, including flat knitting. A63-64(6:66-7:12) ("[V]arious specific sub-types [of weft knitting] that may be utilized to manufacture a textile include circular knitting and *flat knitting*. … Textile element 40 may be formed through any of the mechanical processes discussed above."); A503-04(¶¶42-43) (same language in original application); *see also* A514-19 (original claims 19, 38, and 65 describing uppers formed by flat knitting). Further, Figures 8, 10 and 11 show configurations for the claimed textile element that have flat knit edges without surrounding textile structure:

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Figure 8


Figure 10


Figure 11

A54-57; A527-530. This is contrasted with Figure 9, which depicts an upper that must be removed from surrounding textile material:

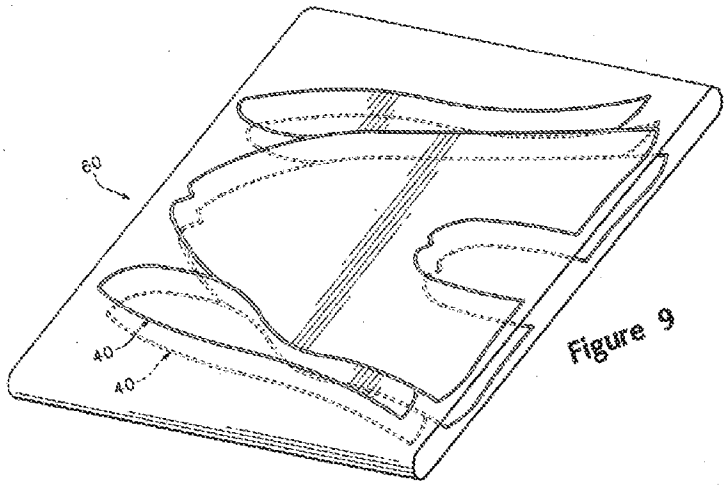


Figure 9

A55; A528. As Mr. Tonkel explained, Figures 8, 10 and 11 along with the original claims and specification convey to a skilled artisan that the '011 patent application described a textile element that is knit to shape, as claimed in amended claim 47. A1571-76(¶¶36-42); A1586-90(¶¶61-67); *see also* A1587(¶63) ("[T]he '011 application makes it clear that the invention also includes embodiments in which

uppers include textile elements that are not formed as part of larger textile structures from which they must be removed." (emphasis in original)).

The Board, moreover, did not base its decision solely on the patent specification and the testimony of Mr. Tonkel, but also on the testimony of Adidas's own expert. *See* A21-23. As the Board explained, Dr. Frederick conceded that "[t]he '011 Patent ***describes*** that the textile element may be formed ***any number of ways*** with one or more yarns that are mechanically manipulated ***using a variety of existing processes***." A146(¶28)(Frederick); *see also* A162(¶53)(Frederick) ("Significantly, the '011 Patent states that the textile element may be formed ***through any of the mechanical processes discussed in the specification***."); A1483(116:11-20)(Frederick Dep.) (admitting that the '011 patent teaches that the textile depicted in Figure 8 could be made on a flat knit machine and thus would have flat knit edges); A2018-19(¶31)(Frederick) (explaining that Nike FLYKNIT uppers are "made on a flat knit machine … according to the methods described in the '011 Patent"); A2149(48:10-23)(Frederick Dep.) (same). The Board's decision—based on its findings with respect to the patent's disclosures and the testimony of both parties' experts—is clearly supported by substantial evidence.

Adidas's efforts to avoid this clear written description support lack merit.

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First, Adidas contends that the term "flat knit edges" should be construed to be a "negative limitation" (*i.e.*, to require the absence of "cut" edges rather than the affirmative presence of "flat knit" edges) and requires more explicit written description support. Adidas Br. 50-53. The disclosures described above would be more than enough to satisfy the written description requirement even under such a heightened standard—indeed, the mere depiction of "flat knit edges" in the figures is sufficient. *See Cooper Cameron*, 291 F.3d at 1322. But the "flat knit edges" limitation is plainly a positive limitation, not a negative one. As the Board correctly found, "flat knit" edges are structurally different from "cut" edges, and the claims use the term "flat knit edges" to refer specifically to edges that are themselves flat knit. A18-19; A29-31.

Second, Adidas argues that Figures 8, 10 and 11 do not depict flat knit textiles with flat knit edges, but rather textiles that have been cut from a larger web as in Figure 9. Adidas Br. 52-53. Once again, Adidas bases its claim on attorney argument rather than the testimony of its own experts. *See id.* Adidas also contends that Nike's expert Mr. Tonkel admitted that Figures 8, 10, and 11 could represent a textile formed by the process depicted in Figure 9, *see id.*, but he actually testified to the opposite, stating that Figures 8, 10, and 11 were ***not*** produced by "a cutting process." A1819-20(89:22-90:6). He further explained that "what's shown in figure 9 could also be represented by figure 8 once it's

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removed. However, ***the edges would obviously be very different.***" A1820(90:6-9).

Finally, Adidas reasserts its argument that the '011 patent's disclosure is the same as Nishida's. Adidas Br. 55. But the disclosures plainly are not equivalent. *See supra* pp. 23-24. As the Board found, Nishida discloses uppers that are cut from a larger textile web, while the '011 patent discloses uppers with flat knit edges. A29-31; A36-37. There is no inconsistency in the Board's decision on this point, and its finding that the '011 patent provides adequate written support for the amended claims is supported by substantial evidence.

* * *

Adidas's need to resort to improper, *Chenery*-barred alternative grounds of affirmance speaks volumes. The Board's decision is not defensible on its own terms, and that is all that the Court need decide to resolve this appeal.

CONCLUSION

The Board's decision denying Nike's motion to amend the '011 patent should be reversed or, alternatively, vacated and remanded for further proceedings.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I filed the foregoing Reply Brief for Appellant Nike, Inc. with the Clerk of the United States Court of Appeals for the Federal Circuit via the CM/ECF system this 27th day of May, 2015, and served a copy on counsel of record by the CM/ECF system.

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CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 32(a)(7)(C), the undersigned hereby certifies that this brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B) and Circuit Rule 32(b).

1. Exclusive of the exempted portions of the brief, as provided in Fed. R. App. P. 32(a)(7)(B), the brief contains 6,514 words.

2. The brief has been prepared in proportionally spaced typeface using Microsoft Word 2010 in 14 point Times New Roman font. As permitted by Fed. R. App. P. 32(a)(7)(C), the undersigned has relied upon the word count feature of this word processing system in preparing this certificate.

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May 27, 2015

No. 2014-1719

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

NIKE, INC.,

Appellant,

v.

ADIDAS AG,

Appellee.

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

JOINT APPENDIX
(A1-A2488)

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Decision on Institution of *Inter Partes* Review, Paper No. 18 (May 17, 2013)	A1148-A1185
Order on Conduct of the Proceeding 37 C.F.R. § 42.5, Paper No. 22 (Jun. 19, 2013)	A1200-A1203
Nike, Inc.'s Motion to Amend U.S. Patent 7,347,011, Paper No. 31 (Aug. 19, 2013)	A1225-A1243
Exhibit 2009, Transcript of the Deposition of Edward C. Frederick, taken July 23, 2013	A1368-A1554
Exhibit 2010, Declaration of Raymond F. Tonkel (Aug. 19, 2013)	A1555-A1655
Exhibit 2011, Excerpts from *Man-Made Fiber and Textile Dictionary* (4th ed. 1985)	A1656-A1667
Petitioner's Opposition to Patent Owner Motion to Amend, Paper No. 37 (Nov. 12, 2013)	A1684-A1703
Exhibit 1015, Transcript of Cross Examination Deposition of Raymond Tonkel, taken November 5, 2013	A1731-A1844
Exhibit 1016, Declaration of Sabut Adanur Ph.D. (Nov. 12, 2013)	A1845-A1901

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Exhibit 1020, U.S. Patent No. 2,178,941, issued November 7, 1939	A1995-A1997
Exhibit 1021, U.S. Patent No. 2,150,730, issued March 14, 1939	A1998-A2001
Exhibit 1023, Supplemental Declaration of Edward C. Frederick, Ph.D. (Nov. 12, 2013)	A2008-A2025
Exhibit 1024, Billy Hunter, Editor Viewpoint: Nike Flyknit: Quantum Leap for Flat Knitting	A2026-A2030
Exhibit 1025, Billy Hunter, Editor, Nike Flyknit: Ready, Steady, Go	A2031-A2035
Nike's Reply to Petitioner's Opposition to Motion to Amend U.S. Patent 7,347,011, Paper No. 44 (Dec. 11, 2013)	A2055-A2063
Exhibit 2020, Transcript of Second Cross-Examination Deposition of Edward C. Frederick, taken December 3, 2013	A2102-A2160
Exhibit 2021, Transcript of Cross-Examination Deposition of Sabit Adanur, taken December 3, 2013	A2161-A2299
Order on Trial Hearing 37 C.F.R. § 42.70, Paper No. 50 (Jan. 13, 2014)	A2328-A2331
Notice of Appeal to the United States Court of Appeals for the Federal Circuit by Patent Owner Nike, Inc., Paper No. 61 (Jun. 30, 2014)	A2484-A2488

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Trials@uspto.gov
571-272-7822

Paper 60
Entered: April 28, 2014

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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adidas AG
Petitioner

v.

NIKE, Inc.
Patent Owner

Case IPR2013-00067
Patent 7,347,011 B2

Before JOSIAH C. COCKS, MICHAEL J. FITZPATRICK, and JAMES B. ARPIN, *Administrative Patent Judges.*

ARPIN, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

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I. INTRODUCTION

On December 10, 2012, adidas AG ("Petitioner") filed a revised petition (Paper 7) challenging claims 1-46 of Patent No. US 7,347,011 B2 (Ex. 1002, "the '011 Patent"). Petitioner relied upon the following prior art references:

Glidden	US 2,147,197	Feb. 14, 1939	(Ex. 1007)
McDonald	US 2,314,098	Mar. 16, 1943	(Ex. 1008)
Whiting	US 2,641,004	June 9, 1953	(Ex. 1009)
Shiomura	US 4,785,558	Nov. 22, 1988	(Ex. 1011)
Curley	WO 90/03744	Apr. 19, 1990	(Ex. 1010)
Osamu	JP H06-113905	Apr. 26, 1994	(Ex. 1006)
Nishida	US 5,345,638	Sep. 13, 1994	(Ex. 1005)

On February 28, 2013, Nike, Inc. ("Patent Owner") filed a patent owner preliminary response (Paper 12). In a decision to institute (Paper 18) issued May 17, 2013, we[1] instituted *inter partes* review of all of the challenged claims as to the following grounds for review:

claims 1-16, 19-34, 36, and 39-46 as anticipated by Nishida;

claims 16-18 as anticipated by Glidden;

claims 1-16 and 19-46 as obvious over Nishida; and

claims 16-18 as obvious over Glidden.

On August 18, 2013, Patent Owner filed a motion to amend (Paper 31), accompanied by certain testimony of Patent Owner's expert, Dr. Tonkel

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[1] After issuance of the decision to institute, Judge Cocks replaced Judge Tierney as the administrative patent judge managing this proceeding. Paper 30.

(Ex. 2010), but elected not to file a patent owner response. In the scheduling order (Paper 19, 2-3), Patent Owner had been cautioned that any arguments for patentability not raised in the patent owner response are deemed waived. On November 12, 2013, Petitioner filed an opposition (Paper 37) to the motion to amend, including three additional exhibits: declaration of Sabit Adanur Ph.D. (Ex. 1016) and Patent Nos. US 2,178,941 (Ex. 1020, "Schuessler I") and US 2,150,730 (Ex. 1021, "Schuessler II"). On December 11, 2013, Patent Owner filed a reply (Paper 44) to Petitioner's opposition to the motion to amend.

On January 7, 2014, Petitioner filed a motion to exclude evidence (Paper 49). Specifically, Petitioner moved to exclude (1) certain testimony elicited on cross-examination of Petitioner's expert, Dr. Frederick (Ex. 2009 (deposition testimony of Dr. Frederick)), as allegedly beyond the scope of Dr. Frederick's direct testimony (Ex. 1001 (declaration of Dr. Frederick)); and (2) certain testimony of Patent Owner's expert, Dr. Tonkel, which allegedly relied on the challenged, cross-examination testimony of Dr. Frederick. On January 21, 2014, Patent Owner filed Patent Owner's opposition (Paper 51) to Petitioner's motion to exclude evidence; and, on January 28, 2014, Petitioner filed Petitioner's reply (Paper 54) to Patent Owner's opposition to Petitioner's motion to exclude evidence.

Both parties requested oral argument. Papers 47 and 48. In the trial hearing order (Paper 50), we gave each party thirty (30) minutes to argue its case. Because Patent Owner did not file a patent owner response, we ordered (1) that the parties would not present arguments regarding whether

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original claims 1-46 are unpatentable based on the instituted grounds and (2) that Patent Owner, rather than Petitioner, would argue first. Paper 50, 2. The oral hearing was conducted on February 10, 2014.[2]

We have jurisdiction under 35 U.S.C. § 6(c). This final written decision is entered pursuant to 35 U.S.C. § 318(a).

For the reasons that follow, the portion of Patent Owner's motion to amend requesting cancellation of claims 1-46[3] is *granted*; however, the portion of the motion requesting entry of substitute claims 47-50 is *denied*.

Petitioner's motion to exclude evidence is *dismissed* as moot.

A. Related Proceedings

Petitioner does not identify related proceedings. Paper 7, 1. Patent Owner identifies three related patents, identified by Patent Nos. US 7,814,598 B2; US 8,042,288 B2, and US 8,266,749 B2; and one related U.S. patent application, identified by U.S. Patent Application No. 13/413,233. Paper 9, 2.

B. The '011 Patent

The '011 Patent relates to articles of footwear having a textile "upper." Ex. 1002, col. 1, ll. 7-10. In particular, the patent describes articles of footwear having an upper incorporating a knitted textile element and having a sole structure secured to the upper. *Id.* at col. 3, ll. 20-47.

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[2] A transcript of the hearing is included in the record as Paper 59.

[3] *See* Paper 31, 1.

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Conventional articles of athletic footwear may include two primary elements: an upper and a sole structure. *Id.* at col. 1, ll. 12-15. The upper may form a void on the interior of the footwear for receiving a wearer's foot, and the upper may extend over the instep and toe areas, along the medial and lateral sides, and around the heel area of the wearer's foot. *Id.* at ll. 30-35. The upper may be formed of multiple layers of materials, which may be selected for properties of wear resistance, flexibility, and air permeability. *Id.* at ll. 43-50. Thus, different areas of the exterior layer of the upper may be formed of different materials with differing properties. *Id.* at ll. 51-60. In that regard, the '011 Patent explains that:

> A textile may be defined as any manufacture from fibers, filaments, or yarns characterized by flexibility, fineness, and a high ratio of length to thickness. *Textiles generally fall into two categories.* The first category includes textiles produced directly from webs of filaments or fibers by randomly interlocking to construct non-woven fabrics and felts. The second category includes textiles formed through a mechanical manipulation of yarn, thereby producing a woven fabric, for example.

Id. at col. 2, ll. 6-14 (emphasis added). Techniques for the mechanical manipulation of yarn into a textile include weaving (e.g., producing a woven material) and knitting (e.g., producing a knitted material). *Id.* at ll. 36-46. Further, textiles for uppers may be formed of weft or warp, woven or knitted materials. *Id.* at ll. 40-41; *see also id.* at col. 3, ll. 30-32 (describing weft knitted and warp knitted "textile elements").

Figure 8 of the '011 Patent is reproduced below.

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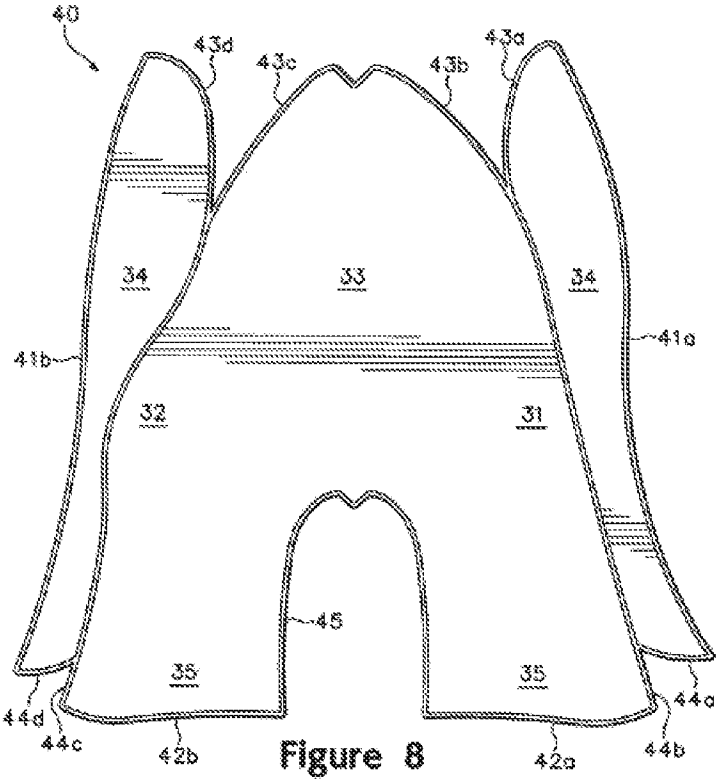


Figure 8

Figure 8 illustrates an embodiment of an upper according to the '011 Patent. *Id.* at col. 5, l. 58-col. 6, l. 65. Textile element 40 is a single material element with a unitary (i.e., one-piece) construction. *Id.* at col. 5, ll. 38-41; *see also id.* at figs. 10 (depicting textile element 40′) and 11 (depicting textile element 40″). Consequently, textile element 40 is configured, such that portions of the textile element are not joined together with seams or other connections. *Id.* at col. 5, ll. 38-41; col. 6, ll. 41-46. Edges 41a-44d, which are *free* in Figure 8, are joined together as shown in Figures 3-5 to form seams 51-54, thereby forming at least a portion of a void for receiving the foot. In contrast, lateral region 31, medial region 32, instep

region 33, lower regions 34, and heel regions 35 together have a unitary construction without seams (*id.* at col. 5, ll. 44-57; col. 6, ll. 47-50).

Figure 11 of the '011 Patent is reproduced below.

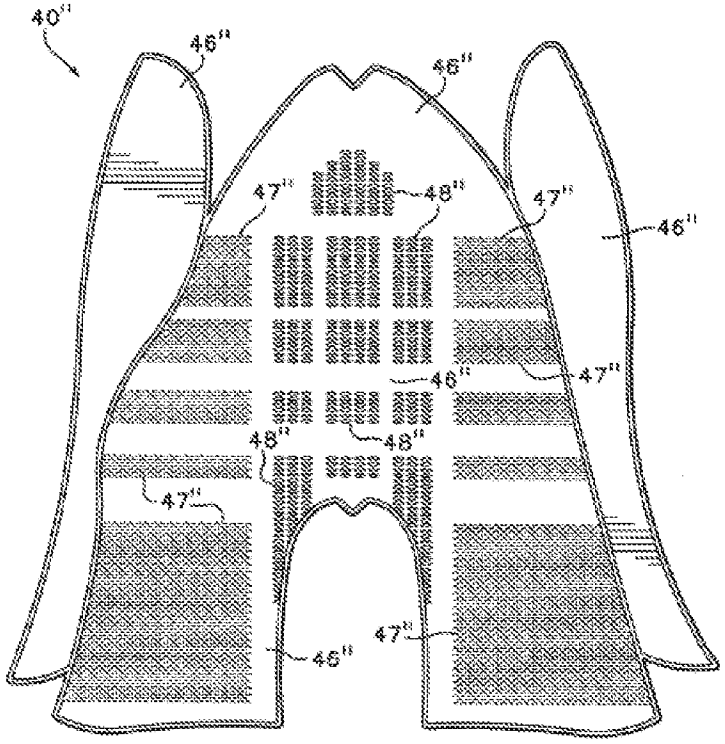


Figure 11

Figure 11 illustrates another embodiment of an upper according to the '011 Patent. *Id.* at col. 9, l. 36-col. 10, l. 14. Textile element 40″ includes three different areas with three different textures. *Id.* at col. 9, ll. 38-39. First texture 46″ is generally smooth and extends in strips across lateral region 31, medial region 32, and instep region 33 of the upper. *Id.* at ll. 39-42. In addition, textile element 40″ includes second texture 47″ and third texture 48″. *Id.* at ll. 42-46. Moreover, the '011 Patent describes that:

> The different textures 46″-48″ are formed *by merely varying the type of stitch formed* by the wide-tube circular knitting machine at each location of textile element 40″. Textures 46″-48″ may exhibit aesthetic differences, or the differences may be structural. *For example, the degree of stretch in areas with textures 46"-48" may be different, or the wear resistance of the areas may vary depending upon the stitch utilized.* The air-permeability of textile element 40‴ may also vary in the different areas.

Id. at ll. 46-54 (emphases added). Similarly, the type of yarn used in different areas may impart different properties to each area. *Id.* at col. 9, l. 65-col. 10, l. 14. Thus, the textures and properties of different areas of the upper may be varied by altering the stitching or yarn used in those areas.

C. Status of the Claims

Of the challenged claims, claims 1, 16, 24, 36, and 44 are independent. Independent claims 1, 24, and 36 recite similar limitations describing the formation of a void to receive the foot, and independent claims 16 and 44 recite similar limitations describing the unitary construction of the textile element. As to the dependent claims, claims 2-15 depend from claim 1, claims 17-23 depend from claim 16, claims 25-35 depend from claim 24, claims 37-43 depend from claim 36, and claims 45 and 46 depend from claim 44. In its motion to amend, Patent Owner states that "[i]ssued claims 1-46 are cancelled" (Paper 31, 1), and proposes four (4) substitute claims, claims 47-50, based on original claims 16, 19, and 20 (*id.*

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at 1-2) . The substitute claims are reproduced below:[4]

> Claim 47. (Substitute for independent claim 16) An article of footwear comprising
>
> an upper incorporating a [weft-knitted] 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.
>
> 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 configuration 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

[4] Subject matter deleted from original claims 16, 19, and 20 is enclosed by brackets; subject matter added to those claims is underlined.

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> [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.
>
> Claim 50. (Substitute for dependent claim 20) The article of footwear recited in claim [16] 47, wherein the [weft-knitted] 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.

Paper 31, 1-2. Thus, Patent Owner proposes amending original claim 16 to recite one of two sub-types of a *weft-knitted* textile element, namely a *flat knit* textile element. Paper 31, 1. Further, substitute claim 47 recites a negative limitation regarding the flat knit edges in terms of their method of manufacture. *See* Paper 37, 4; Paper 59, 20-21 and 23-25. Specifically, the "flat knit edges" are themselves flat knit and *not* cut from a flat knit textile. Paper 37, 9. Thus, the upper is recited as "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" (emphases added). Finally, some of the "flat knit edges" of the upper are joined to form an ankle opening. *Id.* at 10.

II. DISCUSSION

Because Patent Owner did not file a response to the petition, we focus our discussion on Patent Owner's motion to amend. As noted above, in the motion to amend, Patent Owner requests the cancellation of claims 1-46 and

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the entry of one independent substitute claim, claim 47, and three dependent substitute claims, claims 48-50. Paper 31, 1-2. In support of its motion, Patent Owner filed a declaration of Dr. Tonkel (Ex. 2010).

An *inter partes* review is more adjudicatory than examinational, in nature. *See Abbott Labs. v. Cordis Corp.*, 710 F.3d 1318, 1326 (Fed. Cir. 2013). A *motion* to amend in an *inter partes* review is not itself an amendment. As the moving party, Patent Owner bears the burden of establishing that it is entitled to the relief requested. 37 C.F.R. § 42.20(c). Thus, Patent Owner's proposed substitute claims are not entered automatically, but may be entered upon Patent Owner's having demonstrated the patentability of the substitute claims.

A. Claim Construction

Claim construction is an important step in a patentability determination. *Medichem, S.A. v. Rolabo, S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003) ("Both anticipation under § 102 and obviousness under § 103 are two-step inquiries. The first step in both analyses is a proper construction of the claims. . . . The second step in the analyses requires a comparison of the properly construed claim to the prior art." (internal citations omitted)). Thus, a motion to amend must identify how the proposed substitute claims are to be construed, especially when the proposed substitute claims introduce new claim terms or features. *See Research in Motion Corp. v. MobileMedia Ideas LLC*, IPR2013-00016, Paper 32, 6. The motion to amend also must explain how the construed claim is distinguishable over the art.

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Neither Patent Owner nor Petitioner challenges our interpretation of certain terms of claim 16, as set forth in the decision to institute, which terms also appear in substitute claims 47-50. Paper 18, 10-17. The interpretations of those terms are adopted for purposes of this final decision. In particular, in the decision to institute, we construed expressly the claim terms: a "weft-knitted textile element," a "flat-knitted textile element," and "unitary construction." Paper 18, 11-15. Although the original claims are no longer at issue, the interpretation of terms in the decision to institute is relevant to the interpretation of those terms in the substitute claims.

1. A Single Type of Textile

Independent claims 1, 24, and 36 recite that a textile element incorporates "a single type of textile." In its petition, Petitioner pointed out that "[t]extile element 40 is primarily formed from one or more yarns that are mechanically-manipulated through either an interweaving, intertwining and twisting, or interlooping process." Paper 7, 10 (quoting '011 Patent, col. 6, ll. 51-54). "A single type of textile" is not defined expressly in the Specification of the '011 Patent. Nevertheless, we noted that a pertinent definition of the term "textile" is "any cloth or goods produced by weaving, knitting, or felting." RANDOM HOUSE WEBSTER'S COLLEGE DICTIONARY 1351 (2nd Random House ed. 1996) (Ex. 3001); *cf.* Ex. 1002, col. 2, ll. 6-14 (defining "textiles"). In addition, the term "textile" is defined more broadly as "[a] material made of natural or artificial fibers and used for the manufacture of items such as clothing or furniture fittings." MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 1911 (4th ed. 1989)

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(Ex. 3002). As noted above, the '011 Patent states that textiles generally fall into two categories: fabrics formed of randomly locked filaments or fibers, such as felts; and fabrics formed of mechanically manipulated yarn, such as woven or knitted fabrics. Ex. 1002, col. 2, ll. 9-14.

The '011 Patent describes various techniques for mechanically manipulating yarn into woven fabrics or textiles, including interweaving (e.g., weaving), intertwining and twisting (e.g., braiding and knotting), and interlooping (e.g., knitting). *Id.* at ll. 36-46. In the decision to institute, we noted that claim 16 recites that the "textile element" is "knitted" and, in particular, "weft-knitted." Paper 18, 11-13.

2. Weft-Knitted Textile Element and Flat-Knitted Textile Element

According to Patent Owner, substitute claim 47 incorporates the limitations of challenged, independent claim 16. Paper 31, 1. In its petition, Petitioner argued that the terms "weft-knitted" and "flat-knitted" are well-known in the art. Paper 7, 10. We agreed.

As noted above, the Specification of the '011 Patent describes that various textile types (e.g., weft knitting textiles) and sub-types (e.g., circular and flat knitted) may be used to manufacture textile elements for incorporation into the uppers of the claimed articles of footwear. Ex. 1002, col. 6, l. 66-col. 7, l. 10. In the "Detailed Description of the Invention" portion of the Specification, the '011 Patent further describes that:

> A variety of mechanical processes have been developed to manufacture a textile. *In general, the mechanical processes may be classified as either warp knitting or weft knitting.* With regard to warp knitting, various specific *sub-types* that may be

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> utilized to manufacture a textile include tricot, raschel, and double needle-bar raschel (which further includes jacquard double needle-bar raschel). *With regard to weft knitting, various specific sub-types that may be utilized to manufacture a textile include circular knitting and flat knitting.* Various types of circular knitting include sock knitting (narrow tube), body garment (seamless or wide tube), and jacquard.

Id. at col. 6, l. 66-col. 7, l. 10 (emphases added).

Although the '011 Patent does not include a definition of either the term "weft knitting" or "warp knitting," a pertinent definition of "weft knitting" is "[a] knitting process in which *a continuous yarn* is carried *in crosswise rows*." MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS at 2054 (Ex. 3002; emphases added); *see also* Ex. 1001 ¶ 56 (reproducing H. Eberle et al., CLOTHING TECHNOLOGY, Sec. 3.3.1 (3rd English ed. 2002) (weft knitted fabric "[m]ay be made from a single yarn")). By comparison, a pertinent definition of the term "warp knitting" is "[a] knitting process in which *a group of yarns form rows running lengthwise* by an interlocking process." MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS at 2045 (Ex. 3002; emphasis added). Similarly, flat knitting is described in the '011 Patent as a sub-type of weft knitting, in which the textile is knit as a sheet or flat piece of textile (Ex. 1002, col. 7, ll. 5-8), in contrast to, for example, circular knitting, which is another sub-type of weft knitting (*see* Ex. 1002, fig. 9).

In its opposition to the motion to amend, Petitioner argues that, although flat knitting may be a sub-type of weft knitting, flat knitting is broader than that and describes any "knitted textile that is knit in a flat

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form," and necessarily includes other types of knitted textiles, including warp knit textiles. Paper 37, 1-2. In the context of this Specification, we are not persuaded that flat knitting should be construed so broadly.

In construing the term "flat knitting," we apply the broadest reasonable interpretation of the words in their ordinary usage, as those words would be understood by one of ordinary skill in the art, taking into account any definitions supplied by the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). The Specification of the '011 Patent expressly describes flat knitting as a *sub-type* of weft knitting. Ex. 1002, col. 7, ll. 5-8. Ultimately, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be . . . the correct construction." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

Further, Patent Owner presents evidence that a person of ordinary skill in the art would understand flat knitting to describe a sub-type of weft knitting. Paper 44, 1 (quoting a textile dictionary (Ex. 2011, 6) to state that "the trade uses the term flat knit fabric to refer to weft knit fabrics made on a flat machine, rather than warp-knit fabrics"); *see also* Ex 2017, 5; Ex. 2018, 6. Despite its argument, Petitioner identifies no portion of the Specification of the '011 Patent that describes flat knitting with respect to warp knitting or any other type of knitting, beyond weft-knitting. *See* Paper 37, 2-3. In addition, *before* the filing date of the motion to amend, Dr. Frederick, Petitioner's expert, testified that "[f]lat knitting would be another type of weft knitting that would involve an end result that was . . . on a curved

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surface, but more or less flat." Ex. 2009, 89, ll. 6-11. Therefore, we determine that the term "weft knitting" describes a type of knitting in which a continuous yarn is carried in crosswise rows, and we construe the term "flat knit" to recite a sub-type of weft knitting, in which the weft knit textile is produced as a sheet of more or less flat material.[5]

3. The Textile Element Having First and Second Areas

In its petition, Petitioner argued that the phrase "the textile element *having a first area and a second area* with a unitary construction" in original claim 16 should be construed to require a textile element (1) having a unitary construction *and* (2) having a first area and a second area, each area having stitching that imparts different properties to its area. Paper 7, 11-12 (emphasis added). Thus, Petitioner argued that the textile element has a *single* unitary construction containing different areas. Petitioner also argued, however, that separate unitary constructions in *different* areas of the textile element would be inconsistent with the invention, as described in the Specification. *Id.* at 12.

The '011 Patent expressly defines the term "unitary construction." Ex. 1002, col. 6, ll. 41-46. The '011 Patent states that, "[*a*]*s defined for purposes of the present invention*, unitary construction is intended to express a configuration wherein portions of a textile element are not joined together

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[5] Although not dispositive for purposes of our construction of this term, we are mindful that Patent Owner proposed the replacement of "weft-knitted" with "flat knit" in original claim 16 in order to narrow the scope of substitute claim 47 in a manner consistent with the language of the Specification.

by seams or other connections, *as depicted with textile element 40 in FIG. 8*." *Id.* (emphases added); *see* Paper 18, 10-11 (citing *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994)). Consequently, we construe the phrase "the textile element having a first area and a second area with a unitary construction" to require a textile element having a unitary construction *and* having a first area and a second area.

4. 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

Patent Owner proposes adding these limitations to original claim 16 in substitute claim 47 in order to distinguish the substitute claims over the references cited by Petitioner in its petition and over other references known to Patent Owner. Paper 31, 3. The Specification of the '011 Patent describes a textile element with "edges" (*e.g.*, Ex. 1002, Abstract; col. 6, ll. 47-50 (describing edges 41a-44d of textile element 40)), and such edges were recited in the challenged claims (*see id.* at Claims 1, 3, 4, 6, 24, 36, and 39-41). In substitute claim 47, however, Patent Owner proposes to limit further those edges as (1) "flat knit" edges and (2) 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." We address the construction of each of these limitations in turn.

a. Flat Knit Edges

Patent Owner argues that "flat knit edges" are edges that are themselves "flat knit," as opposed to edges that are formed by cutting a textile element from a textile structure that has been created by flat knitting. Paper 31, 7-8. In particular, Patent Owner argues that cutting a textile element from a larger textile structure, such as is taught by Nishida (*see* Ex. 1005, col. 2, ll. 1-10), requires that the stitches at the textile element edges are broken, e.g., by a knife, die cutter, or other cutting technique, in order to separate the textile element from the surrounding textile structure. Paper 31, 7-8 (citing Ex. 2010 ¶¶ 101-105). Moreover, Patent Owner argues that, if untreated, such cut edges are subject to fraying or unraveling. *Id.; see also* Ex. 2010 ¶ 46 (citing Ex. 1007, 2, col. 1, ll. 56-63; Ex. 1009, col. 3, l. 68-col. 4, l. 16). Conversely, if the edges, like the textile of the flat knit textile element, are flat knit, Patent Owner argues that such edges inherently have a stable configuration in which the yarn of stitches at the edges of the textile element is unbroken and joined from one row to the next row. *Id.* at 8 (citing Ex. 2010 ¶ 105); *see also* MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS at 2054 (Ex. 3002); Ex. 1001 ¶ 56. Thus, Patent Owner argues that the yarns forming the flat knit edges of the flat knit textile element, as recited in substitute claim 47, retain their integrity, e.g., are unbroken and remain joined between rows. *See* Ex. 2010 ¶ 105. Therefore, according to Patent Owner, a *flat knit* edge of a flat knit textile element is structurally different from a *cut* edge of a flat knit textile element.

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Petitioner contends that the term "flat knit edges" has two plausible meanings. First, flat knit edges may be edges created when a textile element is cut from a larger flat knit textile structure. Second, flat knit edges may be edges created when a flat knit textile element is knit to shape. In an absolute sense, we agree. Nevertheless, we must determine what the term means in the context of *this* claim (including surrounding claim language) and in the context of the Specification of *this* patent. Here, we construe a flat knit edge to be 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.

b. 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

Figures 8, 10, and 11 of the Specification of the '011 Patent depict textile elements 40, 40′, and 40″, respectively, without any textile structure surrounding the textile elements. Patent Owner argues that these figures depict a flat knit textile element with flat knit edges and without any textile structure surrounding the textile elements, as recited in substitute claim 47. Paper 31, 3-4; *see, e.g.,* Ex. 1002, col. 6, ll. 41-50 (describing the unitary construction of textile element 40). In contrast, Figure 9 of the Specification depicts an embodiment of the disclosed invention in which a plurality of textile elements 40 is cut from a *circular knit* textile structure 60. Ex. 1002, col. 7, ll. 41-48. Thus, as noted above, Patent Owner argues that, unlike the cut out textile elements depicted in Figure 9, flat knit textile elements having

flat knit edges are depicted in and disclosed by Figures 8, 10, and 11. Paper 31, 4 (citing Ex. 2010 ¶¶ 36, 37, 40-41, and 62-67).

Petitioner argues that this limitation of substitute claim 47 properly is construed as a negative limitation and that the negative limitation lacks sufficient written description. Paper 37, 4. As the U.S. Court of Appeals for the Federal Circuit explained,

> [t]he test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, *rather than the presence or absence of literal support in the specification for the claim language* . . . The content of the drawings may also be considered in determining compliance with the written description requirement.

In re Kaslow, 707 F.2d 1366, 1375 (Fed. Cir. 1983) (emphasis added; citations omitted). To the extent that the language of substitute claim 47 recites a negative limitation, we conclude that this negative limitation is supported by the positive disclosure of the various forms of the textile element, including a flat knit textile element, with "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," in Figures 8, 10, and 11 of the '011 Patent. *See Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344, 1351 (2012) ("it is possible for the patentee to support both the inclusion and exclusion of the same material."). In view of the positive disclosure of this feature, the Specification need not disclose a reason to exclude. *Ex Parte Lazaridis and Brown*, Appeal No. 2010-

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005137, 2013 WL 1331529 (2013) (discussing an alternative basis for excluding a limitation in the absence of a positive recitation). Thus, we are persuaded that the Specification discloses flat knit edges free of surrounding material, as recited in substitute claim 47.

The language added to substitute claim 47 arguably recites the claimed invention in terms of the manner in which it is made, i.e., as a product-by-process limitation. During the oral hearing, the parties disagreed as to whether the added language is a product-by-process limitation. Paper 59, 10-11 and 20. We determined above that the process of creating a flat knit textile element with flat knit edges having no surrounding material creates an edge that is *structurally* different from a cut edge. Therefore, because the described process imparts structural differences to the textile element and, hence, to the claimed article of footwear, this limitation may be used to distinguish substitute claim 47 over the prior art. *See Greenliant Sys., Inc. v. Xicor LLC*, 692 F.3d 1261, 1265 (2012) ("[T]he process limitations in product-by-process claims . . . cannot be used to distinguish prior art *unless the process imparts structural differences to the product*." (emphasis added)).

As noted above, we construe the claims in view of the Specification. The Specification need not present every embodiment or permutation of the invention, and the claims are not limited to a preferred embodiment of the invention. *See Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). The claims, however, may not enlarge the scope of what is patented beyond what the inventor has described as the invention.

Claim construction is the judicial statement of what is and is not covered by the technical terms and other words of the claims. *See United States Surgical Corp. v. Ethicon, Inc.,* 103 F.3d 1554, 1568 (Fed. Cir. 1997). Here, the Specification broadly discloses the structure of the textile elements, e.g., textile elements 40, 40′, and 40″, from which a shoe upper may be formed. Moreover, the Specification describes an embodiment of a method for cutting a plurality of textile elements from a *weft* knit, and, in particular, a *circular* knit, textile structure (*see* Ex. 1002, fig. 9), but the disclosed invention is not limited to textile elements manufactured according to this embodiment. The Specification teaches that textile structure 60, from which textile elements 40, 40′, or 40″ may be cut, "may be formed" according to the embodiment depicted in Figure 9, but we conclude that those textile elements also may be made according to other embodiments. Ex. 1002, col. 8, ll. 1-14.

For example, Patent Owner's expert, Mr. Tonkel, testifies that, based on his reading of the Specification, textile elements 40, 40′, and 40″ may be made by the flat knitting of yarn by the known process of "knit[ting] to shape." Ex 2010 ¶¶ 36, 37, 40-42, and 62-67. Petitioner's expert does not disagree. Ex. 1001 ¶ 28 ("The '011 Patent describes that the textile element may be formed *any number of ways* with one or more yarns that are mechanically manipulated *using a variety of existing processes* . . ." (emphases added)); *see also* Ex. 1001 ¶ 53 ("Significantly, the '011 Patent states that the textile element may be formed *through any of the mechanical processes discussed in the specification*." (emphasis added)). Thus, we

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conclude that this language of substitute claim 47 is construed properly to describe a knit to shape textile element formed by flat knitting, having flat knit edges. Such flat knit edges are knit, such that the yarns and fibers forming the flat knit edges of the flat knit textile element, as recited in substitute claim 47, are unbroken and remain joined between rows forming the edges.

5. Remaining Claim Terms or Phrases

All remaining claim terms and phrases recited in substitute claims 47-50 are given their ordinary and customary meaning, consistent with the Specification, as would be understood by one with ordinary skill in the art.

B. A Reasonable Number Of Substitute Claims

Under 35 U.S.C. § 316(d)(1), a patent owner may, for each challenged claim, propose a reasonable number of substitute claims in a motion to amend. Each proposed claim should be traceable to an original, challenged claim as a proposed substitute claim for that challenged claim. Absent special circumstances, a challenged claim can be replaced by only one claim. The presumption is that only one substitute claim would be needed to replace each challenged claim, although the presumption may be rebutted by a demonstration of need. 37 C.F.R. § 42.121(a)(3).

In its motion to amend, Patent Owner proposes substitute, independent claim 47 for original, independent claim 16; *two,* substitute, dependent claims, claims 48 and 49, for original, dependent claim 19; and substitute, dependent claim 50 for original, dependent claim 20. Paper 31, 2.

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Thus, Patent Owner has proposed more than one substitute claim for original claim 19.

In the order acknowledging that Patent Owner complied with the requirement of 37 C.F.R. § 42.121(a) to confer with us prior to filing a motion to amend, we noted that, if more than one substitute claim is proposed for a challenged claim, for each proposed substitute claim, the patent owner is expected to make a showing of patentable distinction over all other proposed substitute claims for the same challenged claim. Paper 29, 2-3 (quoting *Idle Free Sys., Inc. v. Bergstrom, Inc.*, IPR2012-00027, Paper 26, 8-9 (emphasis added)).

If more than one substitute claim is proposed for the same challenged claim, the motion to amend must show that these multiple substitute claims are patentably distinct from each other. If shown to be patentably distinct from each other, the multiple claims are likely not unreasonable in number. Paper 29, 2-3. If, however, no such patentable distinction is shown in the motion, then we, in our discretion, may deny entry of the excess claims *or* group the multiple substitute claims together for common treatment over the prior art. *Id.* at 3.

Patent Owner argues that dependent claims 48 and 49, each of which is a substitute for claim 19, are patentably distinct from each other. Paper 31, 15 (citing Ex. 2010 ¶¶ 169-176). According to Patent Owner, "[c]laim 49 does not teach or suggest 'joined edges [that] shape the flat knit textile element to form a lateral region, a medial region, an instep region and a heel region of the upper,'" as recited in claim 48. Paper 31, 15 (citing Ex. 2010

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¶ 174). Similarly, Patent Owner argues that "[c]laim 48 does not teach or suggest 'apertures formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces,'" as recited in claim 49. *Id.* (citing Ex. 2010 ¶176).

Initially, we note that each of claims 48 and 49 depends directly from independent claim 47 and incorporates the limitations of claim 47 and original claim 19. With respect to the additional limitations of claim 48, Nishida describes joining the edges of the layout to form various portions of the upper, as recited. Ex. 1002, col. 2, ll. 6-10; col. 3, ll. 27-42; fig. 3; *see also* Paper 18, 20-25 (discussing original claims 3, 4, 6, 24, 39-41); Paper 37, 14-15 (claim chart for claim 48). With respect to the additional limitations of claim 49, Nishida describes forming lacing areas by knitting. Ex. 1002, col. 3, l. 66-col. 4, l. 5; *see also* Paper 18, 24-25 (discussing original claim 26); Paper 37, 15 (claim chart for claim 49). Further, the Specification of the '011 Patent describes the omission of stitches, as recited in claim 49, to provide air permeability to the upper. Ex. 1002, col. 9, ll. 57-62; *cf.* Ex. 1005, col. 3, ll. 43-52 ("This type of production can, additionally, insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a net-like woven or knitted structure.").

In view of limitations of claim 47 and original claim 19 *shared* by claims 48 and 49 and the teachings of Nishida, Patent Owner has not shown that claims 48 and 49 would not be obvious over each other, and Patent Owner does not persuade us that claims 48 and 49 are patentably distinct

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from each other. Thus, Patent Owner has failed to demonstrate that it proposes a reasonable number of substitute claims for original claim 19 in accordance with 37 C.F.R. § 42.121(a)(3). Nevertheless, in our discretion, we do not deny entry of claims 48 and 49 on this basis, but instead group claim 49 with claim 48, for patentability purposes. Further, we determine that Patent Owner does not argue separately that the limitations of claims 48 and 50 render them patentable over the prior art. *See* Paper 31, 6-10. Consequently, we group claims 48-50 with claim 47 for purposes of considering their patentability over prior art.

C. Scope of Motion to Amend

Pursuant to 37 C.F.R. § 42.121(a)(2), a motion to amend may be denied if: (1) the amendments seek to enlarge the scope of the original claims; (2) the amendments introduce new subject matter; or (3) the amendments do not respond to a ground of unpatentability, upon which trial was instituted. For the reasons discussed below, we determine that the substitute claims presented in Patent Owner's motion to amend are definite and narrow the scope of the original claims and do not introduce new subject matter. Further, we conclude that the substitute claims presented in Patent Owner's motion to amend respond to grounds of unpatentability, upon which trial was instituted, especially, anticipation by and obviousness over Nishida. *See* Paper 18, 37. Nevertheless, because, as set forth below, we deny Patent Owner's motion to amend for other reasons, we do not discuss further Patent Owner's arguments regarding the patentability of the

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substitute claims over Nishida alone or Petitioner's opposition to those arguments. *See* Paper 31, 6-10; Paper 37, 8-10.

1. Narrowing Amendments

With respect to substitute claim 47, Patent Owner proposes to replace the term "weft knit" with the term "flat knit" in original claim 16 and to add certain additional limitations to original claim 16. Paper 31, 1. Specifically, Patent Owner argues that "flat knitting" is a sub-type of "weft knitting." *Id.* at 3; Paper 44, 1-2. As noted above, we construe the term "flat knit textile element" in substitute claim 47 to mean a "flat *weft* knit textile element." Hence, it is narrower than the corresponding limitation of claim 16. Further, the additional limitations of substitute claim 47, reciting (1) "flat knit edges" and (2) the manner in which such edges are *not* formed, together provide structural limitations that were not present in original claim 16.

For the foregoing reasons, we determine that Patent Owner's proposed substitute claims 47-50 comply with 37 C.F.R. § 42.121(a)(2).

2. Written Description for Substitute Claims

The purpose of the written description requirement is to convey with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). We note that "the written description requirement is satisfied by the patentee's disclosure of 'such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention.'" *Enzo Biochem, Inc. v. Gen-*

Probe Inc., 323 F.3d 956, 969 (Fed. Cir. 2002) (quoting *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)). Patent Owner argues that the additional limitations of substitute claim 47 are supported by the disclosure of the patent application, U.S. Patent Application No. 10/791,289 ("the '289 Application"), from which the '011 Patent issued. Paper 31, 3-4 (citing Ex. 1003, 168-9, 173-5, 179, 181, and 184). We agree.

a. Flat Knit Textile Element

Patent Owner argues that, as with the '011 Patent, the '289 Application discloses that "weft knitting . . . include[s] circular knitting and flat knitting." *Id.* at 3 (citing Ex. 1003, 168); *cf.* Ex. 1002, col. 7, ll. 5-8. Further, claim 65 of the '289 Application recites that "an upper incorporating a textile element [is] formed through a *flat knitting* process" (emphasis added). *Id.* (citing Ex. 1003, 184); s*ee also* Ex. 1003, 179, 181 (claims 19 and 38 of the '289 Application recite "flat knitting"). It is well established that subject matter recited in a claim and embraced in an application, as originally filed, is itself a part of the disclosure, even though it may not be defined in the specification. *Application of Frey*, 166 F.2d 572, 575 (CCPA 1948).

Petitioner contends that "[t]he Board has yet to provide a construction of 'flat knitting,' and [that] the Board's construction of 'weft knitting' and 'warp knitting' does not indicate that 'flat knit' is *exclusively* a sub-type of 'weft knitting.'" Paper 37, 2 (emphasis added). Initially, we note that we provide a construction of the term "flat knitting" above. Specifically, in the

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context of this Specification, flat knitting is a sub-type of weft knitting, in which the textile is weft knit as a sheet or flat piece of textile. Ex. 1002, col. 7, ll. 5-8; *see also* Ex. 2010 ¶ 60 ("[I]n flat knitting a fabric is produced on a machine in generally flat form, with yarn alternating back and forth across the fabric. [*E.g.*, Ex. 2011, 8.] Moreover, a flat knit fabric is a fabric that has been knit on a flat knitting machine. [*E.g.*, *id.* at 6.]"); Ex. 1001 ¶ 56 ("weft knits may be made with flat *or* circular machines" (emphasis added)). Therefore, we conclude that Patent Owner has demonstrated support for the term "flat knit textile element" in the application from which the '011 Patent claims benefit, and that, as both Patent Owner's and Petitioner's experts agree, the meaning of flat knitting, as construed herein, was well-known at the time of the invention. *See* Ex. 2010 ¶¶ 49-50; Ex. 1001 ¶ 54.

b. 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

Patent Owner argues that, as with the '011 Patent, the '289 Application discloses that "flat knit edges [are] 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." Paper 31, 4. In particular, Patent Owner argues that Figures 8, 10, and 11 depict textile elements 40, 40′, and 40″, respectively, "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." *Id.* In contrast, Patent Owner

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argues that Figure 9 depicts a different embodiment of the invention than that recited in the substitute claims. *Id.*

Figure 9 depicts "a perspective view of a textile structure that incorporates two of the textile elements." Ex. 1003, 164 ('289 Application ¶ 24). In particular, the Specification of the '289 Application describes that:

> *An example of a textile structure 60 that may be formed with a wide-tube circular knitting machine is depicted in Figure 9.* Textile structure 60 has a generally cylindrical configuration, and the types of stitches vary throughout textile structure 60 so that a pattern is formed with the outline of textile element 40. That is, differences in the stitches within textile structure 60 form an outline with the shape and proportions of textile element 40.

Id. at 169 ('289 Application ¶ 45 (emphasis added)). Thus, Patent Owner argues that the embodiment depicted in 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 and that a textile element may or may not be formed by removing it from a larger textile structure, such as textile structure 60. Paper 31, 4. Further, referring to Figures 8, 10, and 11, Dr. Tonkel opines that the '289 Application "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." Ex. 2010 ¶ 63; *see also* Ex. 2010 ¶ 37. Moreover, Dr. Tonkel asserts that his opinions are from the perspective of a person of ordinary skill in the art. Ex. 2010 ¶¶ 52-53.

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Petitioner disagrees and argues that Patent Owner's contention that this limitation is described sufficiently in the '289 Application rests on a single phrase, and, perhaps, on a single word in that phrase, that textile element 40 "*may* be formed as a part of a larger textile element." Paper 37, 3-4 (citing Paper 31, 4; Ex. 2010 ¶ 63 (emphasis added)). According to Petitioner, Patent Owner argues that, based on this disclosure, textile element 40 may be formed as part of a larger textile structure *or* may be knit to shape. *Id.* In view of the depiction of the textile element, without surrounding material, in Figures 8, 10, and 11 of the '289 Application and the non-limiting language used with respect to the embodiment, with surrounding material, depicted in Figure 9, we are persuaded that the Specification of the '289 Application adequately supports the language added to original claim 16 in substitute claim 47.

3. Definiteness of Substitute Claims

Petitioner argues that the substitute claims are indefinite. Paper 37, 6-8. The test for definiteness under 35 U.S.C. § 112, ¶ 2, is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted). More specifically, "if a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim unpatentable under 35 U.S.C. § 112, [¶ 2], as indefinite." *Ex parte Miyazaki*, 89 USPQ2d 1207, 1211 (BPAI 2008) (precedential). Citing

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Miyazaki, Petitioner contends that the substitute claims, in particular, substitute claim 47, are "amenable to two or more plausible claim constructions." Paper 37, 6-8. We disagree.

Petitioner contends that the limitations added to original claim 16 reciting that "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" have two plausible claim constructions. *Id.* at 6. First, Petitioner contends that this language may be construed to recite a flat knit textile element having flat knit edges, which has been removed from a surrounding textile structure. *Id.* Second, Petitioner contends that this language may be construed to recite a flat knit textile element having flat knit edges, which has been knit to shape. *Id.* at 6-7; *see also* Ex. 1015, 68-98 (transcript of deposition of Dr. Tonkel).

Petitioner contends that only the first construction is supported by the disclosure of the Specification of the '011 Patent. *Id.* at 6. We disagree, and, for the reasons set forth above, we determine that the second construction is supported. Figure 9 of the '011 Patent depicts a single embodiment of a process for forming textile elements, in which a pair of textile elements 40 is cut from *circular* knit textile structure 60. *See* Ex. 1002, col. 7, ll. 41-48. Although circular knitting, like flat knitting, is a type of weft knitting, circular knitting is not the same as flat knitting. Moreover, as depicted in Figure 9, the process is intended to produce multiple textile elements from a single textile structure. *Id.* at ll. 56-58. Petitioner fails to identify any disclosure in the Specification of the '011 Patent that would

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limit the formation of textile elements 40, 40′, and 40″ of Figures 8, 10, and 11, respectively, solely to the process of Figure 9. Although the substitute claims are interpreted in light of the Specification, limitations from the Specification are not read into the substitute claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993). Thus, we are not persuaded that the disclosure of the textile elements of Figures 8, 10, and 11 should be limited by the process embodiment depicted in Figure 9.

Petitioner notes that its textile expert, Dr. Adanur, opines that a person of ordinary skill in the art at the time of the priority date of the '011 Patent would understand that, under the broadest reasonable interpretation, "flat knit edges" means "edges of a knitted textile that are knit in flat form," whether or not knit to shape. Paper 37, 7-8 (citing Ex. 1016 ¶ 38). This also does not demonstrate that the claim language of the substitute claims may be construed to recite *both* that the textile element is removed from a larger textile structure and that the textile element is knit to shape. Therefore, construing the language of the substitute claims in accordance with the disclosure of the Specification, we determine that the substitute claims recite a flat knit textile element having flat knit edges, which has been knit to shape, and that the substitute claims are not susceptible to two plausible constructions. Thus, the substitute claims are not indefinite for the reasons proposed by Petitioner.

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D. Patentability over Prior Art

An *inter partes* review is neither a patent examination proceeding nor a patent reexamination proceeding. The substitute claims proposed in a motion to amend are not entered automatically and then subjected to examination. Rather, the proposed substitute claims will be added directly to the patent, without examination, *if* the patent owner's motion to amend claims is granted. In a motion to amend, the patent owner is not rebutting a rejection in an office action, as though this proceeding were a patent examination or a reexamination. Instead, the patent owner, as the movant, bears the burden of establishing the patentability of the proposed substitute claims over the prior art of record and also other prior art known to Patent Owner. We deny the motion to amend because (1) Patent Owner has not met this burden and (2) Petitioner has shown that the substitute claims would have been rendered obvious over the combination of the teachings of Nishida and Schuessler I and II.

1. Patentability Over Other Art Known To Patent Owner

In the motion to amend, Patent Owner states that:

> The proposed claims are patentable over the prior art, including prior art identified by the Board in its Decision on whether to institute a trial *and other prior art known to NIKE.*

Paper 31, 3 (emphasis added). Such a conclusory statement that the proposed claims are patentable over "other prior art known to [Patent Owner]" is facially inadequate. Patent Owner's motion does not discuss (1) the level of ordinary skill in the art, explaining the basic knowledge and skill set already possessed by one of ordinary skill in the art, with respect to the

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new claim features or (2) the other known prior art. Moreover, failing to identify the "other prior art" and limiting the discussion to the references relied upon in the petition or raised in Petitioner's opposition to the motion to amend does not provide a meaningful analysis of such art.

In a prior order (Paper 22), we directed Patent Owner to *Idle Free*, IPR2012-00027, Paper 26, dated June 11, 2013, as providing guidance on motions to amend. Paper 22, 2-3. In *Idle Free*, the Board advised the patent owner that, in a motion to amend:

> A patent owner should identify specifically the feature or features added to each substitute claim, as compared to the challenged claim it replaces, and come forward with technical facts and reasoning about those feature(s), including construction of new claim terms, sufficient to 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*. The burden is not on the petitioner to show unpatentability, but on the patent owner to show patentable distinction over the prior art of record and also prior art known to the patent owner. Some representation should be made about the specific technical disclosure of the closest prior art known to the patent owner, and not just a conclusory remark that no prior art known to the patent owner renders obvious the proposed substitute claims.
>
> A showing of patentable distinction can rely on declaration testimony of a technical expert about the significance and usefulness of the feature(s) added by the proposed substitute claim, from the perspective of one with ordinary skill in the art, and also on the level of ordinary skill, in terms of ordinary creativity and the basic skill set. *A mere conclusory statement by counsel, in the motion to amend, to the effect that one or more added features are not described in any prior art, and would not have been suggested or rendered*

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obvious by prior art, is on its face inadequate.

Idle Free, IPR2012-00027, Paper 26, 7-8 (emphasis added); *see also Idle Free,* IPR2012-00027, Paper 66, 33-38 (denying motion to amend in final written decision). Yet, in its motion to amend, Patent Owner addresses only the references asserted in the petition and in the opposition to the motion to amend. Paper 31, 6-15; *see also* Paper 44, 4-5. As the Board explained, "[d]istinguishing the proposed substitute claims only from the prior art references applied to the original patent claims, however, is insufficient to demonstrate general patentability over prior art." *Idle Free,* IPR2012-00027, Paper 66, 33. Consequently, the portion of Patent Owner's motion to amend requesting entry of substitute claims 47-50 is *denied*.

2. Obviousness over Nishida and Schuessler I and II

For the reasons below, we also are not persuaded that Patent Owner has demonstrated the patentability of the proposed substitute claims over a ground of unpatentability presented by Petitioner, in particular, the ground involving Nishida and Schuessler I and II. As noted above, we instituted *inter partes* review of claims 16, 19, and 20 because we determined that Petitioner had demonstrated a reasonable likelihood of showing that these claims were rendered obvious by Nishida. Paper 18, 31. Petitioner now argues that substitute claims 47-50 are unpatentable as rendered obvious by Nishida in view of the additional teachings of Schuessler I and II. Paper 37, 10-11. Moreover, because Patent Owner did not file a patent owner response to the petition, in this final decision, we accept as unchallenged that Nishida teaches or suggests all of the limitations of original claims 16, 19,

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and 20. *See* Paper 19, 2-3 ("The patent owner is cautioned that any arguments for patentability not raised in the response will be deemed waived."). Thus, we now consider only whether Schuessler I and II teach or suggest the limitations added in substitute claims 47-50 and whether Petitioner has shown some reasoning supported by a rational underpinning for combining the teachings of Nishida with those of Schuessler I and II to achieve the invention recited in the substitute claims. For the reasons set forth below, we are persuaded that Nishida and Schuessler I and II render substitute claims 47-50 obvious.

Petitioner argues that Schuessler I and II teach or suggest "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." Paper 37, 11. In particular, Schuessler I teaches a method of producing a knitted helmet, e.g., a knitted cap. Ex. 1020, col. 1, ll. 15-22. The knitted helmet may be formed from a swatch knit on a flat knitting machine, such as that described in Schuessler II (Ex. 1021, col. 1, ll. 39-42), "as knitted *without requiring cutting*" (Ex. 1020, col. 1, ll. 25-26 (emphasis added); *see also* Ex. 1020, col. 1, ll. 17-18). *See* Paper 37, 10. The swatch is a two-dimensional shape the edges of which may be joined to form a three-dimensional shape, including an opening to receive the helmet wearer's head. Paper 37, 10-11 (citing Ex. 1020, col. 2, ll. 41-45); *see also* Ex. 1020, col. 1, ll. 32-36; fig. 2 (depicting a finished helmet). Thus, Schuessler I teaches or suggests knitting the swatch to shape. Ex. 1020, col. 1, l. 48-col. 2, l. 2.

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Petitioner contends that Nishida and Schuessler I are in similar fields and address the same problem, namely the formation of two-dimensional textile elements having edges that are joined to form three-dimensional, wearable items. Paper 37, 11; *cf.* Ex. 1005, figs. 1 (two-dimensional layout 2) and 3 (three-dimensional, shoe upper 3); Ex. 1020, figs. 1 (two-dimensional helmet swatch) and 2 (three-dimensional helmet). Further, Schuessler II teaches that the two-dimensional helmet swatch of Figure 1 of Schuessler I may be knit to shape on a flat knitting machine. Paper 37, 11 (citing Ex. 1023 ¶ 15). Petitioner contends, therefore, that a person of ordinary skill in the art would have reason to combine the teachings of these three references to achieve the invention recited in substitute claim 47. *Id.*

Patent Owner does not argue Petitioner's assessment of the teachings of these references. Patent Owner also does not dispute that all of the limitations of the claims are taught in the prior art. Instead, Patent Owner argues that Petitioner's contention that a person of ordinary skill in the art would combine Nishida's teaching regarding the reduction of waste by placing layouts in adjoining positions and Schuessler I's teaching regarding knitting textile elements to shape is illogical. Paper 44, 5. Specifically, Patent Owner argues that Petitioner's reason for combining these teachings is somehow flawed because "*after* they are combined the elements of each reference serve the same purpose." *Id.* As the U.S. Supreme Court explained, however, "if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious

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unless its actual application is beyond his or her skill." *KSR Int'l Co. v. Teleflex Inc.*, 555 U.S. 398, 417 (2007). In this case, that the elements of the prior art references would "serve the same purpose" when combined is a factor in favor of an obviousness determination, and not a suggestion of non-obviousness, as urged by Patent Owner.

Because we are persuaded that Petitioner has demonstrated that the teachings of Nishida and Schuessler I and II teach or suggest all of the limitations of substitute claim 47 and that a person of ordinary skill in the art would have had reason to combine the teachings of these references to achieve the recited article of footwear, we determine that Patent Owner fails to meet its burden of showing that it is entitled to the relief requested in its motion to amend. Because we group substitute claims 48-50 with claim 47 for purposes of assessing patentability, we also determine that Patent Owner fails to meet its burden of showing that it is entitled to the relief requested in its motion to amend with respect to substitute claims 48-50. Consequently, the portion of Patent Owner's motion to amend requesting entry of substitute claims 47-50 also is *denied* for failing to demonstrate that the substitute claims are patentable over Nishida and Schuessler I and II.

E. Petitioner's Motion to Exclude

Petitioner has filed a motion seeking to exclude the following evidence: (1) certain portions of the transcript of the cross-examination of Dr. Frederick (Ex. 2009, pg. 116, ll. 3-25); and (2) references to this testimony by Patent Owner's expert, Dr. Tonkel (Ex. 2010 ¶ 65). Paper 44, 3-5. As

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the movant, Petitioner has the burden of establishing that it is entitled to the requested relief. 37 C.F.R. § 42.20(c).

Petitioner seeks to exclude certain portions of the testimonial evidence obtained by Patent Owner during the cross-examination of Petitioner's expert, Dr. Frederick. Paper 49, 1. In particular, Petitioner argues that, contrary to the requirements of 37 C.F.R. § 42.53(d)(5)(ii), Patent Owner's cross-examination of Dr. Frederick exceeded the scope of Dr. Frederick's direct testimony (Ex. 1001), which was limited to the construction of terms of original claims 1-46 and to the unpatentability of those original claims in view of grounds identified by Petitioner. Paper 49, 1. Petitioner argues that Patent Owner questioned Dr. Frederick regarding "flat knit edges," a term that did not appear in original claims 1-46, but which Patent Owner included in the substitute claims of its motion to amend. *Id.*; *see also* Paper 54, 3-4.

Although Petitioner argues that Patent Owner's questioning of Dr. Frederick exceeded the scope of his direct testimony, Petitioner only objected to one of several questions in the testimony that it seeks to exclude, and Petitioner stated an "*[o]bjection to form*" with respect to that question, not an objection that the question or any of the preceding questions sought testimony that was *beyond the scope* of the Dr. Frederick's direct testimony. Ex. 2009, pg. 116, l. 24 (emphasis added); *see* Paper 54, 2-3.

Moreover, Petitioner requests that we grant its motion to exclude the portions of the transcript of the cross-examination of Dr. Frederick *preceding* the question that was the subject of Petitioner's objection. *Id.* at 5-6 (citing Ex. 2009, pg. 116, ll. 3-25). As a result of the grant of this

motion, references to this challenged testimony by Patent Owner's expert, Dr. Tonkel, (Ex. 2010 ¶ 65) also presumably would be excluded.

Patent Owner opposes Petitioner's motion to exclude. In particular, Parent Owner argues that: (1) Petitioner did not object to most of the questions or testimony that it now seeks to exclude, objecting only to a single question; (2) the elicited testimony related to aspects of Dr. Frederick's direct testimony; (3) the elicited testimony pertained to Dr. Frederick's credibility as an expert witness regarding the patented technology; and (4) Patent Owner elicited the testimony without the use of leading questions, i.e., in the proper form. Paper 51, 1.

The current situation does not require us to assess the merits of Petitioner's motion to exclude. As discussed above, even without relying upon the aforementioned portions of the cross-examination testimony of Dr. Frederick, we have concluded that Patent Owner has demonstrated that the term "flat knit edges" of substitute claims 47-50 is supported by the disclosure of the '289 Application. Accordingly, Petitioner's motion to exclude evidence is *dismissed* as moot.

III. CONCLUSION

For the reasons set forth above, we grant the portion of Patent Owner's motion to amend requesting cancellation of claims 1-46 of the '011 Patent. In its motion to amend, Patent Owner has not met its burden of establishing the patentability of substitute claims 47-50. Therefore, we deny

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the portion of Patent Owner's motion to amend requesting entry of substitute claims 47-50.

This is a final decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IV. ORDER

In consideration of the foregoing, it is

ORDERED that the portion of Patent Owner's motion to amend requesting cancellation of claims 1-46 of the '011 Patent is *granted*;

FURTHER ORDERED that the portion of Patent Owner's motion to amend requesting entry of substitute claims 47-50 is *denied*; and

FURTHER ORDERED that Petitioner's motion to exclude evidence is *dismissed* as moot.

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Case IPR2013-00067
Patent 7,347,011 B2

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U.S. DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

August 25, 2014

(Date)

THIS IS TO CERTIFY that the attached document is a list of the papers that comprise the record before the Patent Trial and Appeal Board (PTAB) for the *Inter Partes Review* proceeding identified below.

Adidas AG
Petitioner
v.

NIKE, Inc.
Patent Owner

Case: IPR2013-00067
Patent No. 7,347,011 B2

By authority of the

DIRECTOR OF THE UNITED STATES
PATENT AND TRADEMARK OFFICE



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No. 2014-1719

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

NIKE, INC.,

Appellant,

v.

ADIDAS AG,

Appellee.

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

JOINT CERTIFICATE OF COMPLIANCE WITH FEDERAL CIRCUIT RULE 33

June 8, 2015

Appellant Nike, Inc., Appellee Adidas AG and Intervenor Director of the United States Patent and Trademark Office hereby jointly certify that they have complied with Federal Circuit Rule 33(a).

Dated: June 8, 2015

Respectfully submitted,

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ECF-3(B)(2) REPRESENTATION

Pursuant to this Court's Administrative Order Regarding Electronic Case Filing, the undersigned represents under ECF-3(b)(2) that counsel for Appellee Adidas AG and Intervenor Director of the United States Patent and Trademark Office have consented to their signature on this Joint Certificate of Compliance with Federal Circuit Rule 33.

Dated: June 8, 2015

/s/ Kevin A. Goldman

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CERTIFICATE OF SERVICE

I hereby certify that, on this 8th day of June, 2015 I filed the foregoing Joint Certificate of Compliance with Federal Circuit Rule 33 with the Clerk of the United States Court of Appeals for the Federal Circuit via the CM/ECF system, which will send notice of such filing to all registered CM/ECF users.

/s/ Kevin A. Goldman

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No. 2014-1719

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

NIKE, INC.,

Appellant,

v.

ADIDAS AG,

Appellee.

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

JOINT APPENDIX
(A1-A2488)

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June 8, 2015

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Exhibit 1005, U.S. Patent No. 5,345,638, issued September 12, 1994	A540-A549
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Exhibit 1015, Transcript of Cross Examination Deposition of Raymond Tonkel, taken November 5, 2013	A1731-A1844
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Exhibit 1024, Billy Hunter, Editor Viewpoint: Nike Flyknit: Quantum Leap for Flat Knitting	A2026-A2030
Exhibit 1025, Billy Hunter, Editor, Nike Flyknit: Ready, Steady, Go	A2031-A2035
Nike's Reply to Petitioner's Opposition to Motion to Amend U.S. Patent 7,347,011, Paper No. 44 (Dec. 11, 2013)	A2055-A2063
Exhibit 2020, Transcript of Second Cross-Examination Deposition of Edward C. Frederick, taken December 3, 2013	A2102-A2160
Exhibit 2021, Transcript of Cross-Examination Deposition of Sabit Adanur, taken December 3, 2013	A2161-A2299
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Paper 60
Entered: April 28, 2014

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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adidas AG
Petitioner

v.

NIKE, Inc.
Patent Owner

Case IPR2013-00067
Patent 7,347,011 B2

Before JOSIAH C. COCKS, MICHAEL J. FITZPATRICK, and JAMES B. ARPIN, *Administrative Patent Judges.*

ARPIN, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

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I. INTRODUCTION

On December 10, 2012, adidas AG ("Petitioner") filed a revised petition (Paper 7) challenging claims 1-46 of Patent No. US 7,347,011 B2 (Ex. 1002, "the '011 Patent"). Petitioner relied upon the following prior art references:

Glidden	US 2,147,197	Feb. 14, 1939	(Ex. 1007)
McDonald	US 2,314,098	Mar. 16, 1943	(Ex. 1008)
Whiting	US 2,641,004	June 9, 1953	(Ex. 1009)
Shiomura	US 4,785,558	Nov. 22, 1988	(Ex. 1011)
Curley	WO 90/03744	Apr. 19, 1990	(Ex. 1010)
Osamu	JP H06-113905	Apr. 26, 1994	(Ex. 1006)
Nishida	US 5,345,638	Sep. 13, 1994	(Ex. 1005)

On February 28, 2013, Nike, Inc. ("Patent Owner") filed a patent owner preliminary response (Paper 12). In a decision to institute (Paper 18) issued May 17, 2013, we[1] instituted *inter partes* review of all of the challenged claims as to the following grounds for review:

claims 1-16, 19-34, 36, and 39-46 as anticipated by Nishida;

claims 16-18 as anticipated by Glidden;

claims 1-16 and 19-46 as obvious over Nishida; and

claims 16-18 as obvious over Glidden.

On August 18, 2013, Patent Owner filed a motion to amend (Paper 31), accompanied by certain testimony of Patent Owner's expert, Dr. Tonkel

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[1] After issuance of the decision to institute, Judge Cocks replaced Judge Tierney as the administrative patent judge managing this proceeding. Paper 30.

(Ex. 2010), but elected not to file a patent owner response. In the scheduling order (Paper 19, 2-3), Patent Owner had been cautioned that any arguments for patentability not raised in the patent owner response are deemed waived. On November 12, 2013, Petitioner filed an opposition (Paper 37) to the motion to amend, including three additional exhibits: declaration of Sabit Adanur Ph.D. (Ex. 1016) and Patent Nos. US 2,178,941 (Ex. 1020, "Schuessler I") and US 2,150,730 (Ex. 1021, "Schuessler II"). On December 11, 2013, Patent Owner filed a reply (Paper 44) to Petitioner's opposition to the motion to amend.

On January 7, 2014, Petitioner filed a motion to exclude evidence (Paper 49). Specifically, Petitioner moved to exclude (1) certain testimony elicited on cross-examination of Petitioner's expert, Dr. Frederick (Ex. 2009 (deposition testimony of Dr. Frederick)), as allegedly beyond the scope of Dr. Frederick's direct testimony (Ex. 1001 (declaration of Dr. Frederick)); and (2) certain testimony of Patent Owner's expert, Dr. Tonkel, which allegedly relied on the challenged, cross-examination testimony of Dr. Frederick. On January 21, 2014, Patent Owner filed Patent Owner's opposition (Paper 51) to Petitioner's motion to exclude evidence; and, on January 28, 2014, Petitioner filed Petitioner's reply (Paper 54) to Patent Owner's opposition to Petitioner's motion to exclude evidence.

Both parties requested oral argument. Papers 47 and 48. In the trial hearing order (Paper 50), we gave each party thirty (30) minutes to argue its case. Because Patent Owner did not file a patent owner response, we ordered (1) that the parties would not present arguments regarding whether

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original claims 1-46 are unpatentable based on the instituted grounds and (2) that Patent Owner, rather than Petitioner, would argue first. Paper 50, 2. The oral hearing was conducted on February 10, 2014.[2]

We have jurisdiction under 35 U.S.C. § 6(c). This final written decision is entered pursuant to 35 U.S.C. § 318(a).

For the reasons that follow, the portion of Patent Owner's motion to amend requesting cancellation of claims 1-46[3] is *granted*; however, the portion of the motion requesting entry of substitute claims 47-50 is *denied*.

Petitioner's motion to exclude evidence is *dismissed* as moot.

A. Related Proceedings

Petitioner does not identify related proceedings. Paper 7, 1. Patent Owner identifies three related patents, identified by Patent Nos. US 7,814,598 B2; US 8,042,288 B2, and US 8,266,749 B2; and one related U.S. patent application, identified by U.S. Patent Application No. 13/413,233. Paper 9, 2.

B. The '011 Patent

The '011 Patent relates to articles of footwear having a textile "upper." Ex. 1002, col. 1, ll. 7-10. In particular, the patent describes articles of footwear having an upper incorporating a knitted textile element and having a sole structure secured to the upper. *Id.* at col. 3, ll. 20-47.

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[2] A transcript of the hearing is included in the record as Paper 59.

[3] *See* Paper 31, 1.

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Conventional articles of athletic footwear may include two primary elements: an upper and a sole structure. *Id.* at col. 1, ll. 12-15. The upper may form a void on the interior of the footwear for receiving a wearer's foot, and the upper may extend over the instep and toe areas, along the medial and lateral sides, and around the heel area of the wearer's foot. *Id.* at ll. 30-35. The upper may be formed of multiple layers of materials, which may be selected for properties of wear resistance, flexibility, and air permeability. *Id.* at ll. 43-50. Thus, different areas of the exterior layer of the upper may be formed of different materials with differing properties. *Id.* at ll. 51-60. In that regard, the '011 Patent explains that:

> A textile may be defined as any manufacture from fibers, filaments, or yarns characterized by flexibility, fineness, and a high ratio of length to thickness. *Textiles generally fall into two categories.* The first category includes textiles produced directly from webs of filaments or fibers by randomly interlocking to construct non-woven fabrics and felts. The second category includes textiles formed through a mechanical manipulation of yarn, thereby producing a woven fabric, for example.

Id. at col. 2, ll. 6-14 (emphasis added). Techniques for the mechanical manipulation of yarn into a textile include weaving (e.g., producing a woven material) and knitting (e.g., producing a knitted material). *Id.* at ll. 36-46. Further, textiles for uppers may be formed of weft or warp, woven or knitted materials. *Id.* at ll. 40-41; *see also id.* at col. 3, ll. 30-32 (describing weft knitted and warp knitted "textile elements").

Figure 8 of the '011 Patent is reproduced below.

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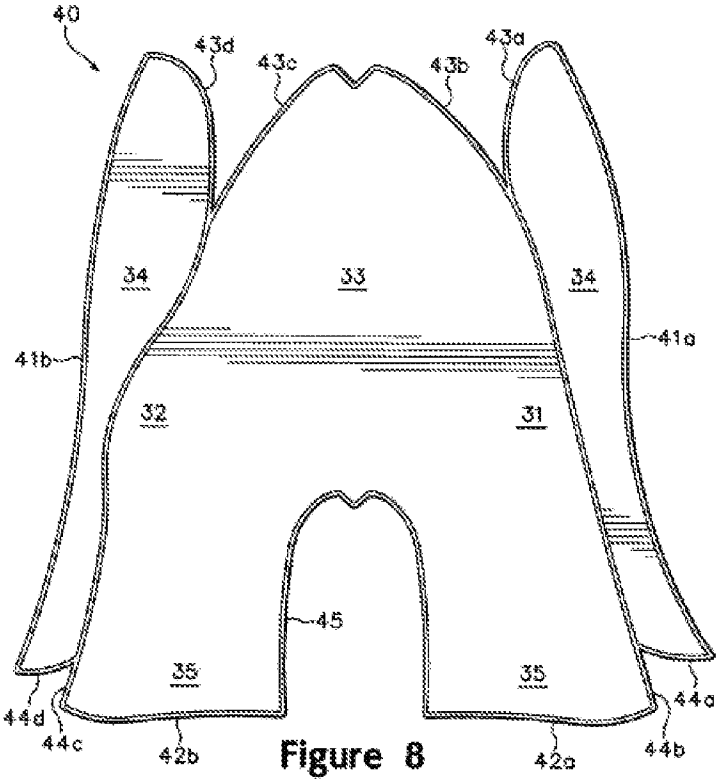


Figure 8

Figure 8 illustrates an embodiment of an upper according to the '011 Patent. *Id.* at col. 5, l. 58-col. 6, l. 65. Textile element 40 is a single material element with a unitary (i.e., one-piece) construction. *Id.* at col. 5, ll. 38-41; *see also id.* at figs. 10 (depicting textile element 40′) and 11 (depicting textile element 40″). Consequently, textile element 40 is configured, such that portions of the textile element are not joined together with seams or other connections. *Id.* at col. 5, ll. 38-41; col. 6, ll. 41-46. Edges 41a-44d, which are *free* in Figure 8, are joined together as shown in Figures 3-5 to form seams 51-54, thereby forming at least a portion of a void for receiving the foot. In contrast, lateral region 31, medial region 32, instep

region 33, lower regions 34, and heel regions 35 together have a unitary construction without seams (*id.* at col. 5, ll. 44-57; col. 6, ll. 47-50).

Figure 11 of the '011 Patent is reproduced below.

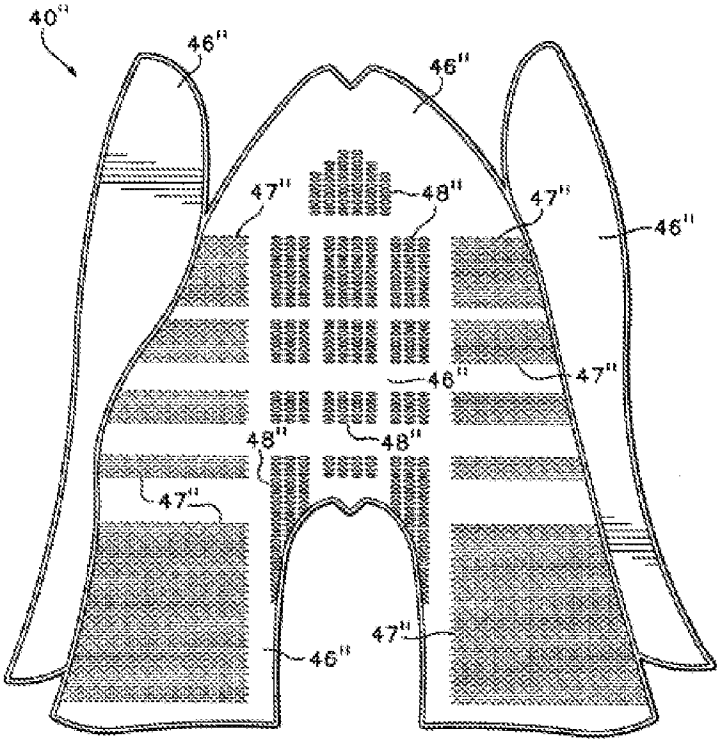


Figure 11

Figure 11 illustrates another embodiment of an upper according to the '011 Patent. *Id.* at col. 9, l. 36-col. 10, l. 14. Textile element 40″ includes three different areas with three different textures. *Id.* at col. 9, ll. 38-39. First texture 46″ is generally smooth and extends in strips across lateral region 31, medial region 32, and instep region 33 of the upper. *Id.* at ll. 39-42. In addition, textile element 40″ includes second texture 47″ and third texture 48″. *Id.* at ll. 42-46. Moreover, the '011 Patent describes that:

> The different textures 46″-48″ are formed *by merely varying the type of stitch formed* by the wide-tube circular knitting machine at each location of textile element 40″. Textures 46″-48″ may exhibit aesthetic differences, or the differences may be structural. *For example, the degree of stretch in areas with textures 46"-48" may be different, or the wear resistance of the areas may vary depending upon the stitch utilized.* The air-permeability of textile element 40‴ may also vary in the different areas.

Id. at ll. 46-54 (emphases added). Similarly, the type of yarn used in different areas may impart different properties to each area. *Id.* at col. 9, l. 65-col. 10, l. 14. Thus, the textures and properties of different areas of the upper may be varied by altering the stitching or yarn used in those areas.

C. Status of the Claims

Of the challenged claims, claims 1, 16, 24, 36, and 44 are independent. Independent claims 1, 24, and 36 recite similar limitations describing the formation of a void to receive the foot, and independent claims 16 and 44 recite similar limitations describing the unitary construction of the textile element. As to the dependent claims, claims 2-15 depend from claim 1, claims 17-23 depend from claim 16, claims 25-35 depend from claim 24, claims 37-43 depend from claim 36, and claims 45 and 46 depend from claim 44. In its motion to amend, Patent Owner states that "[i]ssued claims 1-46 are cancelled" (Paper 31, 1), and proposes four (4) substitute claims, claims 47-50, based on original claims 16, 19, and 20 (*id.*

at 1-2) . The substitute claims are reproduced below:[4]

Claim 47. (Substitute for independent claim 16) An article of footwear comprising

an upper incorporating a [weft-knitted] 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.

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 configuration 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

---

[4] Subject matter deleted from original claims 16, 19, and 20 is enclosed by brackets; subject matter added to those claims is underlined.

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> [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.
>
> Claim 50. (Substitute for dependent claim 20) The article of footwear recited in claim [16] 47, wherein the [weft-knitted] 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.

Paper 31, 1-2. Thus, Patent Owner proposes amending original claim 16 to recite one of two sub-types of a *weft-knitted* textile element, namely a *flat knit* textile element. Paper 31, 1. Further, substitute claim 47 recites a negative limitation regarding the flat knit edges in terms of their method of manufacture. *See* Paper 37, 4; Paper 59, 20-21 and 23-25. Specifically, the "flat knit edges" are themselves flat knit and *not* cut from a flat knit textile. Paper 37, 9. Thus, the upper is recited as "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" (emphases added). Finally, some of the "flat knit edges" of the upper are joined to form an ankle opening. *Id.* at 10.

II. DISCUSSION

Because Patent Owner did not file a response to the petition, we focus our discussion on Patent Owner's motion to amend. As noted above, in the motion to amend, Patent Owner requests the cancellation of claims 1-46 and

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the entry of one independent substitute claim, claim 47, and three dependent substitute claims, claims 48-50. Paper 31, 1-2. In support of its motion, Patent Owner filed a declaration of Dr. Tonkel (Ex. 2010).

An *inter partes* review is more adjudicatory than examinational, in nature. *See Abbott Labs. v. Cordis Corp.*, 710 F.3d 1318, 1326 (Fed. Cir. 2013). A *motion* to amend in an *inter partes* review is not itself an amendment. As the moving party, Patent Owner bears the burden of establishing that it is entitled to the relief requested. 37 C.F.R. § 42.20(c). Thus, Patent Owner's proposed substitute claims are not entered automatically, but may be entered upon Patent Owner's having demonstrated the patentability of the substitute claims.

A. Claim Construction

Claim construction is an important step in a patentability determination. *Medichem, S.A. v. Rolabo, S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003) ("Both anticipation under § 102 and obviousness under § 103 are two-step inquiries. The first step in both analyses is a proper construction of the claims. . . . The second step in the analyses requires a comparison of the properly construed claim to the prior art." (internal citations omitted)). Thus, a motion to amend must identify how the proposed substitute claims are to be construed, especially when the proposed substitute claims introduce new claim terms or features. *See Research in Motion Corp. v. MobileMedia Ideas LLC*, IPR2013-00016, Paper 32, 6. The motion to amend also must explain how the construed claim is distinguishable over the art.

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Neither Patent Owner nor Petitioner challenges our interpretation of certain terms of claim 16, as set forth in the decision to institute, which terms also appear in substitute claims 47-50. Paper 18, 10-17. The interpretations of those terms are adopted for purposes of this final decision. In particular, in the decision to institute, we construed expressly the claim terms: a "weft-knitted textile element," a "flat-knitted textile element," and "unitary construction." Paper 18, 11-15. Although the original claims are no longer at issue, the interpretation of terms in the decision to institute is relevant to the interpretation of those terms in the substitute claims.

1. A Single Type of Textile

Independent claims 1, 24, and 36 recite that a textile element incorporates "a single type of textile." In its petition, Petitioner pointed out that "[t]extile element 40 is primarily formed from one or more yarns that are mechanically-manipulated through either an interweaving, intertwining and twisting, or interlooping process." Paper 7, 10 (quoting '011 Patent, col. 6, ll. 51-54). "A single type of textile" is not defined expressly in the Specification of the '011 Patent. Nevertheless, we noted that a pertinent definition of the term "textile" is "any cloth or goods produced by weaving, knitting, or felting." RANDOM HOUSE WEBSTER'S COLLEGE DICTIONARY 1351 (2nd Random House ed. 1996) (Ex. 3001); *cf.* Ex. 1002, col. 2, ll. 6-14 (defining "textiles"). In addition, the term "textile" is defined more broadly as "[a] material made of natural or artificial fibers and used for the manufacture of items such as clothing or furniture fittings." MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 1911 (4th ed. 1989)

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(Ex. 3002). As noted above, the '011 Patent states that textiles generally fall into two categories: fabrics formed of randomly locked filaments or fibers, such as felts; and fabrics formed of mechanically manipulated yarn, such as woven or knitted fabrics. Ex. 1002, col. 2, ll. 9-14.

The '011 Patent describes various techniques for mechanically manipulating yarn into woven fabrics or textiles, including interweaving (e.g., weaving), intertwining and twisting (e.g., braiding and knotting), and interlooping (e.g., knitting). *Id.* at ll. 36-46. In the decision to institute, we noted that claim 16 recites that the "textile element" is "knitted" and, in particular, "weft-knitted." Paper 18, 11-13.

2. Weft-Knitted Textile Element and Flat-Knitted Textile Element

According to Patent Owner, substitute claim 47 incorporates the limitations of challenged, independent claim 16. Paper 31, 1. In its petition, Petitioner argued that the terms "weft-knitted" and "flat-knitted" are well-known in the art. Paper 7, 10. We agreed.

As noted above, the Specification of the '011 Patent describes that various textile types (e.g., weft knitting textiles) and sub-types (e.g., circular and flat knitted) may be used to manufacture textile elements for incorporation into the uppers of the claimed articles of footwear. Ex. 1002, col. 6, l. 66-col. 7, l. 10. In the "Detailed Description of the Invention" portion of the Specification, the '011 Patent further describes that:

> A variety of mechanical processes have been developed to manufacture a textile. *In general, the mechanical processes may be classified as either warp knitting or weft knitting.* With regard to warp knitting, various specific *sub-types* that may be

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> utilized to manufacture a textile include tricot, raschel, and double needle-bar raschel (which further includes jacquard double needle-bar raschel). *With regard to weft knitting, various specific sub-types that may be utilized to manufacture a textile include circular knitting and flat knitting.* Various types of circular knitting include sock knitting (narrow tube), body garment (seamless or wide tube), and jacquard.

Id. at col. 6, l. 66-col. 7, l. 10 (emphases added).

Although the '011 Patent does not include a definition of either the term "weft knitting" or "warp knitting," a pertinent definition of "weft knitting" is "[a] knitting process in which *a continuous yarn* is carried *in crosswise rows*." MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS at 2054 (Ex. 3002; emphases added); *see also* Ex. 1001 ¶ 56 (reproducing H. Eberle et al., CLOTHING TECHNOLOGY, Sec. 3.3.1 (3rd English ed. 2002) (weft knitted fabric "[m]ay be made from a single yarn")). By comparison, a pertinent definition of the term "warp knitting" is "[a] knitting process in which *a group of yarns form rows running lengthwise* by an interlocking process." MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS at 2045 (Ex. 3002; emphasis added). Similarly, flat knitting is described in the '011 Patent as a sub-type of weft knitting, in which the textile is knit as a sheet or flat piece of textile (Ex. 1002, col. 7, ll. 5-8), in contrast to, for example, circular knitting, which is another sub-type of weft knitting (*see* Ex. 1002, fig. 9).

In its opposition to the motion to amend, Petitioner argues that, although flat knitting may be a sub-type of weft knitting, flat knitting is broader than that and describes any "knitted textile that is knit in a flat

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form," and necessarily includes other types of knitted textiles, including warp knit textiles. Paper 37, 1-2. In the context of this Specification, we are not persuaded that flat knitting should be construed so broadly.

In construing the term "flat knitting," we apply the broadest reasonable interpretation of the words in their ordinary usage, as those words would be understood by one of ordinary skill in the art, taking into account any definitions supplied by the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). The Specification of the '011 Patent expressly describes flat knitting as a *sub-type* of weft knitting. Ex. 1002, col. 7, ll. 5-8. Ultimately, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be . . . the correct construction." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

Further, Patent Owner presents evidence that a person of ordinary skill in the art would understand flat knitting to describe a sub-type of weft knitting. Paper 44, 1 (quoting a textile dictionary (Ex. 2011, 6) to state that "the trade uses the term flat knit fabric to refer to weft knit fabrics made on a flat machine, rather than warp-knit fabrics"); *see also* Ex 2017, 5; Ex. 2018, 6. Despite its argument, Petitioner identifies no portion of the Specification of the '011 Patent that describes flat knitting with respect to warp knitting or any other type of knitting, beyond weft-knitting. *See* Paper 37, 2-3. In addition, *before* the filing date of the motion to amend, Dr. Frederick, Petitioner's expert, testified that "[f]lat knitting would be another type of weft knitting that would involve an end result that was . . . on a curved

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surface, but more or less flat." Ex. 2009, 89, ll. 6-11. Therefore, we determine that the term "weft knitting" describes a type of knitting in which a continuous yarn is carried in crosswise rows, and we construe the term "flat knit" to recite a sub-type of weft knitting, in which the weft knit textile is produced as a sheet of more or less flat material.[5]

3. The Textile Element Having First and Second Areas

In its petition, Petitioner argued that the phrase "the textile element *having a first area and a second area* with a unitary construction" in original claim 16 should be construed to require a textile element (1) having a unitary construction *and* (2) having a first area and a second area, each area having stitching that imparts different properties to its area. Paper 7, 11-12 (emphasis added). Thus, Petitioner argued that the textile element has a *single* unitary construction containing different areas. Petitioner also argued, however, that separate unitary constructions in *different* areas of the textile element would be inconsistent with the invention, as described in the Specification. *Id.* at 12.

The '011 Patent expressly defines the term "unitary construction." Ex. 1002, col. 6, ll. 41-46. The '011 Patent states that, "[*a*]*s defined for purposes of the present invention*, unitary construction is intended to express a configuration wherein portions of a textile element are not joined together

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[5] Although not dispositive for purposes of our construction of this term, we are mindful that Patent Owner proposed the replacement of "weft-knitted" with "flat knit" in original claim 16 in order to narrow the scope of substitute claim 47 in a manner consistent with the language of the Specification.

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by seams or other connections, *as depicted with textile element 40 in FIG. 8*." *Id.* (emphases added); *see* Paper 18, 10-11 (citing *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994)). Consequently, we construe the phrase "the textile element having a first area and a second area with a unitary construction" to require a textile element having a unitary construction *and* having a first area and a second area.

4. 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

Patent Owner proposes adding these limitations to original claim 16 in substitute claim 47 in order to distinguish the substitute claims over the references cited by Petitioner in its petition and over other references known to Patent Owner. Paper 31, 3. The Specification of the '011 Patent describes a textile element with "edges" (*e.g.*, Ex. 1002, Abstract; col. 6, ll. 47-50 (describing edges 41a-44d of textile element 40)), and such edges were recited in the challenged claims (*see id.* at Claims 1, 3, 4, 6, 24, 36, and 39-41). In substitute claim 47, however, Patent Owner proposes to limit further those edges as (1) "flat knit" edges and (2) 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." We address the construction of each of these limitations in turn.

a. Flat Knit Edges

Patent Owner argues that "flat knit edges" are edges that are themselves "flat knit," as opposed to edges that are formed by cutting a textile element from a textile structure that has been created by flat knitting. Paper 31, 7-8. In particular, Patent Owner argues that cutting a textile element from a larger textile structure, such as is taught by Nishida (*see* Ex. 1005, col. 2, ll. 1-10), requires that the stitches at the textile element edges are broken, e.g., by a knife, die cutter, or other cutting technique, in order to separate the textile element from the surrounding textile structure. Paper 31, 7-8 (citing Ex. 2010 ¶¶ 101-105). Moreover, Patent Owner argues that, if untreated, such cut edges are subject to fraying or unraveling. *Id.; see also* Ex. 2010 ¶ 46 (citing Ex. 1007, 2, col. 1, ll. 56-63; Ex. 1009, col. 3, l. 68-col. 4, l. 16). Conversely, if the edges, like the textile of the flat knit textile element, are flat knit, Patent Owner argues that such edges inherently have a stable configuration in which the yarn of stitches at the edges of the textile element is unbroken and joined from one row to the next row. *Id.* at 8 (citing Ex. 2010 ¶ 105); *see also* MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS at 2054 (Ex. 3002); Ex. 1001 ¶ 56. Thus, Patent Owner argues that the yarns forming the flat knit edges of the flat knit textile element, as recited in substitute claim 47, retain their integrity, e.g., are unbroken and remain joined between rows. *See* Ex. 2010 ¶ 105. Therefore, according to Patent Owner, a *flat knit* edge of a flat knit textile element is structurally different from a *cut* edge of a flat knit textile element.

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Petitioner contends that the term "flat knit edges" has two plausible meanings. First, flat knit edges may be edges created when a textile element is cut from a larger flat knit textile structure. Second, flat knit edges may be edges created when a flat knit textile element is knit to shape. In an absolute sense, we agree. Nevertheless, we must determine what the term means in the context of *this* claim (including surrounding claim language) and in the context of the Specification of *this* patent. Here, we construe a flat knit edge to be 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.

b. 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

Figures 8, 10, and 11 of the Specification of the '011 Patent depict textile elements 40, 40′, and 40″, respectively, without any textile structure surrounding the textile elements. Patent Owner argues that these figures depict a flat knit textile element with flat knit edges and without any textile structure surrounding the textile elements, as recited in substitute claim 47. Paper 31, 3-4; *see, e.g.,* Ex. 1002, col. 6, ll. 41-50 (describing the unitary construction of textile element 40). In contrast, Figure 9 of the Specification depicts an embodiment of the disclosed invention in which a plurality of textile elements 40 is cut from a *circular knit* textile structure 60. Ex. 1002, col. 7, ll. 41-48. Thus, as noted above, Patent Owner argues that, unlike the cut out textile elements depicted in Figure 9, flat knit textile elements having

flat knit edges are depicted in and disclosed by Figures 8, 10, and 11. Paper 31, 4 (citing Ex. 2010 ¶¶ 36, 37, 40-41, and 62-67).

Petitioner argues that this limitation of substitute claim 47 properly is construed as a negative limitation and that the negative limitation lacks sufficient written description. Paper 37, 4. As the U.S. Court of Appeals for the Federal Circuit explained,

> [t]he test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, *rather than the presence or absence of literal support in the specification for the claim language* . . . The content of the drawings may also be considered in determining compliance with the written description requirement.

In re Kaslow, 707 F.2d 1366, 1375 (Fed. Cir. 1983) (emphasis added; citations omitted). To the extent that the language of substitute claim 47 recites a negative limitation, we conclude that this negative limitation is supported by the positive disclosure of the various forms of the textile element, including a flat knit textile element, with "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," in Figures 8, 10, and 11 of the '011 Patent. *See Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344, 1351 (2012) ("it is possible for the patentee to support both the inclusion and exclusion of the same material."). In view of the positive disclosure of this feature, the Specification need not disclose a reason to exclude. *Ex Parte Lazaridis and Brown*, Appeal No. 2010-

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005137, 2013 WL 1331529 (2013) (discussing an alternative basis for excluding a limitation in the absence of a positive recitation). Thus, we are persuaded that the Specification discloses flat knit edges free of surrounding material, as recited in substitute claim 47.

The language added to substitute claim 47 arguably recites the claimed invention in terms of the manner in which it is made, i.e., as a product-by-process limitation. During the oral hearing, the parties disagreed as to whether the added language is a product-by-process limitation. Paper 59, 10-11 and 20. We determined above that the process of creating a flat knit textile element with flat knit edges having no surrounding material creates an edge that is *structurally* different from a cut edge. Therefore, because the described process imparts structural differences to the textile element and, hence, to the claimed article of footwear, this limitation may be used to distinguish substitute claim 47 over the prior art. *See Greenliant Sys., Inc. v. Xicor LLC*, 692 F.3d 1261, 1265 (2012) ("[T]he process limitations in product-by-process claims . . . cannot be used to distinguish prior art *unless the process imparts structural differences to the product*." (emphasis added)).

As noted above, we construe the claims in view of the Specification. The Specification need not present every embodiment or permutation of the invention, and the claims are not limited to a preferred embodiment of the invention. *See Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). The claims, however, may not enlarge the scope of what is patented beyond what the inventor has described as the invention.

Claim construction is the judicial statement of what is and is not covered by the technical terms and other words of the claims. *See United States Surgical Corp. v. Ethicon, Inc.,* 103 F.3d 1554, 1568 (Fed. Cir. 1997). Here, the Specification broadly discloses the structure of the textile elements, e.g., textile elements 40, 40′, and 40″, from which a shoe upper may be formed. Moreover, the Specification describes an embodiment of a method for cutting a plurality of textile elements from a *weft* knit, and, in particular, a *circular* knit, textile structure (*see* Ex. 1002, fig. 9), but the disclosed invention is not limited to textile elements manufactured according to this embodiment. The Specification teaches that textile structure 60, from which textile elements 40, 40′, or 40″ may be cut, "may be formed" according to the embodiment depicted in Figure 9, but we conclude that those textile elements also may be made according to other embodiments. Ex. 1002, col. 8, ll. 1-14.

For example, Patent Owner's expert, Mr. Tonkel, testifies that, based on his reading of the Specification, textile elements 40, 40′, and 40″ may be made by the flat knitting of yarn by the known process of "knit[ting] to shape." Ex 2010 ¶¶ 36, 37, 40-42, and 62-67. Petitioner's expert does not disagree. Ex. 1001 ¶ 28 ("The '011 Patent describes that the textile element may be formed *any number of ways* with one or more yarns that are mechanically manipulated *using a variety of existing processes* . . ." (emphases added)); *see also* Ex. 1001 ¶ 53 ("Significantly, the '011 Patent states that the textile element may be formed *through any of the mechanical processes discussed in the specification*." (emphasis added)). Thus, we

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conclude that this language of substitute claim 47 is construed properly to describe a knit to shape textile element formed by flat knitting, having flat knit edges. Such flat knit edges are knit, such that the yarns and fibers forming the flat knit edges of the flat knit textile element, as recited in substitute claim 47, are unbroken and remain joined between rows forming the edges.

5. Remaining Claim Terms or Phrases

All remaining claim terms and phrases recited in substitute claims 47-50 are given their ordinary and customary meaning, consistent with the Specification, as would be understood by one with ordinary skill in the art.

B. A Reasonable Number Of Substitute Claims

Under 35 U.S.C. § 316(d)(1), a patent owner may, for each challenged claim, propose a reasonable number of substitute claims in a motion to amend. Each proposed claim should be traceable to an original, challenged claim as a proposed substitute claim for that challenged claim. Absent special circumstances, a challenged claim can be replaced by only one claim. The presumption is that only one substitute claim would be needed to replace each challenged claim, although the presumption may be rebutted by a demonstration of need. 37 C.F.R. § 42.121(a)(3).

In its motion to amend, Patent Owner proposes substitute, independent claim 47 for original, independent claim 16; *two,* substitute, dependent claims, claims 48 and 49, for original, dependent claim 19; and substitute, dependent claim 50 for original, dependent claim 20. Paper 31, 2.

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Thus, Patent Owner has proposed more than one substitute claim for original claim 19.

In the order acknowledging that Patent Owner complied with the requirement of 37 C.F.R. § 42.121(a) to confer with us prior to filing a motion to amend, we noted that, if more than one substitute claim is proposed for a challenged claim, for each proposed substitute claim, the patent owner is expected to make a showing of patentable distinction over all other proposed substitute claims for the same challenged claim. Paper 29, 2-3 (quoting *Idle Free Sys., Inc. v. Bergstrom, Inc.*, IPR2012-00027, Paper 26, 8-9 (emphasis added)).

If more than one substitute claim is proposed for the same challenged claim, the motion to amend must show that these multiple substitute claims are patentably distinct from each other. If shown to be patentably distinct from each other, the multiple claims are likely not unreasonable in number. Paper 29, 2-3. If, however, no such patentable distinction is shown in the motion, then we, in our discretion, may deny entry of the excess claims *or* group the multiple substitute claims together for common treatment over the prior art. *Id.* at 3.

Patent Owner argues that dependent claims 48 and 49, each of which is a substitute for claim 19, are patentably distinct from each other. Paper 31, 15 (citing Ex. 2010 ¶¶ 169-176). According to Patent Owner, "[c]laim 49 does not teach or suggest 'joined edges [that] shape the flat knit textile element to form a lateral region, a medial region, an instep region and a heel region of the upper,'" as recited in claim 48. Paper 31, 15 (citing Ex. 2010

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¶ 174). Similarly, Patent Owner argues that "[c]laim 48 does not teach or suggest 'apertures formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces,'" as recited in claim 49. *Id.* (citing Ex. 2010 ¶176).

Initially, we note that each of claims 48 and 49 depends directly from independent claim 47 and incorporates the limitations of claim 47 and original claim 19. With respect to the additional limitations of claim 48, Nishida describes joining the edges of the layout to form various portions of the upper, as recited. Ex. 1002, col. 2, ll. 6-10; col. 3, ll. 27-42; fig. 3; *see also* Paper 18, 20-25 (discussing original claims 3, 4, 6, 24, 39-41); Paper 37, 14-15 (claim chart for claim 48). With respect to the additional limitations of claim 49, Nishida describes forming lacing areas by knitting. Ex. 1002, col. 3, l. 66-col. 4, l. 5; *see also* Paper 18, 24-25 (discussing original claim 26); Paper 37, 15 (claim chart for claim 49). Further, the Specification of the '011 Patent describes the omission of stitches, as recited in claim 49, to provide air permeability to the upper. Ex. 1002, col. 9, ll. 57-62; *cf.* Ex. 1005, col. 3, ll. 43-52 ("This type of production can, additionally, insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a net-like woven or knitted structure.").

In view of limitations of claim 47 and original claim 19 *shared* by claims 48 and 49 and the teachings of Nishida, Patent Owner has not shown that claims 48 and 49 would not be obvious over each other, and Patent Owner does not persuade us that claims 48 and 49 are patentably distinct

from each other. Thus, Patent Owner has failed to demonstrate that it proposes a reasonable number of substitute claims for original claim 19 in accordance with 37 C.F.R. § 42.121(a)(3). Nevertheless, in our discretion, we do not deny entry of claims 48 and 49 on this basis, but instead group claim 49 with claim 48, for patentability purposes. Further, we determine that Patent Owner does not argue separately that the limitations of claims 48 and 50 render them patentable over the prior art. *See* Paper 31, 6-10. Consequently, we group claims 48-50 with claim 47 for purposes of considering their patentability over prior art.

C. Scope of Motion to Amend

Pursuant to 37 C.F.R. § 42.121(a)(2), a motion to amend may be denied if: (1) the amendments seek to enlarge the scope of the original claims; (2) the amendments introduce new subject matter; or (3) the amendments do not respond to a ground of unpatentability, upon which trial was instituted. For the reasons discussed below, we determine that the substitute claims presented in Patent Owner's motion to amend are definite and narrow the scope of the original claims and do not introduce new subject matter. Further, we conclude that the substitute claims presented in Patent Owner's motion to amend respond to grounds of unpatentability, upon which trial was instituted, especially, anticipation by and obviousness over Nishida. *See* Paper 18, 37. Nevertheless, because, as set forth below, we deny Patent Owner's motion to amend for other reasons, we do not discuss further Patent Owner's arguments regarding the patentability of the

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substitute claims over Nishida alone or Petitioner's opposition to those arguments. *See* Paper 31, 6-10; Paper 37, 8-10.

1. Narrowing Amendments

With respect to substitute claim 47, Patent Owner proposes to replace the term "weft knit" with the term "flat knit" in original claim 16 and to add certain additional limitations to original claim 16. Paper 31, 1. Specifically, Patent Owner argues that "flat knitting" is a sub-type of "weft knitting." *Id.* at 3; Paper 44, 1-2. As noted above, we construe the term "flat knit textile element" in substitute claim 47 to mean a "flat *weft* knit textile element." Hence, it is narrower than the corresponding limitation of claim 16. Further, the additional limitations of substitute claim 47, reciting (1) "flat knit edges" and (2) the manner in which such edges are *not* formed, together provide structural limitations that were not present in original claim 16.

For the foregoing reasons, we determine that Patent Owner's proposed substitute claims 47-50 comply with 37 C.F.R. § 42.121(a)(2).

2. Written Description for Substitute Claims

The purpose of the written description requirement is to convey with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). We note that "the written description requirement is satisfied by the patentee's disclosure of 'such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention.'" *Enzo Biochem, Inc. v. Gen-*

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Probe Inc., 323 F.3d 956, 969 (Fed. Cir. 2002) (quoting *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)). Patent Owner argues that the additional limitations of substitute claim 47 are supported by the disclosure of the patent application, U.S. Patent Application No. 10/791,289 ("the '289 Application"), from which the '011 Patent issued. Paper 31, 3-4 (citing Ex. 1003, 168-9, 173-5, 179, 181, and 184). We agree.

a. Flat Knit Textile Element

Patent Owner argues that, as with the '011 Patent, the '289 Application discloses that "weft knitting . . . include[s] circular knitting and flat knitting." *Id.* at 3 (citing Ex. 1003, 168); *cf.* Ex. 1002, col. 7, ll. 5-8. Further, claim 65 of the '289 Application recites that "an upper incorporating a textile element [is] formed through a *flat knitting* process" (emphasis added). *Id.* (citing Ex. 1003, 184); s*ee also* Ex. 1003, 179, 181 (claims 19 and 38 of the '289 Application recite "flat knitting"). It is well established that subject matter recited in a claim and embraced in an application, as originally filed, is itself a part of the disclosure, even though it may not be defined in the specification. *Application of Frey*, 166 F.2d 572, 575 (CCPA 1948).

Petitioner contends that "[t]he Board has yet to provide a construction of 'flat knitting,' and [that] the Board's construction of 'weft knitting' and 'warp knitting' does not indicate that 'flat knit' is *exclusively* a sub-type of 'weft knitting.'" Paper 37, 2 (emphasis added). Initially, we note that we provide a construction of the term "flat knitting" above. Specifically, in the

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context of this Specification, flat knitting is a sub-type of weft knitting, in which the textile is weft knit as a sheet or flat piece of textile. Ex. 1002, col. 7, ll. 5-8; *see also* Ex. 2010 ¶ 60 ("[I]n flat knitting a fabric is produced on a machine in generally flat form, with yarn alternating back and forth across the fabric. [*E.g.*, Ex. 2011, 8.] Moreover, a flat knit fabric is a fabric that has been knit on a flat knitting machine. [*E.g.*, *id.* at 6.]"); Ex. 1001 ¶ 56 ("weft knits may be made with flat *or* circular machines" (emphasis added)). Therefore, we conclude that Patent Owner has demonstrated support for the term "flat knit textile element" in the application from which the '011 Patent claims benefit, and that, as both Patent Owner's and Petitioner's experts agree, the meaning of flat knitting, as construed herein, was well-known at the time of the invention. *See* Ex. 2010 ¶¶ 49-50; Ex. 1001 ¶ 54.

b. 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

Patent Owner argues that, as with the '011 Patent, the '289 Application discloses that "flat knit edges [are] 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." Paper 31, 4. In particular, Patent Owner argues that Figures 8, 10, and 11 depict textile elements 40, 40′, and 40″, respectively, "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." *Id.* In contrast, Patent Owner

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argues that Figure 9 depicts a different embodiment of the invention than that recited in the substitute claims. *Id.*

Figure 9 depicts "a perspective view of a textile structure that incorporates two of the textile elements." Ex. 1003, 164 ('289 Application ¶ 24). In particular, the Specification of the '289 Application describes that:

> *An example of a textile structure 60 that may be formed with a wide-tube circular knitting machine is depicted in Figure 9.* Textile structure 60 has a generally cylindrical configuration, and the types of stitches vary throughout textile structure 60 so that a pattern is formed with the outline of textile element 40. That is, differences in the stitches within textile structure 60 form an outline with the shape and proportions of textile element 40.

Id. at 169 ('289 Application ¶ 45 (emphasis added)). Thus, Patent Owner argues that the embodiment depicted in 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 and that a textile element may or may not be formed by removing it from a larger textile structure, such as textile structure 60. Paper 31, 4. Further, referring to Figures 8, 10, and 11, Dr. Tonkel opines that the '289 Application "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." Ex. 2010 ¶ 63; *see also* Ex. 2010 ¶ 37. Moreover, Dr. Tonkel asserts that his opinions are from the perspective of a person of ordinary skill in the art. Ex. 2010 ¶¶ 52-53.

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Petitioner disagrees and argues that Patent Owner's contention that this limitation is described sufficiently in the '289 Application rests on a single phrase, and, perhaps, on a single word in that phrase, that textile element 40 "*may* be formed as a part of a larger textile element." Paper 37, 3-4 (citing Paper 31, 4; Ex. 2010 ¶ 63 (emphasis added)). According to Petitioner, Patent Owner argues that, based on this disclosure, textile element 40 may be formed as part of a larger textile structure *or* may be knit to shape. *Id.* In view of the depiction of the textile element, without surrounding material, in Figures 8, 10, and 11 of the '289 Application and the non-limiting language used with respect to the embodiment, with surrounding material, depicted in Figure 9, we are persuaded that the Specification of the '289 Application adequately supports the language added to original claim 16 in substitute claim 47.

3. Definiteness of Substitute Claims

Petitioner argues that the substitute claims are indefinite. Paper 37, 6-8. The test for definiteness under 35 U.S.C. § 112, ¶ 2, is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted). More specifically, "if a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim unpatentable under 35 U.S.C. § 112, [¶ 2], as indefinite." *Ex parte Miyazaki*, 89 USPQ2d 1207, 1211 (BPAI 2008) (precedential). Citing

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Miyazaki, Petitioner contends that the substitute claims, in particular, substitute claim 47, are "amenable to two or more plausible claim constructions." Paper 37, 6-8. We disagree.

Petitioner contends that the limitations added to original claim 16 reciting that "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" have two plausible claim constructions. *Id.* at 6. First, Petitioner contends that this language may be construed to recite a flat knit textile element having flat knit edges, which has been removed from a surrounding textile structure. *Id.* Second, Petitioner contends that this language may be construed to recite a flat knit textile element having flat knit edges, which has been knit to shape. *Id.* at 6-7; *see also* Ex. 1015, 68-98 (transcript of deposition of Dr. Tonkel).

Petitioner contends that only the first construction is supported by the disclosure of the Specification of the '011 Patent. *Id.* at 6. We disagree, and, for the reasons set forth above, we determine that the second construction is supported. Figure 9 of the '011 Patent depicts a single embodiment of a process for forming textile elements, in which a pair of textile elements 40 is cut from *circular* knit textile structure 60. *See* Ex. 1002, col. 7, ll. 41-48. Although circular knitting, like flat knitting, is a type of weft knitting, circular knitting is not the same as flat knitting. Moreover, as depicted in Figure 9, the process is intended to produce multiple textile elements from a single textile structure. *Id.* at ll. 56-58. Petitioner fails to identify any disclosure in the Specification of the '011 Patent that would

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limit the formation of textile elements 40, 40′, and 40″ of Figures 8, 10, and 11, respectively, solely to the process of Figure 9. Although the substitute claims are interpreted in light of the Specification, limitations from the Specification are not read into the substitute claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993). Thus, we are not persuaded that the disclosure of the textile elements of Figures 8, 10, and 11 should be limited by the process embodiment depicted in Figure 9.

Petitioner notes that its textile expert, Dr. Adanur, opines that a person of ordinary skill in the art at the time of the priority date of the '011 Patent would understand that, under the broadest reasonable interpretation, "flat knit edges" means "edges of a knitted textile that are knit in flat form," whether or not knit to shape. Paper 37, 7-8 (citing Ex. 1016 ¶ 38). This also does not demonstrate that the claim language of the substitute claims may be construed to recite *both* that the textile element is removed from a larger textile structure and that the textile element is knit to shape. Therefore, construing the language of the substitute claims in accordance with the disclosure of the Specification, we determine that the substitute claims recite a flat knit textile element having flat knit edges, which has been knit to shape, and that the substitute claims are not susceptible to two plausible constructions. Thus, the substitute claims are not indefinite for the reasons proposed by Petitioner.

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D. Patentability over Prior Art

An *inter partes* review is neither a patent examination proceeding nor a patent reexamination proceeding. The substitute claims proposed in a motion to amend are not entered automatically and then subjected to examination. Rather, the proposed substitute claims will be added directly to the patent, without examination, *if* the patent owner's motion to amend claims is granted. In a motion to amend, the patent owner is not rebutting a rejection in an office action, as though this proceeding were a patent examination or a reexamination. Instead, the patent owner, as the movant, bears the burden of establishing the patentability of the proposed substitute claims over the prior art of record and also other prior art known to Patent Owner. We deny the motion to amend because (1) Patent Owner has not met this burden and (2) Petitioner has shown that the substitute claims would have been rendered obvious over the combination of the teachings of Nishida and Schuessler I and II.

1. Patentability Over Other Art Known To Patent Owner

In the motion to amend, Patent Owner states that:

> The proposed claims are patentable over the prior art, including prior art identified by the Board in its Decision on whether to institute a trial *and other prior art known to NIKE.*

Paper 31, 3 (emphasis added). Such a conclusory statement that the proposed claims are patentable over "other prior art known to [Patent Owner]" is facially inadequate. Patent Owner's motion does not discuss (1) the level of ordinary skill in the art, explaining the basic knowledge and skill set already possessed by one of ordinary skill in the art, with respect to the

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new claim features or (2) the other known prior art. Moreover, failing to identify the "other prior art" and limiting the discussion to the references relied upon in the petition or raised in Petitioner's opposition to the motion to amend does not provide a meaningful analysis of such art.

In a prior order (Paper 22), we directed Patent Owner to *Idle Free*, IPR2012-00027, Paper 26, dated June 11, 2013, as providing guidance on motions to amend. Paper 22, 2-3. In *Idle Free*, the Board advised the patent owner that, in a motion to amend:

> A patent owner should identify specifically the feature or features added to each substitute claim, as compared to the challenged claim it replaces, and come forward with technical facts and reasoning about those feature(s), including construction of new claim terms, sufficient to 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*. The burden is not on the petitioner to show unpatentability, but on the patent owner to show patentable distinction over the prior art of record and also prior art known to the patent owner. Some representation should be made about the specific technical disclosure of the closest prior art known to the patent owner, and not just a conclusory remark that no prior art known to the patent owner renders obvious the proposed substitute claims.
>
> A showing of patentable distinction can rely on declaration testimony of a technical expert about the significance and usefulness of the feature(s) added by the proposed substitute claim, from the perspective of one with ordinary skill in the art, and also on the level of ordinary skill, in terms of ordinary creativity and the basic skill set. *A mere conclusory statement by counsel, in the motion to amend, to the effect that one or more added features are not described in any prior art, and would not have been suggested or rendered*

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obvious by prior art, is on its face inadequate.

Idle Free, IPR2012-00027, Paper 26, 7-8 (emphasis added); *see also Idle Free,* IPR2012-00027, Paper 66, 33-38 (denying motion to amend in final written decision). Yet, in its motion to amend, Patent Owner addresses only the references asserted in the petition and in the opposition to the motion to amend. Paper 31, 6-15; *see also* Paper 44, 4-5. As the Board explained, "[d]istinguishing the proposed substitute claims only from the prior art references applied to the original patent claims, however, is insufficient to demonstrate general patentability over prior art." *Idle Free,* IPR2012-00027, Paper 66, 33. Consequently, the portion of Patent Owner's motion to amend requesting entry of substitute claims 47-50 is *denied*.

2. Obviousness over Nishida and Schuessler I and II

For the reasons below, we also are not persuaded that Patent Owner has demonstrated the patentability of the proposed substitute claims over a ground of unpatentability presented by Petitioner, in particular, the ground involving Nishida and Schuessler I and II. As noted above, we instituted *inter partes* review of claims 16, 19, and 20 because we determined that Petitioner had demonstrated a reasonable likelihood of showing that these claims were rendered obvious by Nishida. Paper 18, 31. Petitioner now argues that substitute claims 47-50 are unpatentable as rendered obvious by Nishida in view of the additional teachings of Schuessler I and II. Paper 37, 10-11. Moreover, because Patent Owner did not file a patent owner response to the petition, in this final decision, we accept as unchallenged that Nishida teaches or suggests all of the limitations of original claims 16, 19,

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and 20. *See* Paper 19, 2-3 ("The patent owner is cautioned that any arguments for patentability not raised in the response will be deemed waived."). Thus, we now consider only whether Schuessler I and II teach or suggest the limitations added in substitute claims 47-50 and whether Petitioner has shown some reasoning supported by a rational underpinning for combining the teachings of Nishida with those of Schuessler I and II to achieve the invention recited in the substitute claims. For the reasons set forth below, we are persuaded that Nishida and Schuessler I and II render substitute claims 47-50 obvious.

Petitioner argues that Schuessler I and II teach or suggest "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." Paper 37, 11. In particular, Schuessler I teaches a method of producing a knitted helmet, e.g., a knitted cap. Ex. 1020, col. 1, ll. 15-22. The knitted helmet may be formed from a swatch knit on a flat knitting machine, such as that described in Schuessler II (Ex. 1021, col. 1, ll. 39-42), "as knitted *without requiring cutting*" (Ex. 1020, col. 1, ll. 25-26 (emphasis added); *see also* Ex. 1020, col. 1, ll. 17-18). *See* Paper 37, 10. The swatch is a two-dimensional shape the edges of which may be joined to form a three-dimensional shape, including an opening to receive the helmet wearer's head. Paper 37, 10-11 (citing Ex. 1020, col. 2, ll. 41-45); *see also* Ex. 1020, col. 1, ll. 32-36; fig. 2 (depicting a finished helmet). Thus, Schuessler I teaches or suggests knitting the swatch to shape. Ex. 1020, col. 1, l. 48-col. 2, l. 2.

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Petitioner contends that Nishida and Schuessler I are in similar fields and address the same problem, namely the formation of two-dimensional textile elements having edges that are joined to form three-dimensional, wearable items. Paper 37, 11; *cf.* Ex. 1005, figs. 1 (two-dimensional layout 2) and 3 (three-dimensional, shoe upper 3); Ex. 1020, figs. 1 (two-dimensional helmet swatch) and 2 (three-dimensional helmet). Further, Schuessler II teaches that the two-dimensional helmet swatch of Figure 1 of Schuessler I may be knit to shape on a flat knitting machine. Paper 37, 11 (citing Ex. 1023 ¶ 15). Petitioner contends, therefore, that a person of ordinary skill in the art would have reason to combine the teachings of these three references to achieve the invention recited in substitute claim 47. *Id.*

Patent Owner does not argue Petitioner's assessment of the teachings of these references. Patent Owner also does not dispute that all of the limitations of the claims are taught in the prior art. Instead, Patent Owner argues that Petitioner's contention that a person of ordinary skill in the art would combine Nishida's teaching regarding the reduction of waste by placing layouts in adjoining positions and Schuessler I's teaching regarding knitting textile elements to shape is illogical. Paper 44, 5. Specifically, Patent Owner argues that Petitioner's reason for combining these teachings is somehow flawed because "*after* they are combined the elements of each reference serve the same purpose." *Id.* As the U.S. Supreme Court explained, however, "if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious

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unless its actual application is beyond his or her skill." *KSR Int'l Co. v. Teleflex Inc.*, 555 U.S. 398, 417 (2007). In this case, that the elements of the prior art references would "serve the same purpose" when combined is a factor in favor of an obviousness determination, and not a suggestion of non-obviousness, as urged by Patent Owner.

Because we are persuaded that Petitioner has demonstrated that the teachings of Nishida and Schuessler I and II teach or suggest all of the limitations of substitute claim 47 and that a person of ordinary skill in the art would have had reason to combine the teachings of these references to achieve the recited article of footwear, we determine that Patent Owner fails to meet its burden of showing that it is entitled to the relief requested in its motion to amend. Because we group substitute claims 48-50 with claim 47 for purposes of assessing patentability, we also determine that Patent Owner fails to meet its burden of showing that it is entitled to the relief requested in its motion to amend with respect to substitute claims 48-50. Consequently, the portion of Patent Owner's motion to amend requesting entry of substitute claims 47-50 also is *denied* for failing to demonstrate that the substitute claims are patentable over Nishida and Schuessler I and II.

E. Petitioner's Motion to Exclude

Petitioner has filed a motion seeking to exclude the following evidence: (1) certain portions of the transcript of the cross-examination of Dr. Frederick (Ex. 2009, pg. 116, ll. 3-25); and (2) references to this testimony by Patent Owner's expert, Dr. Tonkel (Ex. 2010 ¶ 65). Paper 44, 3-5. As

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the movant, Petitioner has the burden of establishing that it is entitled to the requested relief. 37 C.F.R. § 42.20(c).

Petitioner seeks to exclude certain portions of the testimonial evidence obtained by Patent Owner during the cross-examination of Petitioner's expert, Dr. Frederick. Paper 49, 1. In particular, Petitioner argues that, contrary to the requirements of 37 C.F.R. § 42.53(d)(5)(ii), Patent Owner's cross-examination of Dr. Frederick exceeded the scope of Dr. Frederick's direct testimony (Ex. 1001), which was limited to the construction of terms of original claims 1-46 and to the unpatentability of those original claims in view of grounds identified by Petitioner. Paper 49, 1. Petitioner argues that Patent Owner questioned Dr. Frederick regarding "flat knit edges," a term that did not appear in original claims 1-46, but which Patent Owner included in the substitute claims of its motion to amend. *Id.*; *see also* Paper 54, 3-4.

Although Petitioner argues that Patent Owner's questioning of Dr. Frederick exceeded the scope of his direct testimony, Petitioner only objected to one of several questions in the testimony that it seeks to exclude, and Petitioner stated an "*[o]bjection to form*" with respect to that question, not an objection that the question or any of the preceding questions sought testimony that was *beyond the scope* of the Dr. Frederick's direct testimony. Ex. 2009, pg. 116, l. 24 (emphasis added); *see* Paper 54, 2-3.

Moreover, Petitioner requests that we grant its motion to exclude the portions of the transcript of the cross-examination of Dr. Frederick *preceding* the question that was the subject of Petitioner's objection. *Id.* at 5-6 (citing Ex. 2009, pg. 116, ll. 3-25). As a result of the grant of this

motion, references to this challenged testimony by Patent Owner's expert, Dr. Tonkel, (Ex. 2010 ¶ 65) also presumably would be excluded.

Patent Owner opposes Petitioner's motion to exclude. In particular, Parent Owner argues that: (1) Petitioner did not object to most of the questions or testimony that it now seeks to exclude, objecting only to a single question; (2) the elicited testimony related to aspects of Dr. Frederick's direct testimony; (3) the elicited testimony pertained to Dr. Frederick's credibility as an expert witness regarding the patented technology; and (4) Patent Owner elicited the testimony without the use of leading questions, i.e., in the proper form. Paper 51, 1.

The current situation does not require us to assess the merits of Petitioner's motion to exclude. As discussed above, even without relying upon the aforementioned portions of the cross-examination testimony of Dr. Frederick, we have concluded that Patent Owner has demonstrated that the term "flat knit edges" of substitute claims 47-50 is supported by the disclosure of the '289 Application. Accordingly, Petitioner's motion to exclude evidence is *dismissed* as moot.

III. CONCLUSION

For the reasons set forth above, we grant the portion of Patent Owner's motion to amend requesting cancellation of claims 1-46 of the '011 Patent. In its motion to amend, Patent Owner has not met its burden of establishing the patentability of substitute claims 47-50. Therefore, we deny

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the portion of Patent Owner's motion to amend requesting entry of substitute claims 47-50.

This is a final decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IV. ORDER

In consideration of the foregoing, it is

ORDERED that the portion of Patent Owner's motion to amend requesting cancellation of claims 1-46 of the '011 Patent is *granted*;

FURTHER ORDERED that the portion of Patent Owner's motion to amend requesting entry of substitute claims 47-50 is *denied*; and

FURTHER ORDERED that Petitioner's motion to exclude evidence is *dismissed* as moot.

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Case IPR2013-00067
Patent 7,347,011 B2

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U.S. DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

August 25, 2014
(Date)

THIS IS TO CERTIFY that the attached document is a list of the papers that comprise the record before the Patent Trial and Appeal Board (PTAB) for the *Inter Partes Review* proceeding identified below.

Adidas AG
Petitioner
v.

NIKE, Inc.
Patent Owner

Case: IPR2013-00067
Patent No. 7,347,011 B2

By authority of the

DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

Kyia Graham

Certifying Officer

Prosecution History IPR2013-00067

Date	Document
11/28/2012	Petition for Inter Partes Review
11/28/2012	Power of Attorney
11/30/2012	Notice of Incomplete Petition
12/4/2012	Notice of Filing Date Accorded to Petition
12/10/2012	Revised Petition for Inter Partes Review
12/14/2012	Related Matters
1/25/2013	Mandatory Notice
1/25/2013	Power of Attorney
2/28/2013	Mandatory Notice (Change of Lead and Back-uP Counsel)
2/28/2013	Preliminary Response to Petition
5/17/2013	Decision - Institution of Inter Partes Review
5/17/2013	Scheduling Order
6/14/2013	Notice of Stipulation
6/14/2013	Patent Owner's List of Proposed Motions
6/19/2013	Order - Conduct of the Proceeding
7/11/2013	Stipulation Regarding Discovery Relating to Expert Witness
7/11/2013	Motion to Authorize Withdrawal of Counsel and Appointment of New Counsel
7/11/2013	Power of Attorney
7/17/2013	Notice of Cross Examination
8/2/2013	Order - Conduct of the Proceeding
8/12/2013	Order - Case Transfer to Administrative Patent Judge Josiah C. Cocks
8/19/2013	Motion to Amend
8/19/2013	Patent Owner's Exhibit List
8/19/2013	Corrected Certificate of Service
8/29/2013	Patent Owner's Exhibit List
10/30/2013	Decision - Motion to Withdraw Counsel
11/1/2013	Petitioner's Amended Notice of Cross Examination - Tonkel
11/12/2013	Petitioner's Opposition to Motion to Amend
11/12/2013	Petitioner's Exhibit List
11/26/2013	Patent Owner's Notice of Cross-Examination -Adanur
11/26/2013	Patent Owner's Notice of Second Cross Examination - Frederick
11/26/2013	Submission of Power of Attorney
11/26/2013	Petitioner's Power of Attorney
11/26/2013	Mandatory Notice
12/11/2013	Patent Owner's Reply to Opposition to Motion to Amend
12/11/2013	Patent Owner's Exhibit List
1/7/2014	Patent Owner's Exhibit List
1/7/2014	Patent Owner's Request for Oral Argument
1/7/2014	Petitioner's Request for Oral Argument
1/7/2014	Petitioner's Motion to Exclude Evidence

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Prosecution History IPR2013-00067

Date	Document
1/13/2014	Order -Trial Hearing
1/21/2014	Patent Owner's Opposition to Motion to Exclude
1/23/2014	Order -Conduct of the Proceeding
1/28/2014	Mandatory Notice
1/28/2014	Petitioner's Reply to Opposition to Motion to Exclude Evidence
2/6/2014	Petitioner's Exhibit List
2/6/2014	Patent Owner's Trial Hearing Demonstratives
3/5/2014	Oral Hearing Transcript
4/28/2014	Final Written Decision

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US007347011B2

(12) **United States Patent**
Dua et al.

(10) **Patent No.: US 7,347,011 B2**
(45) **Date of Patent: Mar. 25, 2008**

(54) **ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER**

(75) Inventors: **Bhupesh Dua**, Portland, OR (US); **Edward Nathaniel Thomas**, Portland, OR (US)

(73) Assignee: **NIKE, Inc.**, Beaverton, OR (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 506 days.

(21) Appl. No.: **10/791,289**

(22) Filed: **Mar. 3, 2004**

(65) **Prior Publication Data**

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(51) **Int. Cl.**
A43B 1/04 (2006.01)

(52) **U.S. Cl.** ..... **36/45**; 36/10; 36/3 A

(58) **Field of Classification Search** ..... 36/45, 36/3 A, 10, 55

See application file for complete search history.

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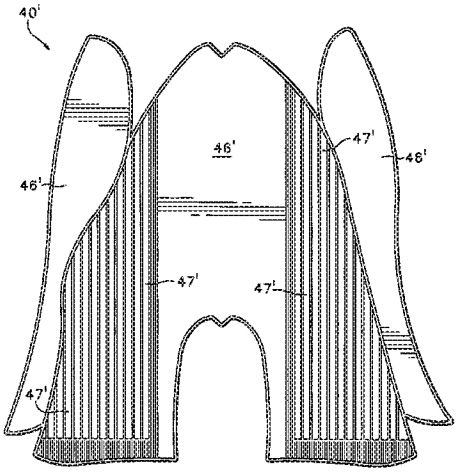
Santoni S.p.A. publication: Knitting Wear, SM8 Top 1 (2 pages).

Primary Examiner—Marie Patterson
(74) *Attorney, Agent, or Firm*—Banner & Witcoff, Ltd.

(57) **ABSTRACT**

An article of footwear and a method of manufacturing the article of footwear are disclosed. The footwear may include an upper and a sole structure. The upper incorporates a textile element with edges that are joined together to define at least a portion of a void for receiving a foot. The textile element may also have a first area and a second area with a unitary construction. The first area is formed of a first stitch configuration, and the second area is formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element. Various warp knitting or weft knitting processes may be utilized to form the textile element.

46 Claims, 12 Drawing Sheets



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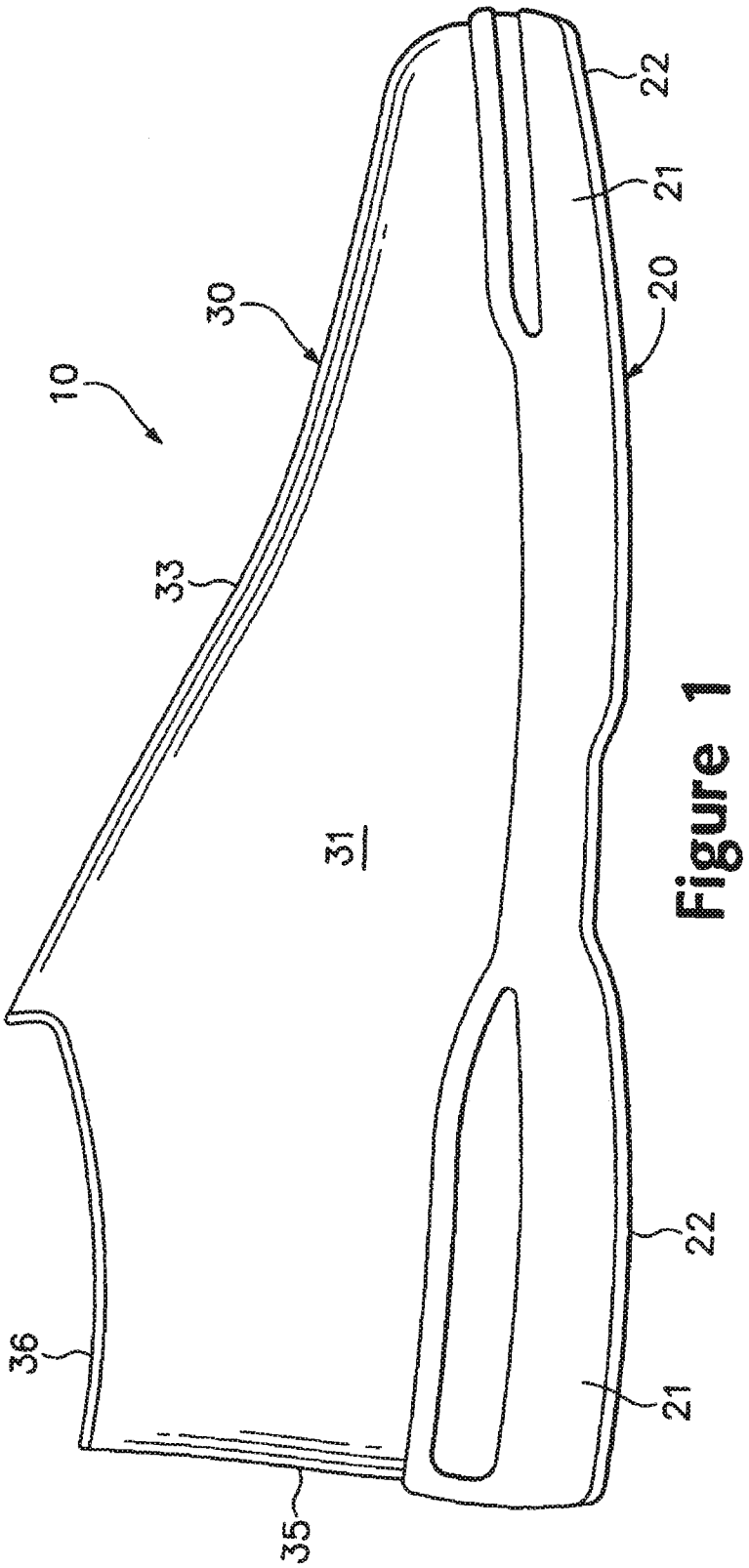


Figure 1

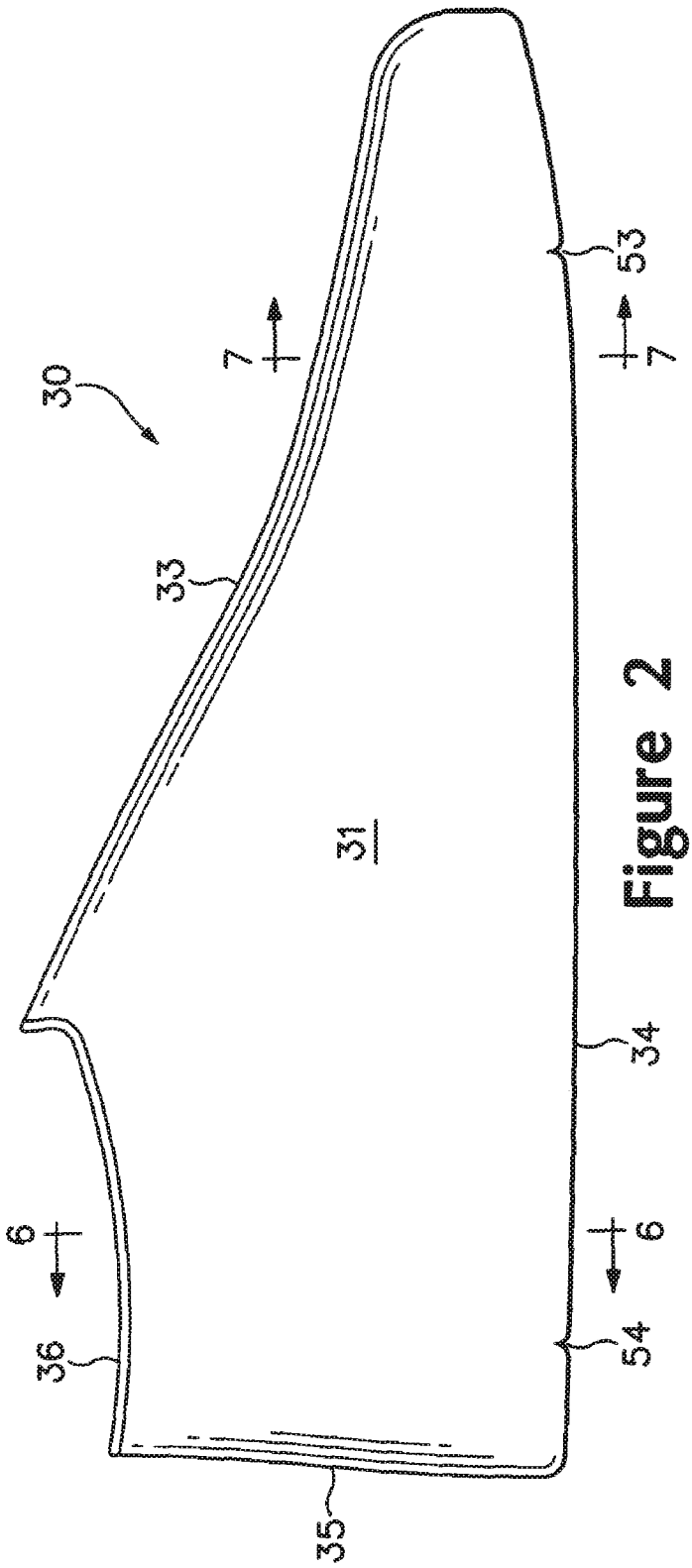


Figure 2

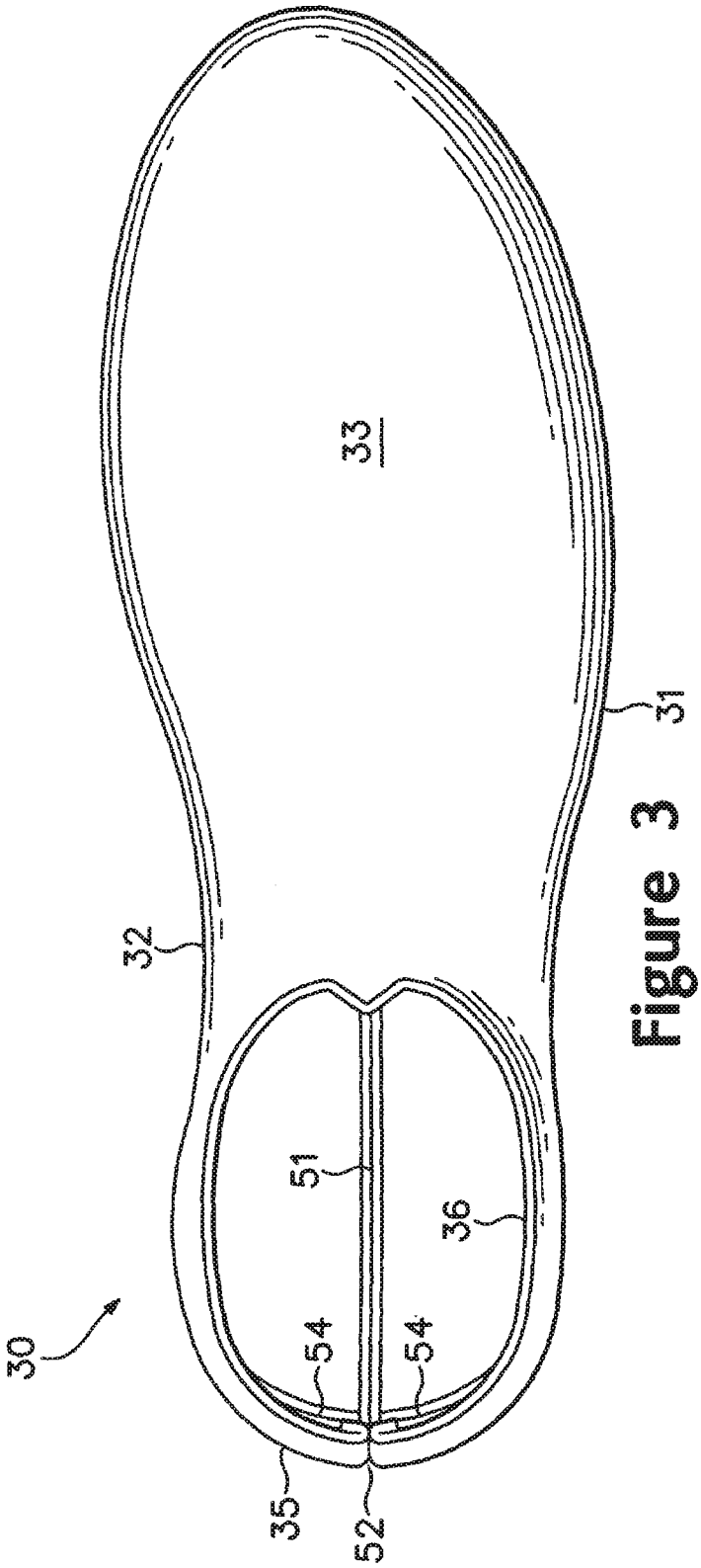


Figure 3

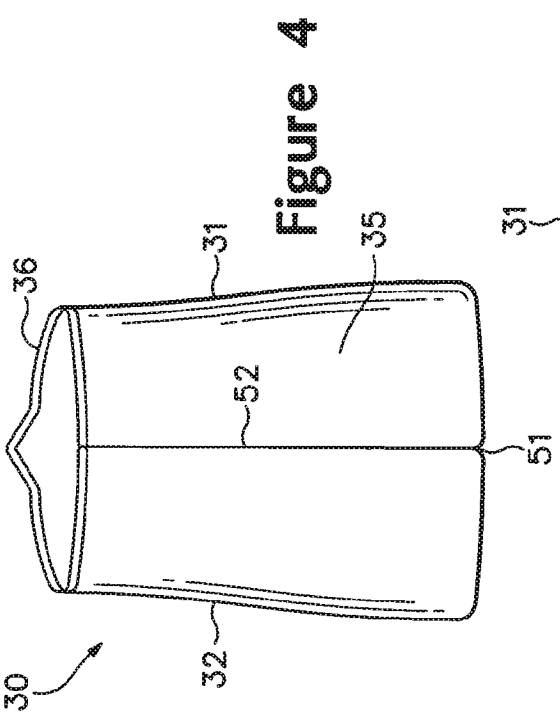


Figure 4

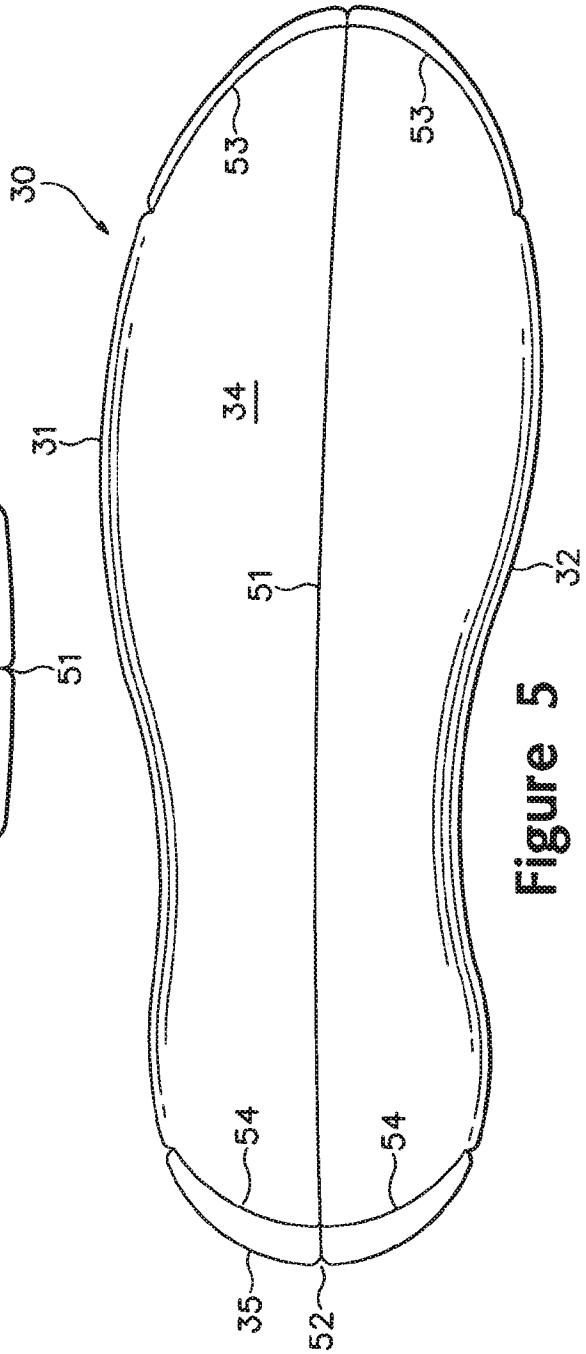


Figure 5

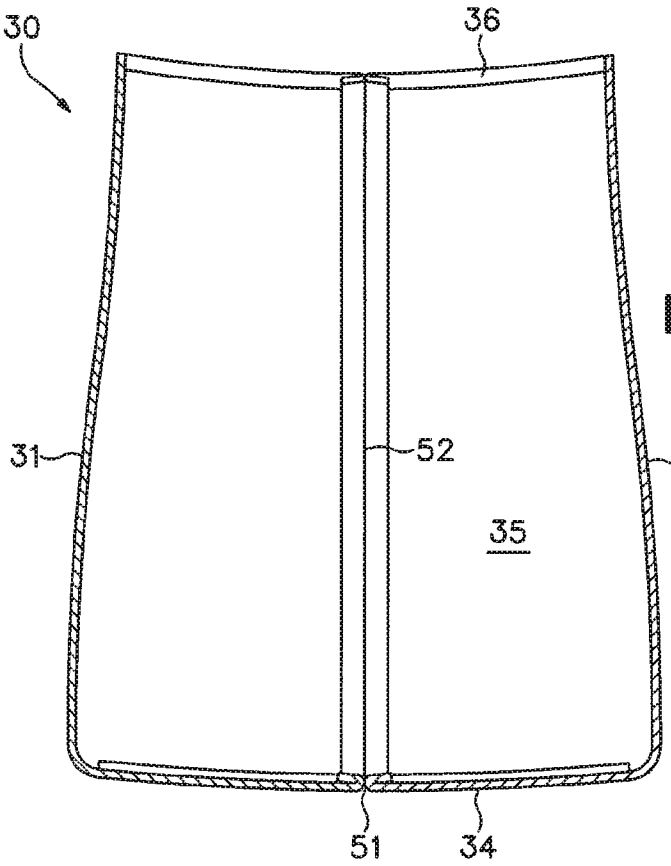


Figure 6

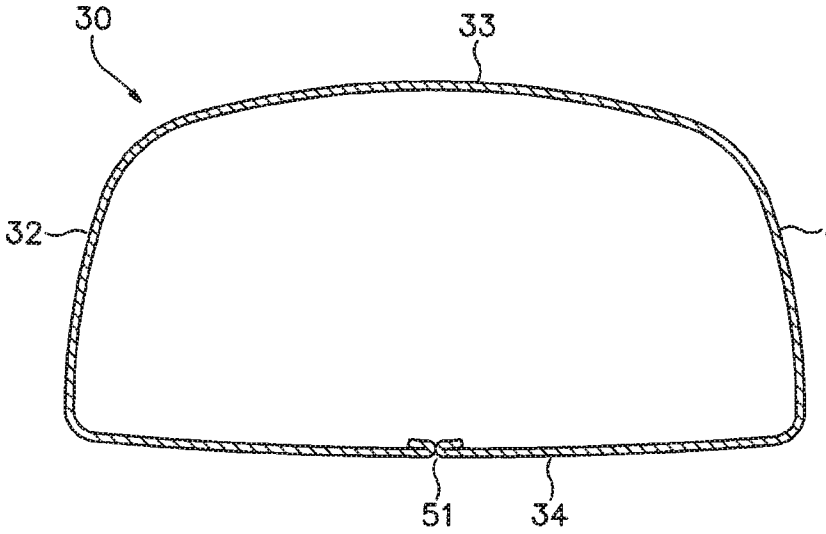


Figure 7

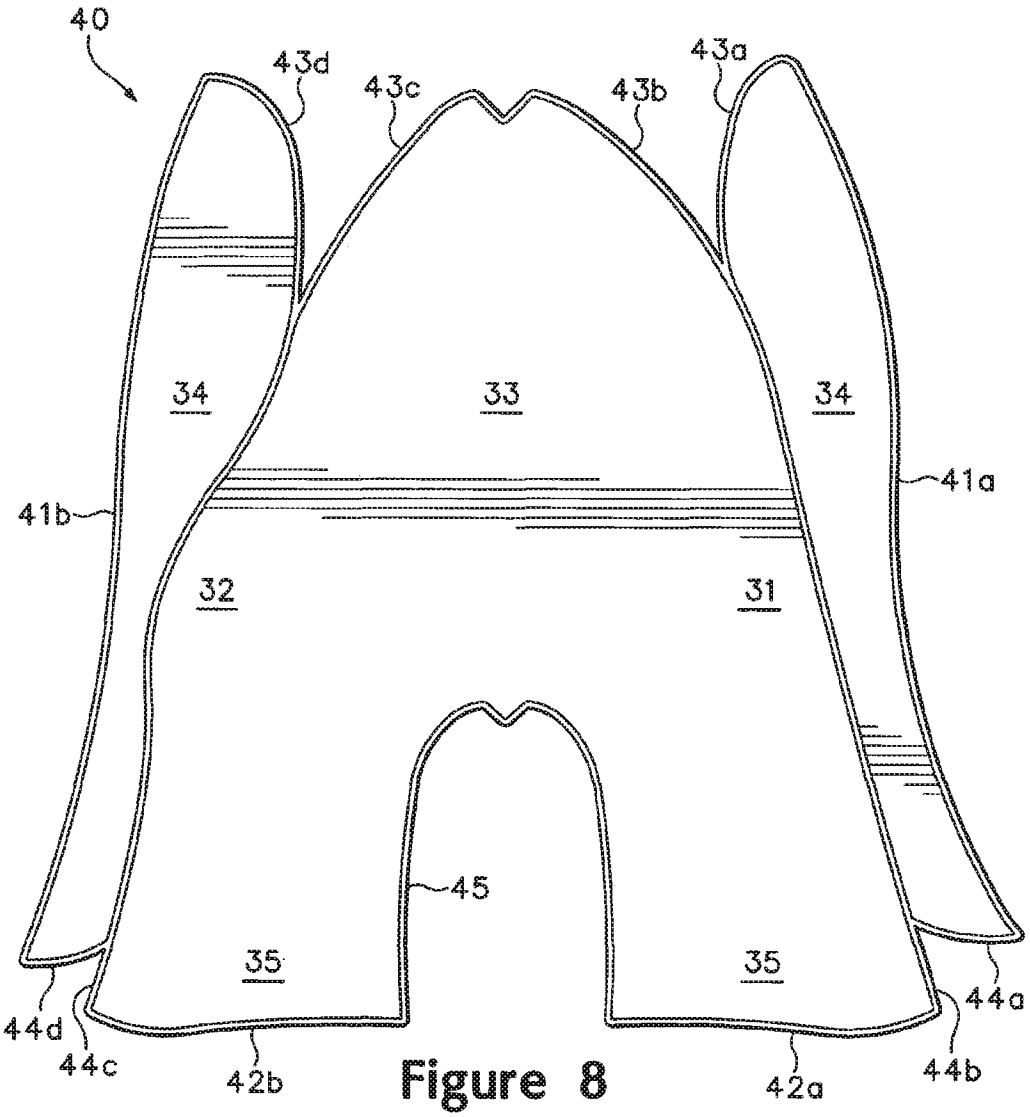

40
43d
43c
43b
43a
34
33
34
41b
41a
32
31
45
35
35
44d
44c
42b
42a
44b
44a

Figure 8

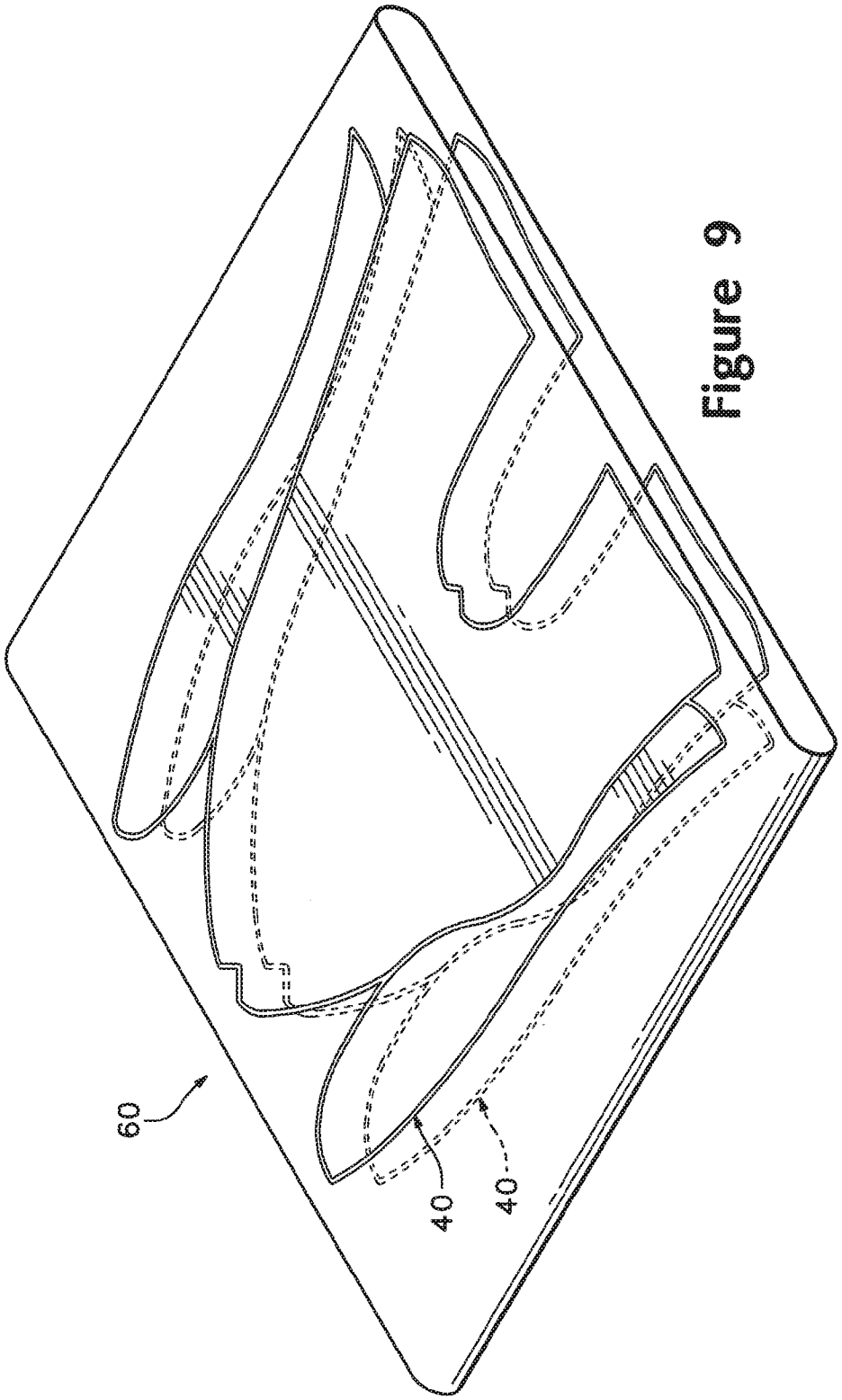


Figure 9

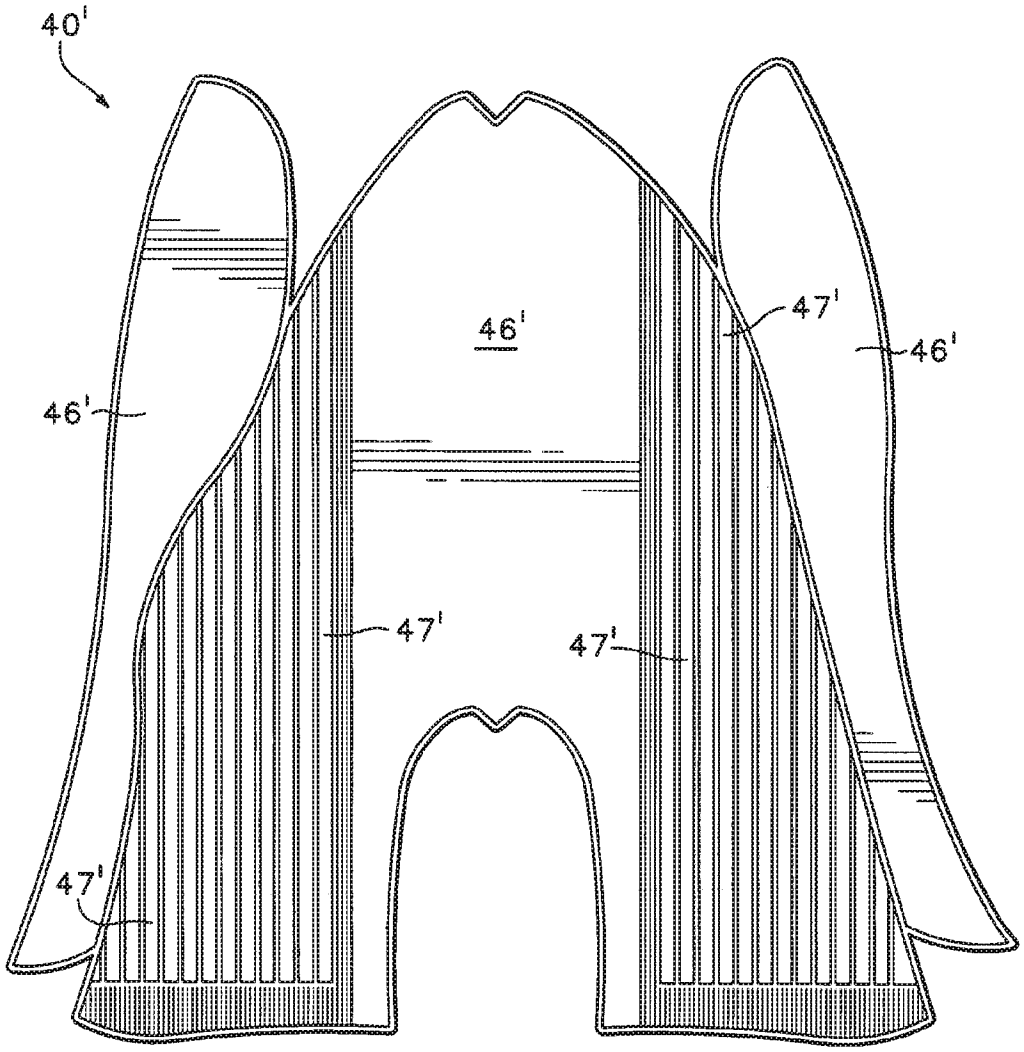


Figure 10

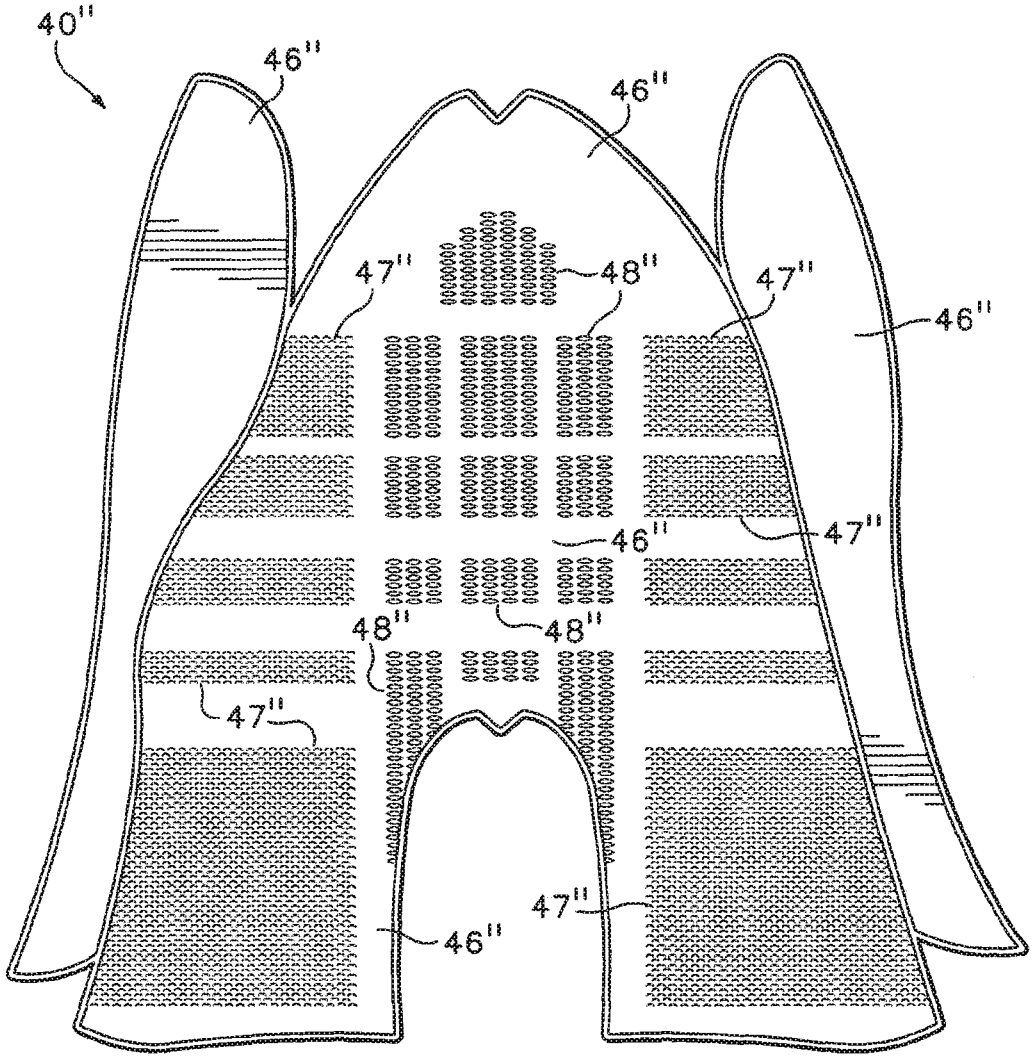


Figure 11

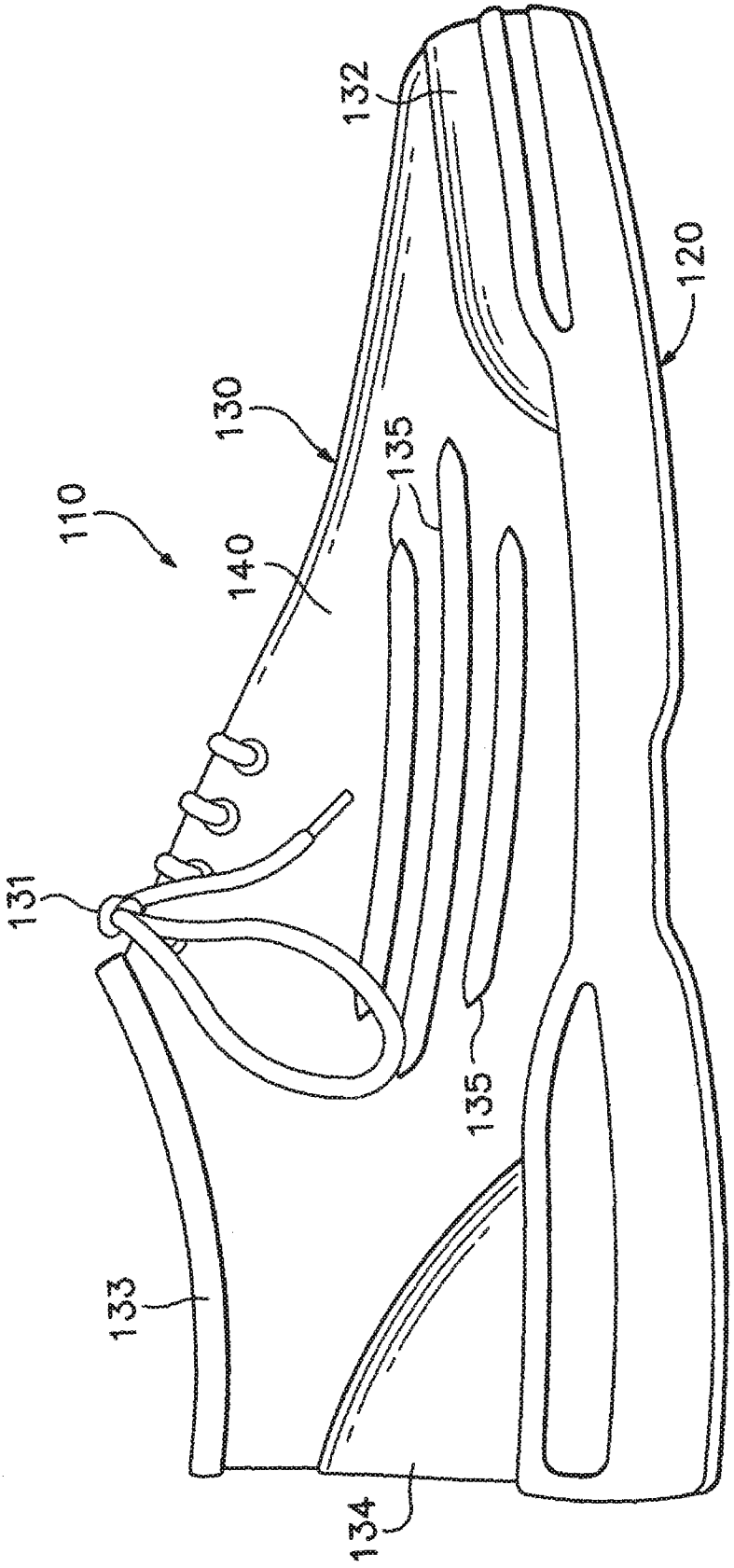


Figure 12

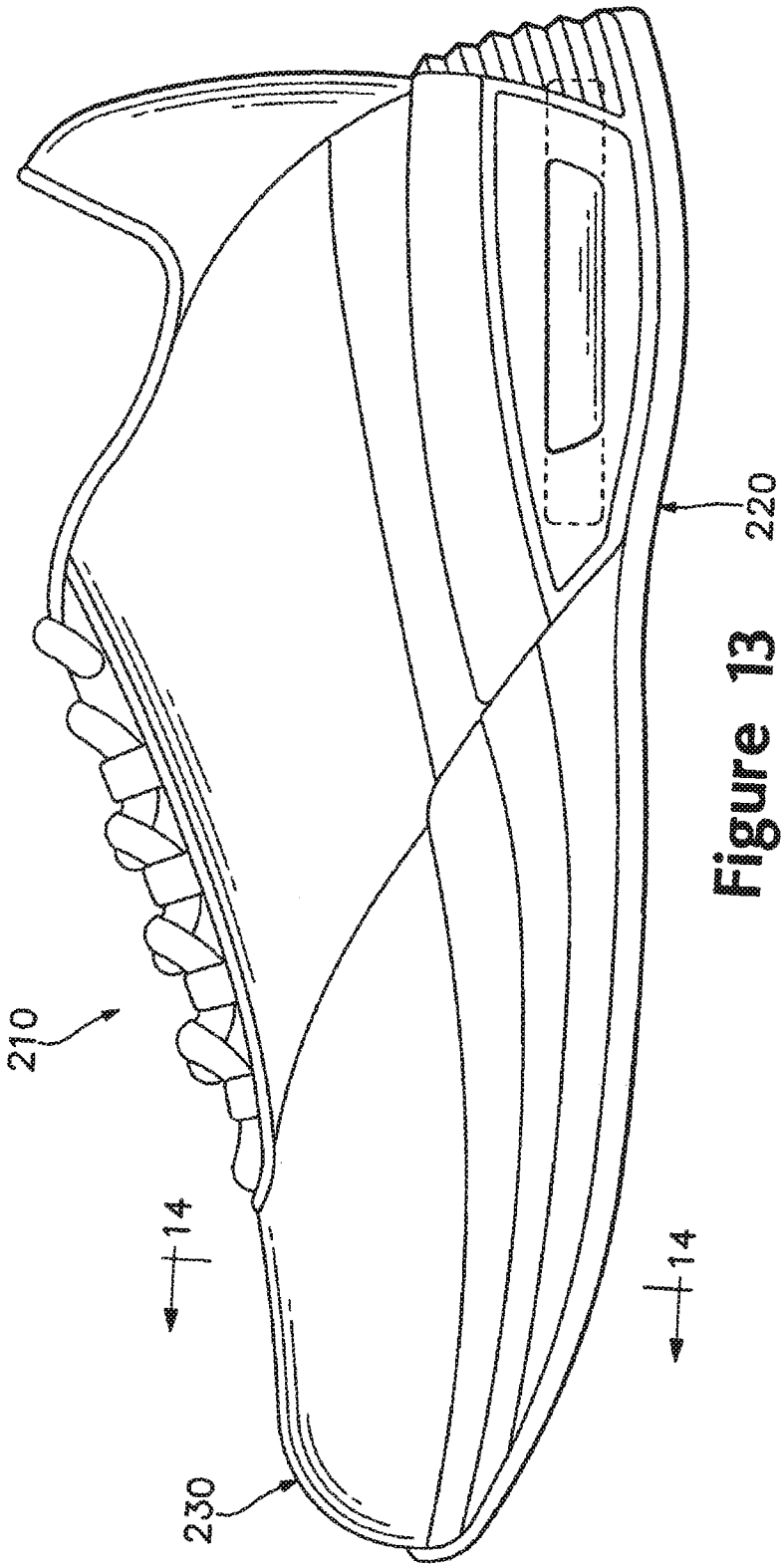


Figure 13

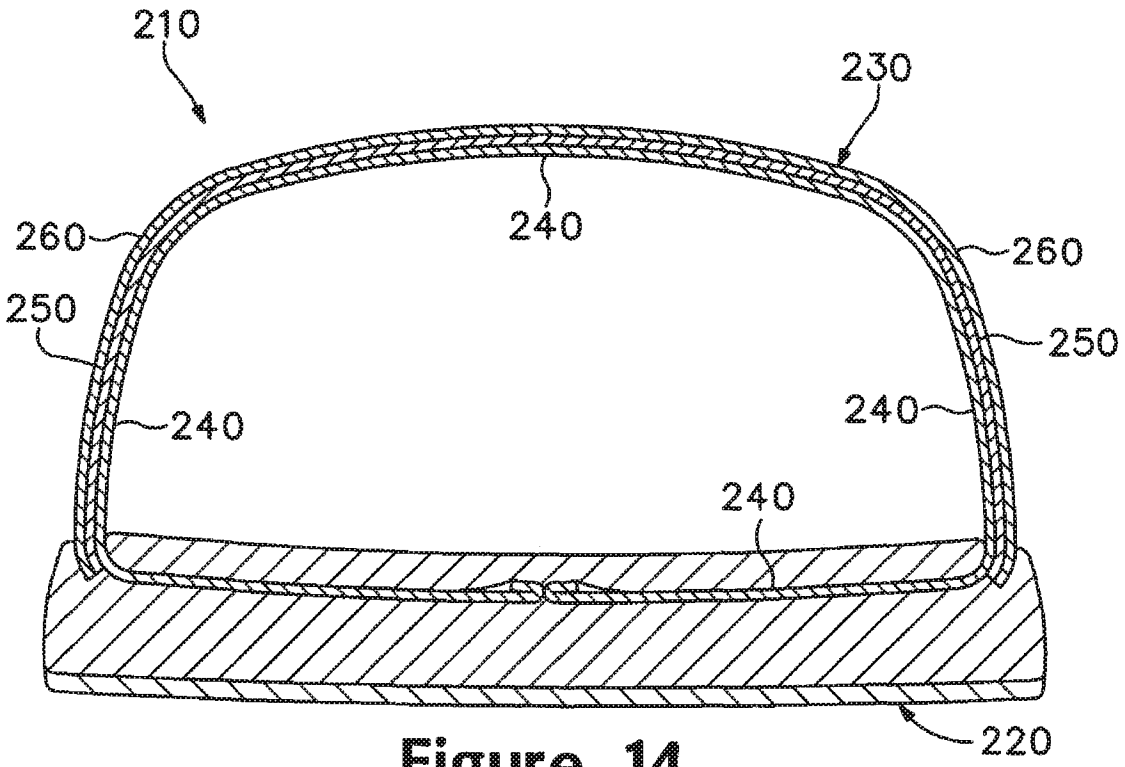


Figure 14

ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to footwear. The invention concerns, more particularly, an article of footwear incorporating an upper that is at least partially formed from a textile material.

2. Description of Background Art

Conventional articles of athletic footwear include two primary elements, an upper and a sole structure. The upper provides a covering for the foot that securely receives and positions the foot with respect to the sole structure. In addition, the upper may have a configuration that protects the foot and provides ventilation, thereby cooling the foot and removing perspiration. The sole structure is secured to a lower surface of the upper and is generally positioned between the foot and the ground. In addition to attenuating ground reaction forces and absorbing energy (i.e., imparting cushioning), the sole structure may provide traction and control potentially harmful foot motion, such as over pronation. Accordingly, the upper and the sole structure operate cooperatively to provide a comfortable structure that is suited for a wide variety of ambulatory activities, such as walking and running. The general features and configuration of the conventional upper are discussed in greater detail below.

The upper forms a void on the interior of the footwear for receiving the foot. The void has the general shape of the foot, and access to the void is provided by an ankle opening. Accordingly, the upper extends over the instep and toe areas of the foot, along the medial and lateral sides of the foot, and around the heel area of the foot. A lacing system is often incorporated into the upper to selectively increase the size of the ankle opening and permit the wearer to modify certain dimensions of the upper, particularly girth, to accommodate feet with varying proportions. In addition, the upper may include a tongue that extends under the lacing system to enhance the comfort of the footwear, and the upper may include a heel counter to limit movement of the heel.

Various materials may be utilized in manufacturing the upper. The upper of an article of athletic footwear, for example, may be formed from multiple material layers that include an exterior layer, an intermediate layer, and an interior layer. The materials forming the exterior layer of the upper may be selected based upon the properties of wear-resistance, flexibility, and air-permeability, for example. With regard to the exterior layer, the toe area and the heel area may be formed of leather, synthetic leather, or a rubber material to impart a relatively high degree of wear-resistance. Leather, synthetic leather, and rubber materials may not exhibit the desired degree of flexibility and air-permeability. Accordingly, various other areas of the exterior layer of the upper may be formed from a synthetic or natural textile. The exterior layer of the upper may be formed, therefore, from numerous material elements that each impart different properties to specific portions of the upper.

An intermediate layer of the upper may be formed from a lightweight polymer foam material that provides cushioning and protects the foot from objects that may contact the upper. Similarly, an interior layer of the upper may be formed of a moisture-wicking textile that removes perspiration from the area immediately surrounding the foot. In some articles of athletic footwear, the various layers may be joined with an adhesive, and stitching may be utilized to join elements within a single layer or to reinforce specific areas of the upper.

Although the materials selected for the upper vary significantly, textile materials often form at least a portion of the exterior layer and interior layer. A textile may be defined as any manufacture from fibers, filaments, or yarns characterized by flexibility, fineness, and a high ratio of length to thickness. Textiles generally fall into two categories. The first category includes textiles produced directly from webs of filaments or fibers by randomly interlocking to construct non-woven fabrics and felts. The second category includes textiles formed through a mechanical manipulation of yarn, thereby producing a woven fabric, for example.

Yarn is the raw material utilized to form textiles in the second category. In general, yarn is defined as an assembly having a substantial length and relatively small cross-section that is formed of at least one filament or a plurality of fibers. Fibers have a relatively short length and require spinning or twisting processes to produce a yarn of suitable length for use in textiles. Common examples of fibers are cotton and wool. Filaments, however, have an indefinite length and may merely be combined with other filaments to produce a yarn suitable for use in textiles. Modern filaments include a plurality of synthetic materials such as rayon, nylon, polyester, and polyacrylic, with silk being the primary, naturally-occurring exception. Yarn may be formed of a single filament, which is conventionally referred to as a monofilament yarn, or a plurality of individual filaments grouped together. Yarn may also include separate filaments formed of different materials, or the yarn may include filaments that are each formed of two or more different materials. Similar concepts also apply to yarns formed from fibers. Accordingly, yarns may have a variety of configurations that generally conform to the definition provided above.

The various techniques for mechanically manipulating yarn into a textile include interweaving, intertwining and twisting, and interlooping. Interweaving is the intersection of two yarns that cross and interweave at right angles to each other. The yarns utilized in interweaving are conventionally referred to as warp and weft. Intertwining and twisting encompasses procedures such as braiding and knotting where yarns intertwine with each other to form a textile. Interlooping involves the formation of a plurality of columns of intermeshed loops, with knitting being the most common method of interlooping.

The textiles utilized in footwear uppers generally provide a lightweight, air-permeable structure that is flexible and comfortably receives the foot. In order to impart other properties to the footwear, including durability and stretch-resistance, additional materials are commonly combined with the textile, including leather, synthetic leather, or rubber, for example. With regard to durability, U.S. Pat. No. 4,447,967 to Zaino discloses an upper formed of a textile material that has a polymer material injected into specific zones to reinforce the zones against abrasion or other forms of wear. Regarding stretch resistance, U.S. Pat. No. 4,813,158 to Brown and U.S. Pat. No. 4,756,098 to Boggia both disclose a substantially inextensible material that is secured to the upper, thereby limiting the degree of stretch in specific portions of the upper.

From the perspective of manufacturing, utilizing multiple materials to impart different properties to an article of footwear may be an inefficient practice. For example, the various materials utilized in a conventional upper are not generally obtained from a single supplier. Accordingly, a manufacturing facility must coordinate the receipt of spe-

cific quantities of materials with multiple suppliers that may have distinct business practices or may be located in different regions or countries. The various materials may also require additional machinery or different assembly line techniques to cut or otherwise prepare the material for incorporation into the footwear. In addition, incorporating separate materials into an upper may involve a plurality of distinct manufacturing steps requiring multiple individuals. Employing multiple materials, in addition to textiles, may also detract from the breathability of footwear. Leather, synthetic leather, or rubber, for example, are not generally permeable to air. Accordingly, positioning leather, synthetic leather, or rubber on the exterior of the upper may inhibit air flow through the upper, thereby increasing the amount of perspiration, water vapor, and heat trapped within the upper and around the foot.

SUMMARY OF THE INVENTION

The present invention is an upper for an article of footwear, the upper incorporating a textile element formed with a knitting machine, for example. In one aspect of the invention, the textile element has edges that are joined together to define at least a portion of a void for receiving a foot. In another aspect of the invention, the textile element has a first area and a second area of unitary construction. The first area is formed of a first stitch configuration, and the second area is formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element. The knitting machine may have a configuration that forms the textile element through either warp knitting or weft knitting.

Another aspect of the invention involves a method of manufacturing an article of footwear. The method includes a step of mechanically-manipulating a yarn with a circular knitting machine, for example, to form a cylindrical textile structure. In addition, the method involves removing at least one textile element from the textile structure, and incorporating the textile element into an upper of the article of footwear.

In another aspect of the invention, an article of footwear has an upper and a sole structure secured to the upper. The upper incorporates a textile element formed with a knitting machine. The textile element is removed from a textile structure that includes an outline of the textile element, and the textile element has edges that are joined together to define at least a portion of a void for receiving a foot.

The advantages and features of novelty characterizing the present invention are pointed out with particularity in the appended claims. To gain an improved understanding of the advantages and features of novelty, however, reference may be made to the following descriptive matter and accompanying drawings that describe and illustrate various embodiments and concepts related to the invention.

DESCRIPTION OF THE DRAWINGS

The foregoing Summary of the Invention, as well as the following Detailed Description of the Invention, will be better understood when read in conjunction with the accompanying drawings.

FIG. **1** is a lateral elevational view of an article of footwear having an upper in accordance with the present invention.

FIG. **2** is a lateral elevational view of the upper.

FIG. **3** is a top plan view of the upper.

FIG. **4** is a rear elevational view of the upper.

FIG. **5** is a bottom plan view of the upper.

FIG. **6** is a first cross-sectional view of the upper, as defined by section line **6-6** in FIG. **2**.

FIG. **7** is a second cross-sectional view of the upper, as defined by section line **7-7** in FIG. **2**.

FIG. **8** is a plan view of a textile element that forms at least a portion of the upper.

FIG. **9** is a perspective view of a textile structure that incorporates two of the textile element.

FIG. **10** is a plan view of another textile element.

FIG. **11** is a plan view of yet another textile element.

FIG. **12** is a lateral elevational view of another article of footwear having an upper in accordance with the present invention.

FIG. **13** is a lateral elevational view of yet another article of footwear having an upper in accordance with the present invention.

FIG. **14** is a cross-sectional view of the footwear depicted in FIG. **13**, as defined by section line **14-14**.

DETAILED DESCRIPTION OF THE INVENTION

The following discussion and accompanying figures disclose an article of footwear **10** and a method of manufacturing footwear **10**, or components thereof, in accordance with the present invention. Footwear **10** is depicted in the figures and discussed below as having a configuration that is suitable for athletic activities, particularly running. The concepts disclosed with respect to footwear **10** may, however, be applied to footwear styles that are specifically designed for a variety of other athletic activities, including basketball, baseball, football, soccer, walking, and hiking, for example, and may also be applied to various non-athletic footwear styles. Accordingly, one skilled in the relevant art will recognize that the concepts disclosed herein may be applied to a wide range of footwear styles and are not limited to the specific embodiments discussed below and depicted in the figures.

The primary elements of footwear **10** are depicted in FIG. **1** as being a sole structure **20** and an upper **30**. Sole structure **20** is secured to a lower portion of upper **30** and provides a durable, wear-resistant component that imparts cushioning as footwear **10** impacts the ground. Upper **30** is at least partially formed from a textile element **40** that defines an interior void for comfortably receiving a foot and securing a position of the foot relative to sole structure **20**. Various edges of textile element **40** are then secured together to form the shape of upper **30**. In some embodiments, textile element **40** may form substantially all of upper **30**, or textile element **40** may only be a portion of an upper.

Sole structure **20** has a generally conventional configuration that includes a midsole **21** and an outsole **22**. Midsole **21** is secured to a lower portion of upper **30** and is formed of a polymer foam material, such as ethylvinylacetate or polyurethane. Accordingly, midsole **21** attenuates ground reaction forces and absorbs energy (i.e., provides cushioning) as sole structure **20** impacts the ground. To enhance the force attenuation and energy absorption characteristics of sole structure **20**, midsole **21** may incorporate a fluid-filled bladder, as disclosed in U.S. Pat. Nos. 4,183,156 and 4,219,945 to Rudy. Alternately or in combination, midsole **21** may incorporate a plurality of discrete, columnar support elements, as disclosed in U.S. Pat. Nos. 5,343,639 and 5,353,523 to Kilgore et al. Outsole **22** is secured to a lower surface of midsole **21** and may be formed from carbon black rubber compound to provide a durable, wear-resistant surface for

engaging the ground. Outsole **22** may also incorporate a textured lower surface to enhance the traction characteristics of footwear **10**. In addition, footwear **10** may include an insole (not depicted), which is a relatively thin, cushioning member located within upper **30** and adjacent to a plantar surface of the foot for enhancing the comfort of footwear **10**.

Sole structure **20** is described above as having the elements of a conventional sole structure for athletic footwear. Other footwear styles, including, dress shoes and boots, for example, may have other types of conventional sole structures specifically tailored for use with the respective types of footwear. In addition to a conventional configuration, however, sole structure **20** may also exhibit a unique, non-conventional structure. Accordingly, the particular configuration of sole structure **20** may vary significantly within the scope of the present invention to include a wide range of configurations, whether conventional or non-conventional.

Upper **30** is depicted in FIGS. **2-7** as having a lateral region **31**, an opposite medial region **32**, an instep region **33**, a lower region **34**, and a heel region **35**. Lateral region **31** extends through a longitudinal length of footwear **10** and is generally configured to contact and cover a lateral side of the foot. Medial region **32** has a similar configuration that generally corresponds with a medial side of the foot. Instep region **33** is positioned between lateral region **31** and medial region **32**, and instep region **33** extends over an instep area of the foot. Lower region **34** forms a bottom surface of upper **30** and also extends through the longitudinal length of footwear **10**. Heel region **35** forms a rear portion of upper **30** and is generally configured to contact and cover a heel area of the foot. In addition, lateral region **31**, medial region **32**, instep region **33**, and heel region **35** cooperatively define an ankle opening **36** for providing the foot with access to the void within upper **30**.

Upper **30** is at least partially formed from textile element **40**, which forms regions **31-35**, and may also include laces or other elements associated with a conventional upper for footwear. Textile element **40** is a single material element that is formed to exhibit a unitary (i.e., one-piece) construction, and textile element **40** is formed or otherwise shaped to extend around the foot. As depicted in FIGS. **2-7**, textile element **40** forms both an exterior surface and an interior surface of upper **30**. Textile element **40** may be formed as a part of a larger textile element. Textile element **40** is then removed from the larger textile element and various edges of textile element **40** are secured together to form the shape of upper **30**. A plurality of seams **51-54** are formed, therefore, when joining the edges of the textile element. Seam **51** extends along the longitudinal length of lower region **34** and is centrally-located with respect to lateral region **31** and medial region **32**. Seam **52** is also centrally-located and extends upward along heel region **35**. A seam **53** is positioned in a forefoot area of upper **30** and joins a portion of lower region **34** with both of lateral region **31** and medial region **32**. In addition, a seam **54** is positioned in a rear area of upper **30** and joins a portion of lower region **34** with heel region **35**.

Textile element **40** exhibits the general shape depicted in FIG. **8** prior to the formation of seams **51-54**. Following formation of seams **51-54**, however, textile element **40** exhibits the shape of upper **30** depicted in FIGS. **2-7**. Seams **51-54** are formed by securing various edges of textile element **40** together. More specifically, (1) seam **51** is formed by securing an edge **41***a* with an edge **41***b*; (2) seam **52** is formed by securing an edge **42***a* with an edge **42***b*; (3) a first portion of seam **53** is formed by securing an edge **43***a* with an edge **43***b* (4) a second portion of seam **53** is formed by securing an edge **43***c* with an edge **43***d*; (5) a first portion of seam **54** is formed by securing an edge **44***a* with an edge **44***b*; and (6) a second portion of seam **54** is formed by securing an edge **44***c* with an edge **44***d*. Referring to FIG. **8**, the positions of regions **31-35** and ankle opening **36** are identified to provide a frame of reference relating to the various portions of textile element **40**.

In order to join edges **41***a* and **41***b* to form seam **51**, textile element **40** is folded or otherwise overlapped such that edge **41***a* is placed adjacent to edge **41***b*. Stitching, an adhesive, or heat bonding, for example, is then utilized to secure edge **41***a* and edge **41***b*. Textile element **40**, as depicted in FIG. **8**, has a generally planar configuration. Upon the formation of seam **51**, however, one portion of textile element **40** overlaps the other portion of textile element **40**. The volume between the overlapping portions effectively forms a portion of the void within upper **30** for receiving the foot.

The folding or overlapping of textile element **40** to form seam **51** places edge **42***a* adjacent to edge **42***b*, which facilitates the formation of seam **52**. With reference to FIG. **8**, an edge **45** forms a generally u-shaped area in textile element **40**. Upon the joining of edges **42***a* and **42***b* to form seam **52**, the u-shaped area becomes an aperture in textile element **40** and effectively forms ankle opening **36**. Each of edges **43***a*-**43***d* and edges **44***a*-**44***d* are formed from a generally v-shaped area of textile element **40**. Accordingly, seams **53** and **54** may be formed by closing the v-shaped areas and securing the various edges together.

Following the formation of each of seams **51-54**, the manufacturing of upper **30** is essentially complete. Various finishing steps may be performed, such as reinforcing ankle opening **36**, for example. Upper **30** (i.e., textile element **40**) is then secured to sole structure **20**, with an adhesive, for example. The insole is then placed into the void within upper **30** and adjacent to lower region **34**. In some embodiments, various reinforcing members may be added to the exterior or interior surface of upper **20** in order to limit the degree of stretch in upper **20** or provide enhanced wear-resistance. In addition, a lacing system may be added to provide adjustability.

Textile element **40** is a single material element with a unitary construction, as discussed above. As defined for purposes of the present invention, unitary construction is intended to express a configuration wherein portions of a textile element are not joined together by seams or other connections, as depicted with textile element **40** in FIG. **8**. Although the various edges **41***a*-**44***d* are joined together to form seams **51-54**, the various portions of textile element **40** are formed as an unitary element without seams, as discussed below.

Textile element **40** is primarily formed from one or more yarns that are mechanically-manipulated through either an interweaving, intertwining and twisting, or interlooping process, for example. As discussed in the Background of the Invention section above, interweaving is the intersection of two yarns that cross and interweave at right angles to each other. The yarns utilized in interweaving are conventionally referred to as warp and weft. Intertwining and twisting encompasses procedures such as braiding and knotting where yarns intertwine with each other to form a textile. Interlooping involves the formation of a plurality of columns of intermeshed loops, with knitting being the most common method of interlooping. Textile element **40** may, therefore, be formed from one of these processes for manufacturing a textile.

A variety of mechanical processes have been developed to manufacture a textile. In general, the mechanical processes

may be classified as either warp knitting or weft knitting. With regard to warp knitting, various specific sub-types that may be utilized to manufacture a textile include tricot, raschel, and double needle-bar raschel (which further includes jacquard double needle-bar raschel). With regard to weft knitting, various specific sub-types that may be utilized to manufacture a textile include circular knitting and flat knitting. Various types of circular knitting include sock knitting (narrow tube), body garment (seamless or wide tube), and jacquard.

Textile element **40** may be formed through any of the mechanical processes discussed above. Accordingly, textile element **40** may be formed on either a warp knitting machine or a weft knitting machine. One suitable knitting machine for forming textile element **40** is a wide-tube circular knit jacquard machine. Another suitable knitting machine for forming textile element **40** is a wide-tube circular knitting machine that is produced in the Lonati Group by Santoni S.p.A. of Italy under the SM8 TOP1 model number. This Santoni S.p.A. wide-tube circular knitting machine may form a textile structure having a diameter that ranges from 10 inches to 20 inches, with 8 feeds for each diameter. The machine exhibits a maximum 140 revolutions per minute for 10 inch diameters, and a maximum 120 revolutions per minute for 13 inch diameters. Furthermore, the machine gauge is variable between 16, 22, 24, 26, 28, and 32 needles per inch, and is suitable for various needle gauges ranging from 48 to 75.

A wide-tube circular knitting machine, as produced by Santoni S.p.A., forms a generally cylindrical textile structure and is capable of forming various types of stitches within a single textile structure. In general, the wide-tube circular knitting machine may be programmed to alter the design on the textile structure through needle selection. That is, the type of stitch that is formed at each location on the textile structure may be selected by programming the wide-tube circular knitting machine such that specific needles either accept or do not accept yarn at each stitch location. In this manner, various patterns, textures, or designs may be selectively and purposefully imparted to the textile structure.

An example of a textile structure **60** that may be formed with a wide-tube circular knitting machine is depicted in FIG. **9**. Textile structure **60** has a generally cylindrical configuration, and the types of stitches vary throughout textile structure **60** so that a pattern is formed with the outline of textile element **40**. That is, differences in the stitches within textile structure **60** form an outline with the shape and proportions of textile element **40**.

The Santoni S.p.A. wide-tube circular knitting machine may form a textile structure having a diameter that ranges from 10 inches to 16 inches, as discussed above. Assuming that textile structure **60** exhibits a diameter of 10 inches, then the circumference of textile structure **60** is approximately 31 inches. In many circumstances, the total width of textile element **40** will be approximately 12 inches, depending upon the size of footwear **10**. The outlines for at least two textile elements **40** may, therefore, be formed on textile structure **60**. Referring to FIG. **9**, the outline of textile element **40** is depicted on a front portion of textile structure **60**, and the outline of another textile element **40** is depicted on a rear portion of textile structure **60**. Accordingly, a first textile element **40** and a second textile element **40** may be simultaneously formed in a single textile structure **60**. As the diameter of textile element **60** is increased or the width of textile element **40** decreases, however, an even greater number of textile elements **40** may be outlined on textile structure **60**.

Textile structure **60** may be formed with a wide-tube circular knitting machine, as discussed above. The types of stitches that form textile structure **60** may be varied to form an outline of one or more textile elements **40** on textile structure **60**. That is, the wide-tube circular knitting machine may be programmed to form different types of stitches in textile structure **60** so as to outline one or more textile elements **40**. Each textile element **40** is then removed from textile structure **60** with a die-cutting, laser-cutting, or other conventional cutting operation. Once textile element **40** is removed from textile structure **60**, seams **51-54** may be formed and textile element **40** may be incorporated into footwear **10**.

The yarn forming textile element **40** may be generally defined as an assembly having a substantial length and relatively small cross-section that is formed of at least one filament or a plurality of fibers. Fibers have a relatively short length and require spinning or twisting processes to produce a yarn of suitable length for use in an interlooping process. Common examples of fibers are cotton and wool. Filaments, however, have an indefinite length and may merely be combined with other filaments to produce a yarn suitable for use in an interlooping process. Modern filaments include a plurality of synthetic materials such as rayon, nylon, polyester, and acrylic, with silk being the primary, naturally-occurring exception. Yarn may be formed of a single filament (conventionally referred to as a monofilament yarn) or a plurality of individual filaments. Yarn may also be formed of separate filaments formed of different materials, or the yarn may be formed of filaments that are each formed of two or more different materials. Similar concepts also apply to yarns formed from fibers. Accordingly, yarns may have a variety of configurations within the scope of the present invention that generally conform to the definition provided above.

In order to provide the stretch and recovery properties to upper **30**, and particularly textile element **40**, a yarn that incorporates an elastane fiber may be utilized. Elastane fibers are available from E.I. duPont de Nemours Company under the LYCRA trademark. Such fibers may have the configuration of covered LYCRA, wherein the fiber includes a LYCRA core that is surrounded by a nylon sheath. One suitable yarn, for example, includes a 70 denier elastane core that is covered with nylon having a 2 ply, 80 denier, 92 filament structure. Other fibers or filaments exhibiting elastic properties may also be utilized.

As discussed above, a yarn that incorporates elastane fibers is suitable for textile element **40**. A plurality of other yarns, whether elastic or inelastic, are also suitable for textile element **40**. The characteristics of the yarn selected for textile element **40** depend primarily upon the materials that form the various filaments and fibers. Cotton, for example, provides a soft hand, natural aesthetics, and biodegradability. Elastane fibers, as discussed above, provide substantial stretch and recoverability. Rayon provides high luster and moisture absorption. Wool also provides high moisture absorption, in addition to insulating properties. Polytetrafluoroethylene coatings may provide a low friction contact between the textile and the skin. Nylon is a durable and abrasion-resistant material with high strength. Finally, polyester is a hydrophobic material that also provides relatively high durability. Accordingly, the materials comprising the yarn may be selected to impart a variety of physical properties to textile element **40**, and the physical properties may include, for example, strength, stretch, support, stiffness, recovery, fit, and form.

Textile element **40** is depicted as having a generally smooth, non-varied stitch configuration. That is, similar stitches are utilized throughout textile element **40** to impart a common texture to the various portions of textile element **40**. As discussed above, however, a wide-tube circular knitting machine is generally capable of forming various types of stitches within a single textile structure. The wide-tube circular knitting machine may, therefore, vary the stitches within textile element **40** to produce various patterns, designs, or textures, for example. Various types of stitches may also be formed with other types of knitting machines. With reference to FIG. **10**, a textile element **40'** with the general shape of textile element **40** is depicted as having various areas with different textures. For example, a central area that corresponds with instep region **33** has a first texture **46'** that is generally smooth. In addition, textile element **40'** includes a second texture **47'** that is a plurality of longitudinal ribs. When incorporated into footwear **10**, the ribs will extend longitudinally along lateral region **31** and medial region **32**, and the ribs may extend into heel region **35**. The ribs may be present for aesthetic purposes, or may affect the stretch properties of upper **20**, for example. Accordingly, textile element **40'** exhibits areas with different textures in a single element of textile material.

Many conventional articles of footwear incorporate uppers with various material elements that each exhibit different properties. For example, a first material element may be smooth, and a second material element may be textured. The first and second material elements are then stitched together to form a portion of the conventional upper. Textile element **40'** also exhibits smooth and textured areas. In contrast with the conventional upper, however, first texture **46'** and second texture **47'** are incorporated into a single, unitary element of textile, rather than two separate elements that are stitched or otherwise joined together.

A textile structure **40"** is depicted in FIG. **11** and has the general shape of both textile element **40** and textile element **40'**. Textile element **40"** includes areas with three different textures. A first texture **46"** is generally smooth and has the configuration of various strips that extends laterally across areas corresponding with lateral region **31**, medial region **32**, and instep region **33**. Various portions of textile element **40"** also include a second texture **47"**, which is generally rough in comparison with first texture **46"**. In addition, the area of textile element **40"** corresponding with instep region **33** includes a third texture **48"**. The different textures **46"-48"** are formed by merely varying the type of stitch formed by the wide-tube circular knitting machine at each location of textile element **40"**. Textures **46"-48"** may exhibit aesthetic differences, or the differences may be structural. For example, the degree of stretch in areas with textures **46"-48"** may be different, or the wear resistance of the areas may vary depending upon the stitch utilized. The air-permeability of textile element **40"** may also vary in the different areas. Third texture **48"** is formed to include a plurality of apertures that extend through textile element **40"**. The apertures may be formed by omitting stitches at specific locations during the wide-tube circular knitting process, and the apertures facilitate the transfer of air between the void within upper **20** and the area outside of upper **20**. Accordingly, the various stitches formed in textile element **40"**, or one of textile elements **40** or **40'**, may be utilized to vary the texture, physical properties, or aesthetics of footwear **10** within a single, unitary element of material.

In addition to varying the stitch types to form textures **46'-47'** and **46"-48"**, the type of yarn utilized in various areas of textile elements **40'** and **40"** may be changed to impart different properties. As discussed above, yarn may be formed from cotton, wool, elastane, rayon, nylon, and polyester, for example. Each of these yarn types may impart differing properties to the areas corresponding with textures **46'-47'** and **46"-48"**. For example, elastane may be utilized to impart stretch, wool may be utilized for insulation, and nylon may be utilized for durability. Accordingly, different yarn types may be utilized to impart different properties. The types of knitting that may be utilized to form different zones with different properties (e.g., yarn characteristics, textures, etc.) may vary significantly to include the various warp knitting and weft knitting processes discussed earlier, such as tricot, raschel, double needle-bar raschel, circular knitting, and flat knitting, for example.

An article of footwear **110** is depicted in FIG. **12** and includes a sole structure **120** and an upper **130**. Upper **130** includes a textile element **140** having the general configuration of textile element **40**. As with textile element **40**, textile element **140** forms both an exterior surface and an interior surface of upper **130**. In addition, upper **130** includes a lace **131** and a plurality of elements **132-135** that also form a portion of the exterior surface. Lace **131** extends through a plurality of apertures formed in textile element **140**. The apertures may be formed by omitting stitches at specific locations. Element **132** is positioned in a forefoot area of footwear **110** and may be formed of leather or rubber, for example, to provide additional wear-resistance. Element **133** extends around the ankle opening to reinforce and limit stretch in the area of the ankle opening. Element **134** extends around the heel region to counter movement of the heel and seat the heel above sole structure **120**. Furthermore, elements **135** are substantially inextensible strips of material, such as leather or synthetic leather, that limit stretch on the lateral side of footwear **110**. Whereas upper **30** was almost exclusively formed by textile element **40**, upper **130** also includes lace **131** and elements **132-135**. Accordingly, an upper in accordance with the present invention may incorporate a plurality of additional components.

Another article of footwear **210** is depicted in FIGS. **13-14** and includes a sole structure **220** and an upper **230**. Upper **230** includes a textile element **240** that forms an interior layer. In addition, upper **230** includes an intermediate layer **250** and an exterior layer **260**. As discussed in the Background of the Invention section above, the upper of a conventional article of footwear may be formed from multiple material layers that include an exterior layer, a intermediate layer, and an interior layer. The materials forming the exterior layer of the upper may be selected based upon the properties of wear-resistance, flexibility, and air-permeability, for example. The intermediate layer of the upper may be formed from a lightweight polymer foam material that provides cushioning and protects the foot from objects that may contact the upper. Similarly, an interior layer of the upper may be formed of a moisture-wicking textile that removes perspiration from the area immediately surrounding the foot.

Upper **230** has a configuration that is similar to the configuration of the conventional upper in that various material layers are utilized. In contrast with the conventional upper, however, the interior layer is formed of textile element **240**, which is manufactured through the process discussed above. That is, textile element **240** is a single element of textile that forms the interior layer of upper **230**. A benefit to utilizing textile element **240** for the interior layer is that textile element **240** includes few seams that may contact the foot. In addition, the stitches utilized at various locations of textile element **240** may modify the texture of the interior

surface of upper **230**, thereby limiting the degree of slip that occurs between the foot and upper **230** or enhancing the air-permeability of upper **230** in specific locations.

Various warp knitting or weft knitting processes may be utilized to form textile element **40**, or the various other textile elements discussed above. An advantage of this process is that various stitches may be incorporated into specific locations of textile element **40** to modify the physical properties or aesthetics of textile element **40**. Whereas a conventional upper includes various elements that stitched or adhesively joined, textile element **40** is a single, unitary element of material. From the perspective of manufacturing, utilizing multiple materials to impart different properties to an article of footwear may be an inefficient practice. By forming textile element **40** to be a single, unitary element of material, however, efficiency is increased in that upper **20** may include a single textile element, rather than numerous joined elements.

A variety of knitting processes may be utilized to form textile element **40**, as discussed above. As a specific example, a jacquard double needle-bar raschel knitting machine may be utilized to form a flat textile structure, and may also be utilized to form the textile structure to have the configuration of a spacer mesh textile. Unlike textile structure **60**, which exhibits a generally cylindrical configuration, the textile structure formed with the jacquard double needle-bar raschel knitting machine will have a flat configuration. Like textile structure **60**, however, an outline of a textile element may be imparted to the textile structure formed with the jacquard double needle-bar raschel knitting machine. That is, differences in the stitches within the textile structure may form an outline with the shape and proportions of the intended textile element. Accordingly, the textile element may be removed from the textile structure and incorporated into footwear **10**. In addition, the jacquard double needle-bar raschel knitting machine may be utilized to impart various textures, different properties, or different yarn types to the textile element. Similarly, other types of knitting, such as a flat knitting, may be utilized within the scope of the present invention to impart various textures, different properties, or different yarn types to the textile element.

The present invention is disclosed above and in the accompanying drawings with reference to a variety of embodiments. The purpose served by the disclosure, however, is to provide an example of the various features and concepts related to the invention, not to limit the scope of the invention. One skilled in the relevant art will recognize that numerous variations and modifications may be made to the embodiments described above without departing from the scope of the present invention, as defined by the appended claims.

That which is claimed is:

1. An article of footwear comprising:

an upper incorporating a weft-knitted textile element having edges that are joined together to define at least a portion of a void for receiving a foot, wherein the weft-knitted textile element incorporates a single type of textile having a plurality of knit constructions; and

a sole structure secured to the upper.

2. The article of footwear recited in claim **1**, wherein the welt-knitted textile element forms at least a portion of a lateral side, a medial side, and an instep region of the upper.

3. The article of footwear recited in claim **1**, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper.

4. The article of footwear recited in claim **3**, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper.

5. The article of footwear recited in claim **4**, wherein the second seam extends vertically.

6. The article of footwear recited in claim **4**, wherein the edges include at least a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper.

7. The article of footwear recited in claim **1**, wherein the weft-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

8. The article of footwear recited in claim **1**, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the weft-knitted textile element farms at least a portion of the interior layer.

9. The article of footwear recited in claim **1**, wherein the weft-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper.

10. The article of footwear recited in claim **9**, wherein at least one additional element is secured to the exterior surface and forms a portion of the exterior surface.

11. The article of footwear recited in claim **10**, wherein the additional element is secured to a forefoot area of the upper.

12. The article of footwear recited in claim **10**, wherein the additional element is secured to a heel area of the upper.

13. The article of footwear recited in claim **1**, wherein the textile element forms an interior surface of the upper.

14. The article of footwear recited in claim **1**, wherein the weft-knitted textile element is created by circular knitting.

15. The article of footwear recited in claim **1**, wherein the weft-knitted textile element is created by flat knitting.

16. An article of footwear comprising:

an upper incorporating a weft-knitted textile element, the textile element 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.

17. The article of footwear recited in claim **16**, wherein the first stitch configuration provides a substantially smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smooth texture.

18. The article of footwear recited in claim **17**, wherein the second stitch configuration forms a rib structure in the second area.

19. The article of footwear recited in claim **16**, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the weft-knitted textile element.

20. The article of footwear recited in claim **16**, wherein the weft-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

21. The article of footwear recited in claim **16**, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the weft-knitted textile element forms at least a portion of the interior layer.

22. The article of footwear recited in claim **16**, wherein the textile layer forms at least a portion of both the interior surface and an exterior surface of the upper.

23. The article of footwear recited in claim **16**, wherein the weft-knitted textile element forms an interior surface of the upper.

24. An article of footwear comprising:

an upper incorporating a textile element having edges that are joined together to form seams and define at least a portion of a void for receiving a foot, the seams including a first seam and a second seam, the first seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper, and the second seam extending vertically in the heel area, wherein the textile element incorporates a single type of textile having a plurality of knit constructions; and

a sole structure secured to the upper.

25. The article of footwear recited in claim 24, wherein the footwear includes a third seam extending through the forefoot area of the upper.

26. The article of footwear recited in claim 24, wherein at least one of the knit constructions forms an aperture in the textile element.

27. The article of footwear recited in claim 24, wherein the knit constructions produce varying properties in the textile element including a varying elasticity of the textile element.

28. The article of footwear recited in claim 24, wherein the knit constructions produce varying properties in the textile element including a varying air permeability of the textile element.

29. The article of footwear recited in claim 24, wherein the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

30. The article of footwear recited in claim 24, wherein the textile element forms at least a portion of both an interior surface and an exterior surface of the upper.

31. The article of footwear recited in claim 24, wherein the textile element forms an interior surface of the footwear, and at least one additional layer forms an exterior surface of the footwear.

32. The article of footwear recited in claim 24, wherein at least a portion of the textile element has a weft knitted construction.

33. The article of footwear recited in claim 32, wherein the weft knitted construction is produced by one of circular knitting and flat knitting.

34. The article of footwear recited in claim 24, wherein the textile element has a warp knitted construction.

35. The article of footwear recited in claim 34, wherein the warp knitted construction is produced by a jacquard double needle-bar raschel.

36. An article of footwear comprising:

an upper incorporating a knitted textile element formed with a knitting machine, the textile element being removed from a textile structure that includes an outline of the textile element, and the textile element having edges that are joined together to define at least a portion of a void for receiving a foot, wherein the textile element incorporates a single type of textile having a plurality of knit constructions; and

a sole structure secured to the upper.

37. The article of footwear recited in claim 36, wherein the knitted textile element has a structure formed by a wide-tube circular knitting machine.

38. The article of footwear recited in claim 36, wherein the knitted textile element has a structure formed by a jacquard double needle-bar raschel knitting machine.

39. The article of footwear recited in claim 36, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper.

40. The article of footwear recited in claim 39, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper.

41. The article of footwear recited in claim 40, wherein the edges include at least a pair of third edges that are joined to form a second seam extending through a forefoot area of the upper.

42. The article of footwear recited in claim 36, wherein the knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

43. The article of footwear recited in claim 36, wherein the knitted textile element forms an interior surface of the upper.

44. An article of footwear comprising:

an upper incorporating a flat-knitted textile element, the flat-knitted textile element having a first area with a first unitary construction and a second area with a second unitary construction different from the first unitary construction, the first area having a first set of properties, and the second area having a second set of properties that is different from the first set of properties to impart varying characteristics to the textile element; and

a sole structure secured to the upper.

45. The article of footwear recited in claim 44, wherein the first set of properties and the second set of properties are at least one of a stitch configuration and a yarn type.

46. The article of footwear recited in claim 44, wherein the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 7,347,011 B2
APPLICATION NO. : 10/791289
DATED : March 25, 2008
INVENTOR(S) : Bhupesh Dua et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title page, Item (56), References Cited section, Other Publications:
Please insert the following reference: --International Search Report in corresponding PCT application, International Application No. PCT/US2005/004776, mailed May 19, 2005.--

In Column 11, Claim 2, Line 62:
Please replace "welt-knitted" with --weft-knitted--

In Column 12, Claim 8, Line 15:
Please replace "farms" with --forms--

In Column 12, Claim 23, Line 66:
Please replace "textilc" with --textile--

Signed and Sealed this

Seventeenth Day of February, 2009

JOHN DOLL
Acting Director of the United States Patent and Trademark Office

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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adidas AG
Petitioner

v.

Nike, Inc.
Patent Owner

Patent No. 7,347,011
Filing Date: March 3, 2004
Issue Date: March 25, 2008
Title: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

Inter Partes Review No. Unassigned

PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100 *ET SEQ.*

DECLARATION OF DR. EDWARD C. FREDERICK

I. Background and Qualifications

1. I, Dr. Edward C. Frederick, make this declaration in connection with the petition by adidas AG ("adidas") for *Inter Partes* Review of U.S. Patent No. 7,347,011 ("the '011 Patent") owned by Nike, Inc.

2. I make this declaration based upon personal knowledge. I am over age 21 and otherwise competent to make this declaration.

3. The statements herein include my opinions and the bases therefore, which relate to the '011 Patent and various prior art references that disclose features found in the claims of the '011 Patent. Although I am being compensated for my time at a rate of $250 per hour in preparing this declaration, the opinions herein are my own, and I have no stake in the outcome of the review proceeding, My compensation does not depend in any way on the outcome of adidas's petition.

4. I am President of Exeter Research, Inc. in Brentwood, New Hampshire. I have more than thirty years of experience in the sporting goods industry, including extensive experience in footwear design and biomechanics, as well as footwear development and manufacturing. Further, I am an active researcher in footwear biomechanics and have published more than one hundred articles in international journals, books and conference proceedings. In addition, I

am inventor or a co-inventor on 16 issued patents including 10 U.S. utility patents relating to footwear.

5. I have been intimately involved with the creation of more than two-dozen new products over the years and have supervised the design and development of hundreds of new products. This experience encompasses doing the background research to come up with new concepts, developing the product concepts, writing design briefs, creating designs, writing specifications, developing tech packages, managing the step-by-step development of the product, commercializing the product, managing production trials, and hands-on testing as well as managing the testing of the product and its components and materials. The choice of materials, constructions and processes, has been an important part of that experience.

6. A copy of my *curriculum vitae* is attached hereto, and it includes a listing of prior experience as an expert in litigation and patent reexamination matters.

II. Materials Reviewed

7. In forming my opinions, I have reviewed (i) the '011 Patent and its prosecution history that is available on the U.S. Patent Office website; and (ii) prior art to the '011 Patent, including (a) U.S. Patent No. 2,147,197 to Glidden; (b) U.S. Patent No. 2,314,098 to McDonald; (c) U.S. Patent No. 2,641,004 to Whiting;

(d) U.S. Patent No. 4,785,558 to Shiomura; (e) U.S. Patent No. 5,345,638 to Nishida; (f) PCT International Publication No. WO 90/03744 to Curley; (g) Japanese Patent Publication No. H6-113905 to Osamu Daimaru (including an English translation thereof); and (h) the reference text "Knitting Technology: A comprehensive handbook and practical guide," 3rd edition, by David J. Spencer, published in 2001. I understand the prior art references identified above will be included with the petition for *inter partes* review filed with the U.S. Patent Office.

III. Person of Ordinary Skill in the Art of the '011 Patent

8. Counsel for adidas has informed me that the content of a patent or other printed publication (*e.g.*, prior art reference) should be interpreted the way a person of ordinary skill in the art would have interpreted the reference at the time the application for the '011 Patent was filed in the United States – March 3, 2004.

9. In my opinion, the person of ordinary skill in the art for the '011 Patent would have at least several years' experience with all aspects of shoemaking from the conceptual stage through design, development, commercialization, and manufacturing. The cycle of design and development of a new footwear product takes roughly 18 months and there are seven or more decision points during this cycle where the choice of upper materials and production processes are addressed. The person of ordinary skill has been through many and varied product cycles with projects representing a typical range constructions. In addition, a person of

ordinary skill in the art would have basic knowledge of the functional requirements of footwear and a comprehensive understanding of the range of material choices, as well as construction techniques and processes used to create the various parts of a shoe and to assemble them in a proper manner.

10. I have been asked by adidas's counsel to assume that the person of ordinary skill is a hypothetical person who is assumed to be aware of all the pertinent information that qualifies as prior art. In addition, the person of ordinary skill in the art makes inferences and creative steps. He or she is not an automaton, but has ordinary creativity.

11. Based on my experience, I have an understanding of the capabilities of the skilled person in this field, and my opinions are provided from the perspective of such a person.

IV. Standards for Claim Construction, Anticipation, and Obviousness

12. I understand from counsel for adidas that, in a review proceeding, the claims are to be given their broadest reasonable construction consistent with the patent specification. I also understand that limitations from the specification are not to be read into the claims.

13. Counsel for adidas has informed me that a patent claim is invalid as anticipated (i.e., invalid under 35 U.S.C. § 102) if every limitation of a claim is found identically (either expressly, implicitly, or inherently) in a reference. A

26. The '011 Patent explains how the various edges of the textile element are joined together, forming several seams along the heel, toe, and longitudinal length of the bottom of upper, to make the shape of the upper, and the upper is then secured to the sole. (5:41-6:40)

27. The '011 Patent emphasizes that the textile element is a single material element with unitary construction (6:41-50):

> Textile element 40 is a single material element with a unitary construction, as discussed above. As defined for purposes of the present invention, unitary construction is intended to express a configuration wherein portions of a textile element are not joined together by seams or other connections, as depicted with textile element 40 in FIG. 8. Although the various edges 41a-44d are joined together to form seams 51-54, the various portions of textile element 40 are formed as an unitary element without seams, as discussed below.

28. The '011 Patent describes that the textile element may be formed any number of ways with one or more yarns that are mechanically manipulated using a variety of existing processes (6:51-65):

> Textile element 40 is primarily formed from one or more yarns that are mechanically-manipulated through either an interweaving, intertwining and twisting, or interlooping process, for example. As discussed in the Background of the Invention section above, interweaving is the intersection of two yarns that cross and interweave at right angles to each other. The yarns utilized in interweaving are conventionally referred to as warp and weft. Intertwining and twisting encompasses procedures such as braiding and knotting where yarns intertwine with each other to form a textile. Interlooping involves the formation of a plurality of columns of intermeshed loops, with knitting being the most common method of interlooping. Textile

- the upper has interior, intermediate, or exterior layers and the textile element forms at least portion of interior layer (claims 8, 21)
- the textile element forms a portion of both interior and exterior surface of upper (claim 9, 22)
- an additional element secured to and forming portion of exterior surface (claims 10-12)
- the textile element forms interior surface of upper (claim 13, 23, 43)
- circular knitting or circular knitting machine is used (claims 14, 33, 37)
- flat knitting is used (claims 15, 33)
- varying stitch configurations, or smooth, rougher/ribbed stitching (claims 17, 18, 45)
- apertures in the textile element (claims 19, 26)
- warp knitting and specific type of machine (claims 24, 35, 38)

VI. Overview of the Prior Art and the Trivial Nature of the Features Claimed in the '011 Patent.

37. The claims of the '011 Patent recite features that were well known in the prior art in March 3, 2004, when the application for the '011 Patent was filed.

38. Knitted uppers of a unitary construction with modifications of stitches, yarn types, patterns, or constructions in different areas for creating various functional regions have been known for decades. For example, such constructions have been described in detail in several U.S. patents, including U.S. Patent No.

5,345,638 to Nishida ("Nishida"), U.S. Patent No. 2,147,197 to Glidden ("Glidden"), and U.S. Patent No. 2,314,098 to McDonald ("McDonald"). Japanese Patent Publication No. H6-113905 to Osamu Daimaru ("Osamu") describes a similar unitary upper made with a woven fabric, instead of a knit.

39. I have reviewed other prior art, some of which is relevant to some of the dependent claims, including U.S. Patent No. 2,641,004 to Whiting ("Whiting"), U.S. Patent No. 4,785,558 to Shiomura ("Shiomura"); and PCT International Publication No. WO 90/03744 to Curley ("Curley"). These prior art references describe additional features of shoe uppers made with knitted fabrics. I also consulted the reference text "Knitting Technology: A comprehensive handbook and practical guide," 3rd edition, by David J. Spencer, published in 2001 ("Spencer"). All of these references are prior art under 35 U.S.C. § 102(b) (mentioned in above in Section IV), as they were all published more than one year before Nike filed the application for the '011 Patent on March 3, 2004.

40. A central teaching of the '011 Patent is that knitting complete uppers is more efficient than joining together separately made pieces of various materials. This is common sense, and it was also taught by Nishida, Glidden, and McDonald well before the '011 Patent application was filed.

41. For example, Nishida states "For production of a shoe upper by cutting out the shoe upper in the form of a layout from a web of material, shaping

choice from among a number of known, available choices that have been available to the shoe designer and engineer for many years.

53. Indeed the '011 Patent spells this out clearly at the bottom of column 6 and continued in column 7. It describes the use of various processes for forming the necessary textile element of the invention, including interweaving, intertwining or twisting, or interloping processes. ('011 Patent, 6:51-53) In column 7, the '011 Patent goes on to describe the use of warp knitting including the sub-types tricot, racschel, double needle-bar raschel and jacquard double needle-bar raschel, as well as weft knitting and its sub-types described including circular and flat knitting. ('011 Patent, 7:1-10) Significantly, the '011 Patent states that the textile element may be formed through any of the mechanical processes discussed in the specification. ('011 Patent, 6:63-65; 7:11-12)

54. Weft knit describes a type of knitted fabric in which yarns are formed into stitches in widthwise manner. Common examples of weft knits are circular knits and flat knits.

(Fabriclink.com; http://www.fabriclink.com/dictionaries/textile.cfm#W).

Examples of weft knit fabrics used in footwear are: spacer meshes; nylon, polyester, and, cotton meshes; weft-knit polyester suedes; terry; ribbed knits, and jersey. Some jacquard knit are also weft double-knit fabrics.

VII. Claims 1-46 of the '011 Patent Are Anticipated and/or Obvious in View of U.S. Patent No. 5,345,638 to Nishida

66. As further explained in the claim chart below, it is my opinion that claims 1-46 of the '011 patent are invalid in view of the Nishida patent alone or Nishida combined with other prior art.

67. Nishida was issued by the Patent Office on September 13, 1994 and is entitled "Process for Producing a Shoe-Shaped Part from a Web of Material and Resulting Shoe-Shaped Part." The Abstract of Nishida states:

> For the production of a shoe upper by cutting out of the shoe upper in the form of a layout from a web of material, shaping of the shoe upper with connection of material parts of the layout with formation of seams, a process is used by which such shoe uppers can be produced in a timesaving and efficient manner despite the many individual parts present or to be made visible. For this purpose, a web of material (1) is used to produce layouts (2) by different production measures, such as different styles, yarn material, color, material thickness, single layer or multilayer type of material or the like, at the same time with the production of web of material (1), and with a sole part attached to the layout. The layout is cut from the web as a unit with the sole part and processed into a shoe part having an upper and sole part.

68. Nishida explains at 3:6-26:

> In FIGS. 1 and 2, a web of material is identified by 1, and is produced by a conventional textile process, tier example, by weaving and/or knitting and/or embroidering. The web of material 1 can be provided with a single or with a plurality of layouts 2 of the shape of a shoe upper 3, as it is represented from the side, for example, in FIG. 3.
>
> The web of material has a backing 4 that can be a conventionally used material formed, for example, of a warp and filling or a knitted fabric. Layout 2 is divided into different individual parts or areas, which differ from one another, such as by being of another material style

> and/or by being of different fibers or yarns, for example, from wool, wool with metal yarns, silk, silk with metal yarns, wool with plastic fibers or the like and/or by being formed of different colors, such as from fibers or yarns of different colors, including those of metals, or by different color prints, and/or by being differently designed fiber extrudates or fiber extrudate compositions, such as twisted, processed parallel or the like.

69. Nishida also describes the advantages of multiple configurations or designs and the advantages of his invention, including low weight and reduced costs (4:12-18 and 4:52-60):

> As can be seen, any number of layouts 2 in the most varied configurations and/or designs as well as of different sizes can be produced on a single web of material 1. For this purpose, above all, the use of program-controlled, particularly computer-controlled, production devices is advantageous, so that style, color, design, size or the like can be varied at will.
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> * * *
>
> As already indicated, any sizes and different upper designs can be produced by computer-controlled programs, starting from corresponding basic patterns. The completed shoe uppers produced from such webs of material are marked by an extremely low weight, for example, between 70 to 80 g in a shoe size of 8. The costs for the production of such uppers are exceptionally low in comparison with previously known processes.

70. In the chart below, all citations are to Nishida, except where I specifically identify that I am citing to another prior art reference. I have included direct quotations from Nishida in some instances.

71. In my opinion, Nishida describes every feature of claims 1-16, 19-34, 36, and 39-46 and therefore anticipates those claims. Even if all of these claims

Nike '011 Patent Claims	Nishida
smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smooth texture.	second area that is rougher than the smooth texture (Glidden, p. 1, 2:41-44, where the ankle portion is made so as to provide softness and elasticity, such as a ribbed construction). In addition, McDonald describes a circular-knitted upper with a first stitch configuration for an ankle/heel, instep, and sole areas of the upper with a substantially smooth texture and a second stitch configuration for a different area that has a rougher, ribbed texture. (McDonald, p. 1, 2:26-49; Fig. 1) It would have been obvious to combine Nishida with Glidden or McDonald to vary the stitch configurations to provide one area with a substantially smooth texture and one are with a rougher or ribbed texture as a simple design choice, for aesthetics, because a ribbed texture may allow for more extensibility or stretchability, or because one may want a smoother interior layer adjacent the foot, for example.
18. The article of footwear recited in claim 17, wherein the second stitch configuration forms a rib structure in the second area.	As explained for claim 17, the second stitch configuration for the second area that forms the rougher texture is ribbed in both Glidden and McDonald, and it would have been obvious to modify Nishida for the same reasons as explained for claim 17.
19. The article of footwear recited in claim 16, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the weft-knitted textile element.	3:43-52; 6:25-31 3:43-52: "Since, generally, toe area 14 is designed to be relatively deformably soft or elastic, and optionally, also permeable to air, the web of material 1, in toe area 14, according to the present invention, is correspondingly designed by suitable selection of the weave pattern, knit pattern and/or the material used,

Nike '011 Patent Claims	Nishida
	such as, for example, Silk or plastic. The type of production can, additionally, insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a net-like woven or knitted structure." The '011 Patent describes that "apertures" are formed by omitting stitches to provide air permeability in the knitted textile element. ('011 Patent, 9:57-62) The "net-like" knitted structure described by Nishida has apertures for the same reason, air permeability.
20. The article of footwear recited in claim 16, wherein the weft-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.	Claim 20 adds the same limitation to independent claim 16 as claim 7 added to independent claim 1. Nishida describes the additional limitations of claim 20 – see discussion for claim 7 in chart.
21. The article of footwear recited in claim 16, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the weft-knitted textile element forms at least a portion of the interior layer.	Claim 21 adds the same limitation to independent claim 16 as claim 8 added to independent claim 1. Nishida describes the additional limitations of claim 21 or they are obvious in view of Curley or Shiomura – see discussion for claim 8 in chart.
22. The article of footwear recited in claim 16, wherein the textile layer forms at least a portion of both	Claim 22 adds the same limitation to independent claim 16 as claim 9 added to independent claim 1, except that claim 22 recites "the textile "layer" instead of "textile element." I have assumed this is a typographical error because claim 16 does not otherwise identify a "textile

84. Glidden describes every element of claims 1, 2, 7-14, and 16-23, and therefore anticipates those claims. These claims are likewise obvious in view of Glidden combined with either McDonald or Whiting.

Nike '011 Patent Claims	Glidden
1. An article of footwear comprising:	Title; p.1,1:1-4 "This invention relates to articles of footwear and to methods of making the same, and is especially useful in the manufacture of shoes having textile uppers."
an upper incorporating a weft-knitted textile element having edges that are joined together to define at least a portion of a void for receiving a foot,	Figs. 1, 6, 8 p. 1, 2:3-10: "Referring to the drawings, the invention contemplates the construction of an article of footwear in which an upper of extensible and elastic textile material, such, for example, as knited material, and of such extent as to form the complete upper including the insole, is fabricated without substantial waste to the desired shape to accommodate the foot without uncomfortable wringles." p. 1, 2:45-48: "In the embodiment of Fig. 1 the entire upper, preferably including the insole, is fabricated as an integral, shaped, sock-like article although in some cases the insole portion may be omitted if that is desired." The skilled person would know from Glidden's description of fabricating the upper as a shaped, "sock-like" article, as well as the knit patterns in the drawings, that Glidden is describing and showing a weft-knitted textile element. In addition, the skilled person would know that

Nike '011 Patent Claims	Glidden
	knitting the unitary upper in a "sock-like" fabrication process would have utilized circular knitting, which has been used for making socks for many decades. This would require the edges to be joined, at least in the area of the toe, in order to create a void for receiving the foot (otherwise, it would be an open tube if those edges were not joined) For example, Whiting dates to 1953 and describes a method for producing knitted shoe uppers of shrinkable yarn, including knitting the sock-like structure that forms the upper on "flat or circular knitting machines." (Whiting, 2:39-56) As another example, McDonald dates to 1943 and describes a method of making shoes including use of a "conventional type of circular knitting machine" to form a "weft knit fabric" used to make the upper of a shoe. (McDonald, p. 1 at 2:26-39)
wherein the weft-knitted textile element incorporates a single type of textile having a plurality of knit constructions; and	Fig. 1 p.1, 2:33-44 "In fabricating the unitary upper, as by knitting, areas thereof which are normally subjected to greater wear and in which a lower degree of elasticity is desired, such as the toe 11 and the heel portion 12, may be more densely fabricated to provide therein heavier weight and less extensibility than in the other parts of the upper, as by changing the type of stitch or amount or thickness of the yarn in the knitting. Other areas, such as the ankle portion 13, are preferably made so as to provide softness and elasticity as by making them of ribbed construction, as shown."
a sole structure secured to the upper.	Figs. 1, 6 p. 2, 1:9-19; p. 2, 2:8-15; p. 2, 2:23-30

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Edward C. Frederick

Objective

To contribute to the research, design and development of innovative and functional products. To consult on Product Design & Development and Advanced Product Development and Research.

Career Summary

Over thirty years experience in the sporting goods industry. Extensive experience in footwear design, development and manufacturing, expert in footwear biomechanics research and advanced product development.

Work experience

Dec. 99-present Exeter Research, Inc. Brentwood, NH
President

- Research and development services for the sports and fitness industries
- Consultation on new product development, advanced concepts and, biomechanics research and functional testing of new products
- Design, manufacture and sales of special test equipment and software for traction, impact shock attenuation, and shoe flexibility testing

Jun 08 -present Footwear Science Abingdon, Oxford, UK
Editor-in-Chief

- Responsible for the scientific quality and content of the Journal
- Official representative of the journal in external matters
- Manages the peer review process and editing of all manuscripts
- Overseas issue planning and the work of the editorial board
- Responsible for implementing and applying the Journal's editorial policies

Feb 96-Dec. 99 **Converse, Inc.** N. Reading, MA & Taiwan
Senior Vice-President, Research, Design and Development (97-99)
Chief Product Executive (96-97)

- Responsible for all aspects of new product research, design and development for Converse.
- Research and Development facilities in US, China, and Taiwan
- Responsible for staff of 50 people in US and 26 in Taiwan
- Creation and management of $6.5 Million budget
- Managed introduction of new Helium technology

June 87-April 97 **Exeter Research, Inc** Exeter, NH - USA

President

- Research and development services for the sports and fitness industries. New product development, advanced concepts and, biomechanics research and functional testing to a wide range of companies including: Nike, adidas, Converse, Fila, Sole Technology, Rolllerblades, Asolo, Lotto, Rossignol, Avia, Dr. Scholls, Nordica, Timberland, Inc., Wilson SG, Inc., Spenco Medical Corp., Sorbothane, Inc., Li Ning, & the US Biathlon Team.
- Design, manufacture and sales of special test equipment and software for traction, impact shock attenuation, force measurement, ski glide performance testing, and shoe flexibility testing
- Recruited, trained and managed a staff of biomechanists, industrial designers, testing engineers, and footwear developers.

Sept.86-June 87 **Penn State University** University Park, PA

Associate Professor of Locomotion Studies

- Research & graduate instruction: locomotion studies and biomechanics
- Consultant to Nike, Inc. on new technologies, research and testing.

Aug.80-Sept.86 **Nike, Inc** Exeter, NH & Beaverton, OR

Director of Research; Director of Research and Development

- Responsible for creating an advanced products research and development program at Nike. The Nike Sports Research Laboratory was established in 1980. The NSRL remains a viable part of Nike's extensive R&D efforts.
- Director of Research (1980-82). Established NSRL, responsible for recruiting and managing 12 scientists, engineers, and technicians.
- Director of Research & Development (1982-83): administrative and fiscal responsibility for the 150 plus employees and $8 million budget of all research and new product development programs at Nike. Established processes and scheduling procedures that improved R&D typical timelines from 2 years to an average of less than 9 months. Expanded R&D efforts into outdoor, cleated and court sports.
- Director of Research (1983-86). Responsible for research and development aspects of new corporate ventures, as well as advanced research on new product concepts.

Aug. 79-Aug. 80 **University of Montana** Missoula, MT

Assistant Professor of Zoology

- Major teaching responsibilities: Human Anatomy and Physiology, Comparative Anatomy, and Vertebrate Functional Morphology.
- Research on footwear biomechanics and functional morphology
- Consultant to Nike, Inc. on conceptualization, design, development and testing of new technologies, including Nike Air®.

Aug. 77-Aug 79 **University of Tennessee** Knoxville, TN

Assistant Professor of Zoology

- Major teaching responsibilities: Human Anatomy and Physiology, Comparative Anatomy, and Comparative Physiology.
- Research on footwear biomechanics and functional morphology
- Consultant to Nike, Inc. on conceptualization, design, development and testing of new technologies, including Nike Air®. (1978 on)

Jun. 76-Aug 77 **Museum of Northern Arizona** Flagstaff, AZ

Head, Publications Department; Research Biologist

- Directed production of museum publications
- Managed Staff of five producing 12 books and 2 periodicals per year
- Research on muscle design.

Aug. 73-Aug 76 **Northern Arizona University** Flagstaff, AZ

Instructor of Biology

- Courses taught: General Biology and Cell Physiology
- Research on muscle design

Special Academic Appointments

Sept. 95-present **University of Massachusetts** Amherst, MA

Adjunct Professor, Dept of Kinesiology, School of Public Health & Health Sciences

- Research collaboration, participation in advising graduate students, occasional lectures on sports biomechanics

Sept. 88 –Aug 90 **University of New Hampshire** Durham, NH

Adjunct Associate Professor, Dept of Phys. Ed., College of Health Sciences

- Research collaboration, participation in advising graduate students, occasional lectures on sports biomechanics and physiology

Education

1970 **B.A. in Zoology**, California State University at Humboldt
Areas of emphasis: general zoology and marine biology.

1973 **M.A. in Biology**, California State University at Humboldt
Areas of emphasis: neurophysiology, general physiology.

1977 **Ph.D. in Zoology**, Northern Arizona University
Areas of emphasis: vertebrate functional morphology, neural control of locomotion, locomotion biomechanics and muscle biology.

Editorships & Professional Service

1973-83 Founder, Science Editor and columnist for *Running* magazine.

1976-77 Editor *Plateau*, a natural & cultural history magazine.

1977 Editor, Journal *of the Arizona Academy of Sciences*.

1983-88 Associate Editor, Biomechanics, *Medicine & Science in Sports and Exercise*, Journal of the American College of Sports Medicine

1982-91 Technical Advisor and contributor, *American Health* magazine

1988-91 Editorial Board, *International Journal of Sports Biomechanics*,

1989-92 Editorial Board, *Cycling Science*

1989-93 Board Member, *Cycling Research Association*

1988-94 Board member, *United States Biathlon Association*,

1984-94 Sports Medicine Director, *U. S. Biathlon Association*. Coordination of medical care and all scientific services.

2008- present - Editor-in-Chief, *Footwear Science* a international, peer-reviewed journal published by Taylor & Francis.

Honors

1996 Jury, IOC Olympic Prize. *International Olympic Committee*. Member of six person international jury that chose the winner of this prestigious $250,000 prize for excellence in science applied to sport.

2000 AAKPE, elected to the American Academy of Kinesiology and Physical Education

2005-2007 elected Chairperson of the 500 member International Society of Biomechanics *Footwear Biomechanics Group*

2007 Co-Chaiperson of the *VIIIth Footwear Biomechanics Symposium*, Taipei, Taiwan

2009 – honored by the creation of the biennial, *E. C. "Ned" Frederick Young Investigator Award* of the Footwear Biomechanics Group

Additional Comments on Professional Service

In addition to service to the U.S.B.A. Sports Medicine Council and the International Olympic Committee, I was a consultant to the USOC Ski Project, and I have tested and counseled over 60 Olympic and professional athletes since 1975. This list includes a variety of track and field athletes, rowers, baseball, basketball and football players. Six have since won medals in Olympic competition and one was voted National League MVP.

My services as a reviewer have been used by: *Nature*, *Journal of the American Medical Association*, *Medicine and Science in Sports and Exercise*, *Research Quarterly*, *Journal of Biomechanics*, *International Journal of Sports Medicine, Journal of Applied Biomechanics,* Journal *of Theoretical Biology*, *Journal of Sports Science*, *Clinical Journal Of Sport Medicine, Clinical Biomechanics*, and the *Canadian Journal of Applied Sports Science*. I have reviewed abstracts for numerous scientific meetings. I have chaired sessions at the annual meetings of the American College of Sports Medicine, American Society of Biomechanics, Canadian Society of Biomechanics, International Society of Biomechanics, Commonwealth Games Conference 86 in Glasgow, several sessions for the ISB Footwear Biomechanics Group, and the IOC World Congress on Sports Science. I have been the external examiner for the doctoral dissertations of students at the University of Calgary, Canada, and Chalmers University of Technology, Göteborg, Sweden. I have been a graduate committee member for students pursuing advanced degrees at the University of Tennessee, the University of Montana, Penn State University, and The University of Massachusetts.

Since 2005 I have been invited annually to act as an External Reviewer for the Hong Kong Research Grants Council (RGC). I have reviewed Competitive Earmarked Research Grants and other RGC proposals.

Seminars, Keynote Lectures, and Papers Presented

I have had the pleasant experience of being an invited speaker at over 50 sports clinics and running camps including those associated with the Honolulu Marathon, the Phidippides Marathon in Athens, the Rotterdam Marathon, New York Marathon, Atlanta Marathon, and the Boston Marathon. Those speaking engagements are not listed in this vita because they were not formal research presentations, even though they are certainly a form of professional service. Research seminars, invited keynote lectures and papers read at meetings and special colloquia are included below.

Seminars

1976 Northern Arizona University, Department of Biological Science
"Selected physiological properties of the ankle extensor muscles of Mephitis mephitis "

1977 Museum of Northern Arizona, Department of Biology, "How animals move"

1977 University of Tennessee, Department of Zoology, "Why big animals? Being a discussion of size limits in mammals"

1979 University of Montana, Department of Zoology
"Muscle design in an endurance walker, the Striped Skunk"

1979 New England College of Osteopathic Medicine, Physiology Department "The concept of muscle design"

1979 Colorado State University, Department of Anatomy, "Muscle fiber type compartmentalization in mammals"

1979 Portland State University, Department of Biology
"Muscle design in the Striped Skunk"

1979 University of North Carolina, Charlotte, Department of Biology
"Analysis of muscle design in mammals"

1982 University of Calgary, Faculty of Physical Education
"The resolving power of oxygen uptake measurements"

1982 Johns Hopkins University, Department of Mechanical Engineering
"Running shoe biomechanics: Myth versus fact"

1983 Baldwin-Wallace College, Department of Biology, "Zoolympics"

1983 Simon Fraser University, Department of Kinesiology,
"Studying the economy of movement"

1983 University of Tennessee, Departments of Zoology and Physical Education, "Running shoe biomechanics: Myth versus fact"

1983 Oregon Museum of Science and Industry, "What a difference a shoe makes"

1984 Liverpool Polytechnic, Department of Sport & Rec. Study, "Mythology in sports biomechanics"

Seminars (CONTINUED)

1986 Pennsylvania State University, Center for Locomotion Studies
"Kinematically mediated effects on the economy of movement"

1987 University of Calgary, Biomechanics Laboratory "Biomechanical aspects of ski skating"

1992 University of Massachussetts, Department of Exercise Science, "Biomechanical Aspects of Sport Shoe Biomechanics

2002 University of Massachusetts, Department of Exercise Science, "Big Ideas in Biomechanics"

Keynote Lectures

1978 Atlanta, Georgia State University, AMA Symposium, "Controversies in Sports Medicine "

1978 Honolulu, AMJA Sports Medicine Symposium,
"How high, how far, how fast: Human performance potential"

1979 Boston, Symposium on Medical Care in Road Racing
"Role of environmental factors in planning medical care"

1979 Honolulu, AMJA Sports Medicine Symposium, "Heat injury in marathon running"

1979 Provo, Utah, Brigham Young University, Distinguished University Lecturer, "Human anatomical and physiological potential"

1981 New York, American Academy of Podiatric Sports Medicine
"Myth and fact in sport shoe biomechanics"

1981 Minneapolis, ACSM, Symposium on Ergogenic Aids
"Extrinsic biomechanical aids to performance"

1981 Boxborough, MA American College of Sports Medicine- New England Chapter, "Body size and biomechanical consequences"

1982 Seattle, American Society of Biomechanics
"The role of biomechanics in sports equipment design"

1982 Nanjing, Shanghai and Beijing, All-China Sports Federation Lecture Series, "Myth and fact in modern sports science" and "Using sports science to enhance performance"

1982 Boston, St. Elizabeth's Hospital Sportsmedicine Symposium
"Biomechanical aspects of running shoe design"

1982 Nijmegen, Netherlands, Symposium on Sport Shoes and Playing Surfaces,
"The effect of shoe design on shock attenuation"

1983 Boston, American Podiatric Association
"Myth and fact in sport shoe biomechanics"

Keynote Lectures (Continued)

1983 New York, John Marshall Memorial Symposium
"In search of the perfect marathon"

1983 Cleveland, Baldwin-Wallace College Special Event Lecturer
"Human running"

1983 Calgary, Symposium, Biomechanical Aspects of Sports Shoes & Playing Surfaces,
"Measuring the effects of shoes and surfaces on the economy of locomotion"

1984 Orelia, Ontario, Ontario Exercise Physiology Group
"Factors affecting the economy of movement"

1984 Brussels, Belgian Society of Kinestherapy (ABKS)
"Myth and fact in sport shoe biomechanics"

1984 Munich, Symposium- Der Schuh im Sport
"Dilemmas and Dichotomies in sport shoe design"

1984 Hanover, Dartmouth Medical School Sportsmedicine Symposium
"In pursuit of the perfect marathon: Using sport science to improve performance"

1984 Iowa City, Hawkeye Sports Medicine Symposium, "Running shoe biomechanics"

1986 Glasgow, Commonwealth & International Conference on H.P.E.R.D.
"Kinematically mediated consequences of sport shoe design"

1986 Edinburgh, Exercise-Benefits, Limits & Adaptations, symposium
"Biomechanical aspects of endurance"

1986 Burlington, VT. Univ. of Vermont, Biathlon Conference, "Using Biomechanics to Ski Faster"

1987 Calgary, Alberta. Biomechanical Aspects of Sports Surfaces, Intl. Symposium
"Performance aspects of sports surfaces"

1987 Burlington, VT. University of Vermont, Biathlon Training Conference
"Putting Technique Improvements into Perspective"

1987 Manchester, NH. Elliot Hospital, "Truth or Consequences in Sports Medicine"

1988 Anaheim CA. I.D.E.A. Convention, " Fitness Tools for CrossTraining"

1988 Calgary, Alberta, 2nd Annual Symposium on Sports Surfaces
"Citius, Altius, Fortius: Performance Enhancement through Sport Surface Design"

1988 Calgary, Alberta, 2nd Annual Symposium on Sports Surfaces
"Marketing Technical Concepts to the Sports & Fitness Community"

1988 Chicago, IRSA Fall Conference, " Integrating Safe, Effective CrossTraining Programs"

1988 Washington, DC. IDEA Convention, "Fitness Tools for CrossTraining"

Keynote Lectures (Continued)

1988 Tokyo & Osaka, Japan, NIJAC Sports Forum, "CrossTraining: Fitness tools for a better life"

1989 Aspen, Colorado, Aspen Sportsmedicine Conference,
"Fitness tools for CrossTraining" & "Sport Shoe Biomechanics for the Practitioner"

1991 Orlando Florida, American College of Sports Medicine - Annual Meeting
Guest Clinical Lecture " Biomechanical Mechanisms of Sports Injury"

1991 Orlando Florida, American College of Sports Medicine Annual Meeting
Symposium keynote: " Mechanical Constraints on Nordic Ski Performance"

1991 Chicago, IL, Sensors Expo
"Harnessing Local Pressures: A New Tool for Sports Performance Enhancement."

1992 Calgary. Alberta, International Sports Surfaces Symposium
" Biomechanical Underpinnings of Sports Surface Standards"

1992 Colorado Springs, CO USOC Sports Equipment and Technology Conference
"Measuring Nordic Ski Glide Performance" (w/ J. Healy & A. Vangura)

1993 Falun, Sweden, International Nordic Skiing Symposium, " Finding Faster Skis"

1993 Amherst, MA Intl Soc. Biomechanics in Sports Symposium, "Slipping and Sliding in Sports"

1994 Calgary, Alberta Canadian Soc. of Biomechanics Functional Footwear Symposium
" Footwear and Performance- Is there a link?"

1994 Boston, The Boston Foot Course, "Biomechanical Consequences of Sports Shoe Design"

1995 Göteborg, Sweden Chalmers University Biomechanics Seminar
" Biomechanical Demands of Court Sports"

1995 Köln, Germany ISB - Working Group on Functional Footwear Symposium on Footwear Biomechanics, " Biomechanical Requirements of Basketball Shoes"

2001 Washington, DC Prescription Footwear Association Symposium on Footwear Biomechanics, "Pedicentric Footwear Design"

2003 Queenstown, New Zealand, *Foot in Sport* conference of New Zealand Society of Podiatrists " Pedicentric Shoe Design: a Critical Dissection of Footwear R&D"

2003 Queenstown, New Zealand 6th *Symposium on Footwear Biomechanics* of the ISB-Technical Group on Footwear Biomechanics, "A Peak Down Under the Rug".

2004 Hong Kong, Chinese University Hong Kong, Workshop: Application of Science in Footwear Design, Development and Manufacture, 2004, "Application of Science in Footwear Design"

2005 Dongguan City, People's Republic of China. Workshop "Application of Biomechanics in Footwear Design".

Keynote Lectures (Continued)

2008 Stoke on Trent, UK, 6th Staffordshire Conference on Clinical Biomechanics, " The Pedicentric Cure for What Ails the Footwear Industry"

2008 Stoke on Trent, UK, 6th Staffordshire Conference on Clinical Biomechanics, " Biomechanics of Skateboarding "

2009 Atlanta, GA, PFOLA 2009 12th Annual International Conference on Foot Biomechanics & Orthotic Therapy, " Kinetics of Skateboarding: Footwear Considerations"

Research Papers Presented

1975 Society for Neurosciences- Arizona Chapter, "Histochemical properties of Hindlimb muscles of the striped skunk"

1976 Arizona Academy of Sciences,"Adaptations for saltation in pocket mice and kangaroo rats"

1976 American Society of Zoologists,"Histochemical properties of the primary ankle extensors of the Striped Skunk, Mephitis mephitis"

1977 American Soc. of Zoologists,"Muscle design in the ankle extensors of M. mephitis"

1980 Am College of Sports Med., "Lower oxygen cost while running in air cushion type shoes"

1980 American Society of Biomechanics, "The prediction of vertical impact force during running"

1981 Am College of Sports Medicine, "Consequences of scaling on impact loading in running"

1982 World Congress Sports Med,"The effect of shoe weight on the aerobic demands of running"

1983 American College of Sports Medicine, "Shoe design and rearfoot control in running"

1983 Symposium on Biomechanical Properties of Sport Shoes and Playing Surfaces, "The effects of shoe cushioning on the oxygen demands of running"

1983 International Society of Biomechanics, "A model of the energy cost of load carriage on the feet during running"

1984 American College of Sports Medicine, "Ventilatory contributions to shock attenuation"

1985 International Society of Biomechanics, "Rearfoot kinematics and ground reaction forces in elite caliber twin runners"

1985 New England Physiologists, "Performance Limits"

1987 International Society of Biomechanics, "Double peaks in impact force during running"

1989 International Society of Biomechanics, "Scaling of Foot Dimensions" w/ J. Robinson

1989 IOC World Congress on Sports Science, “Reliability and validity of tests of ski sliding friction”. w/ P. Hoag. (Poster)

1995 ISB - Working Group on Functional Footwear Symposium on Footwear Biomechanics, “Determining the cushioning characteristics of replacement insoles” w/ Craig Wojcieszak

1997 ISB Technical Group on Footwear Biomechanics, 3rd Symposium on Footwear Biomechanics, “A Comparison of Two Friction Measuring Methods”, w/ C Wojcieszak, P. Jiang

2003 ISB-Technical Group on Footwear Biomechanics 6th Symposium on Footwear Biomechanics, “Biomechanics of Skateboarding: Kinetics of the ‘Ollie’”. w/ J. J. Determan, S. N. Whittlesley, and J. Hamill

Research Papers Presented (Continued)

2004 CSB Symposium w/ J Determan and J. Cox." Impact Forces During Skateboarding Landings".Thirteenth Biennial Conference, Canadian Society for Biomechanics. Halifax, Nova Scotia, Canada. 2004

2006 World Congress of Biomechanics w/ J Determan, J. Cox, and M Nevitt, "Kinetics of the Skateboarding Kick Flip" Fifth World Congress of Biomechanics, Munich

2007 VIIIth Footwear Biomechanics Symposium, Taipei, Taiwan, w/ J. Determan, J. Cox, and M Nevitt, "Reporting Shear Ground Reaction Forces During Skateboard Landings" Footwear Biomechanics Group

2008 North American Congress on Biomechanics *(NACOB, Ann Arbor (USA) w/* Matthew Nevitt, Jeremy Determan, Joseph Cox & Edward Frederick. "Ground Reaction Forces in Skateboarding: The Ollie"

2009 IXth Bienniel Footwear Biomechanics Symposium, South Africa, w/ J. Determan and M Nevitt, "Measuring the Shock Attenuation Properties of Skateboarding Shoes"

2009 IXth Biennial Footwear Biomechanics Symposium, South Africa, w/ J. Determan, J. Cox, and M Nevitt, "Tibial Accelerations During Snowboarding Jump Landings: A Pilot Study"

Publications:

Books, Audio, Internet, and Video Tapes & Dissertaion

1973 Frederick, E.C. *The Running Body*, World Publications, Palo Alto, CA.-the physiology of running for lay readers.

1977 Frederick, E.C. *An Analysis of Muscle Design in the Primary Ankle Extensors of Mephitis mephitis*. Unpublished doctoral dissertation, Northern Arizona University

1984 Frederick, E.C. (Editor), *Sport Shoes and Playing Surfaces: Their Biomechanical Properties*, Human Kinetics Publishers,Champaign, IL- a collection of scholarly reviews on the biomechanics of sport shoes and surfaces.

1986 Kiesling, Stephen & E.C. Frederick, *Walk On: A Toolkit for Building Your Own Walking Fitness Program.* Rodale Press

1988 Kiesling, Stephen & E.C. Frederick, (ghost authors) *HealthWalking*, Nike & SyberVision, Newark, CA - a complete fitness system based on walking - 60 min Video, booklet, 4 audio tapes.

1988 Kiesling, Stephen & E.C. Frederick, *Nike CrossTraining System,* Nike Fitness Information, Beaverton, OR - 4 audio tapes and a 64 page book on CrossTraining

2007 Frederick, E. C. & S. W. Yang (eds) *Proceedings: VIIIth Footwear Biomechanics Symposium, Taipei 2007,* Footwear Biomechanics Group, pp 160.

2008 Ruan Mianfang & E. C. Frederick, *Li Ning Glossary of Footwear and Biomechanics Terminology: English and Chinese*. http://exeter-research.com/indexGlossary.html

Papers, Reviews, Chapters & Abstracts

Out of a fondness for teaching and new ideas, I have given my non-technical writing skills regular exercise. This has led to more than 70 articles in lay publications such as *American Health*, *Runner's World*, *Modern Athlete & Coach*, *Track Technique*, *Running, The Washington Post*, *Walking*, and so on. These articles have covered a range of subjects, but the majority have been about scientific topics related to health and fitness. The above-mentioned articles are intentionally *not* listed in this vita, because they are not strictly the product of my professional labors. I must confess, though, that this writing, along with what little teaching I have had time for, has helped me accept life without students and blackboards, one of the most difficult adjustments to working in research and administration. The publications listed below are technical, research publications. (NB: "A" following the date indicates an abstract. "CH" indicates a chapter in a book)

Research Publications:

Frederick, E.C. and G.E. Goslow, Jr. Lack of fast glycolytic fibers in the ankle extensors of the striped skunk, *Mephitis mephitis J. Histochem. Cytochem.* 24: 959-960, 1976.

Frederick, E.C., and G.E. Goslow, Jr. Histochemical properties of the primary ankle extensors of the striped skunk, *Mephitis mephitis*. *Amer. Zool.* 16: 221, 1976 A

Research Publications: (Continued)

Frederick, E.C. and D.M. Roddy. An histochemical approach to the evolution of adaptations for saltation in pocket mice and kangaroo rats. *J. Ariz. Acad. Sciences*11:163,1976A

Frederick, E.C. and J.W. Hermanson. Categories of muscle design in the ricochetal rodent, Dipodomys merriami. *Abstract Volumes of the XXVII Congres International des Sciences Physiologiques* PP.263, 1977 A

Frederick, E.C. Muscle design in the ankle extensors of *Mephitis mephitis Amer. Zool*. 17(4): 954, 1977 A

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Litigation Support:

Selected Experience as Expert or Consultant in Litigation or Patent Reexamination Matters

1996 or later

AlpineStars S.P.A. v. United States, No. 09-00271. I have been engaged as an expert by the Commercial Litigation Branch of the US Department of Justice in a customs dispute. I have written two expert reports and have been deposed. This case is ongoing.

Pashamova vs. New Balance Athletic Shoe, Inc. and New Balance, Inc., Case No. 11-cv-10001-NG (D. Mass.). I am currently serving as an expert in support of New Balance. I filed a preliminary expert report in 2011. (2011- ongoing)

Request for Reexamination by K-Swiss Inc. of U.S. Patent No. 7,181,866. I provided a declaration in support of K-Swiss. Concluded in 2010.

Masai Marketing & Trading AG (MBT) v. Ryn Korea Co. LTD. Provided expert support including several reports in support of MBT's infringement case. Concluded in 2009.

Hockerson-Halberstadt, Inc. and Standon, LLC v. New Balance Athletic Shoe, Inc. Serving as an expert in support of New Balance. Last active in 2009.

Cushion Technologies, LLC v. adidas America, Inc., New Balance Athletic Shoe, Inc. , et al. Served as an expert in this case for New Balance and filed two expert reports. Concluded in 2008.

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Prior to 1996 (underlining indicates party I worked with)

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Kalotkin v Nike slip and fall (S&F) case in Boston as expert for Nike. Expert Report, Deposition, Testimony at trial

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(12) **United States Patent**
Dua et al.

(10) **Patent No.: US 7,347,011 B2**
(45) **Date of Patent: Mar. 25, 2008**

(54) **ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER**

(75) Inventors: **Bhupesh Dua**, Portland, OR (US); **Edward Nathaniel Thomas**, Portland, OR (US)

(73) Assignee: **NIKE, Inc.**, Beaverton, OR (US)

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(58) **Field of Classification Search** ..... 36/45, 36/3 A, 10, 55

See application file for complete search history.

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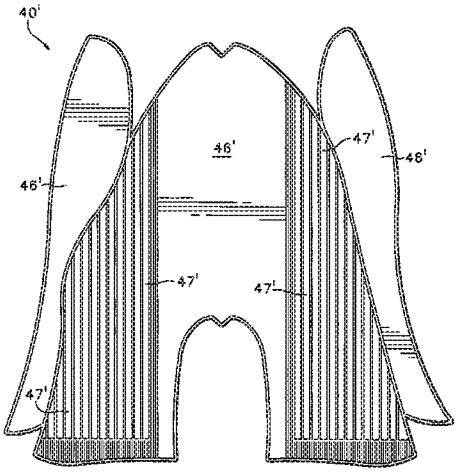
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(57) **ABSTRACT**

An article of footwear and a method of manufacturing the article of footwear are disclosed. The footwear may include an upper and a sole structure. The upper incorporates a textile element with edges that are joined together to define at least a portion of a void for receiving a foot. The textile element may also have a first area and a second area with a unitary construction. The first area is formed of a first stitch configuration, and the second area is formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element. Various warp knitting or weft knitting processes may be utilized to form the textile element.

46 Claims, 12 Drawing Sheets



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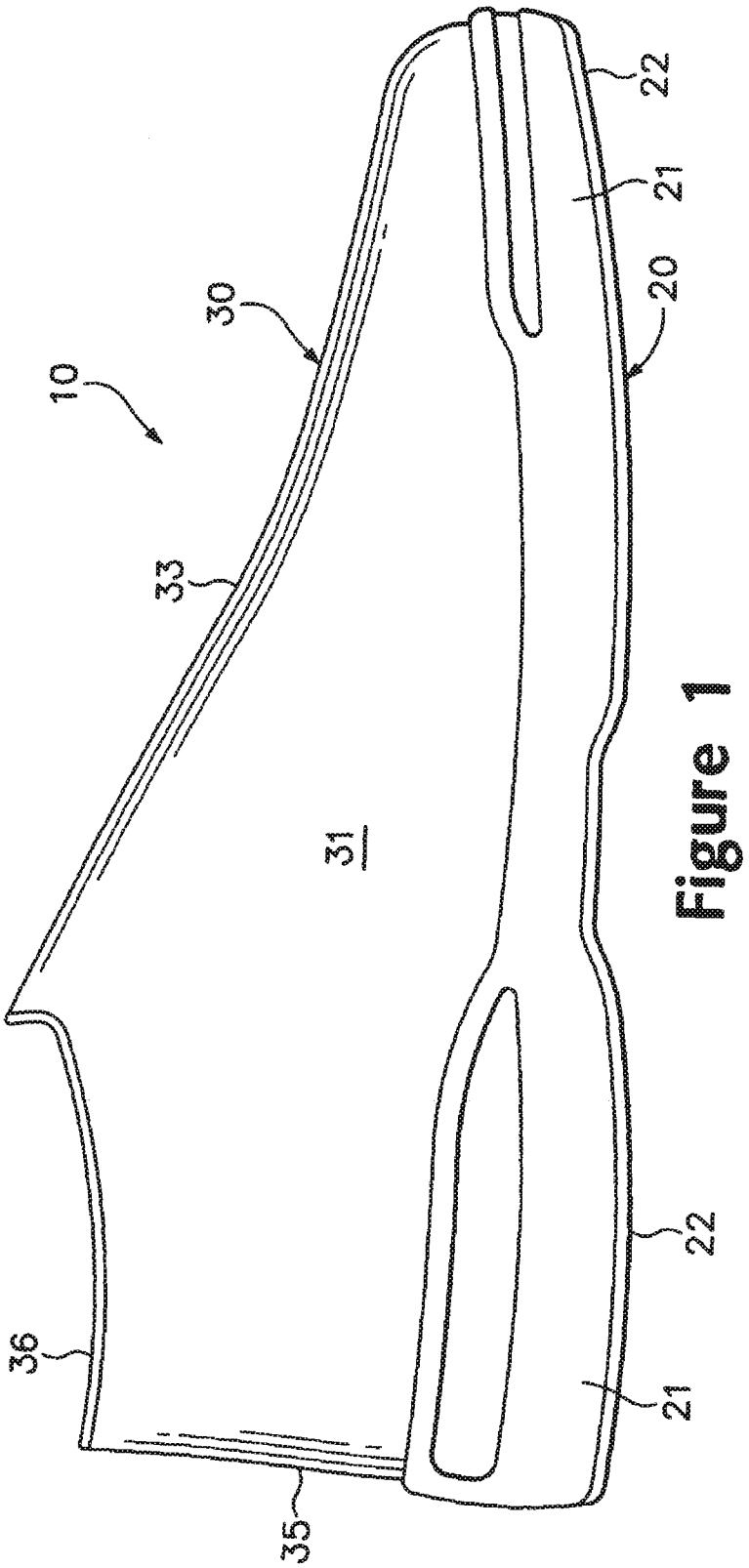


Figure 1

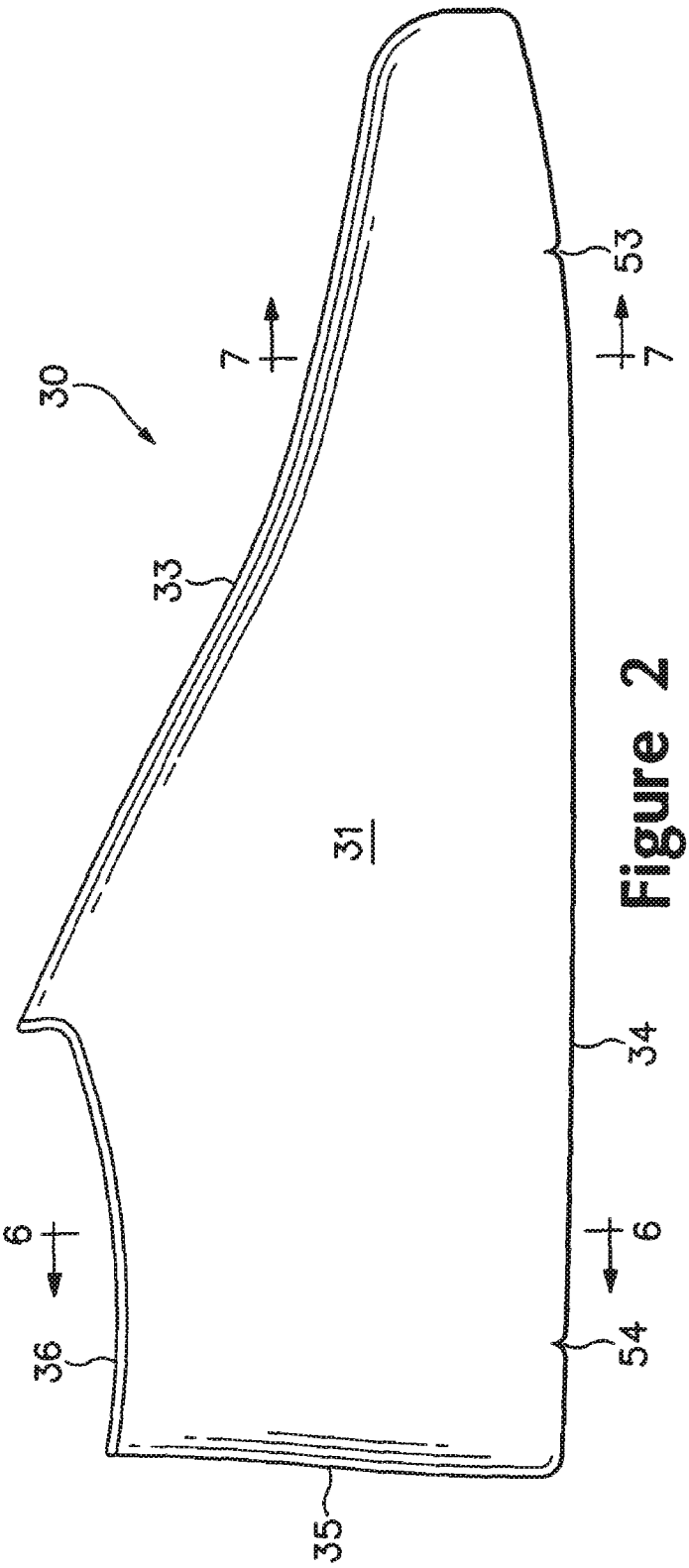


Figure 2

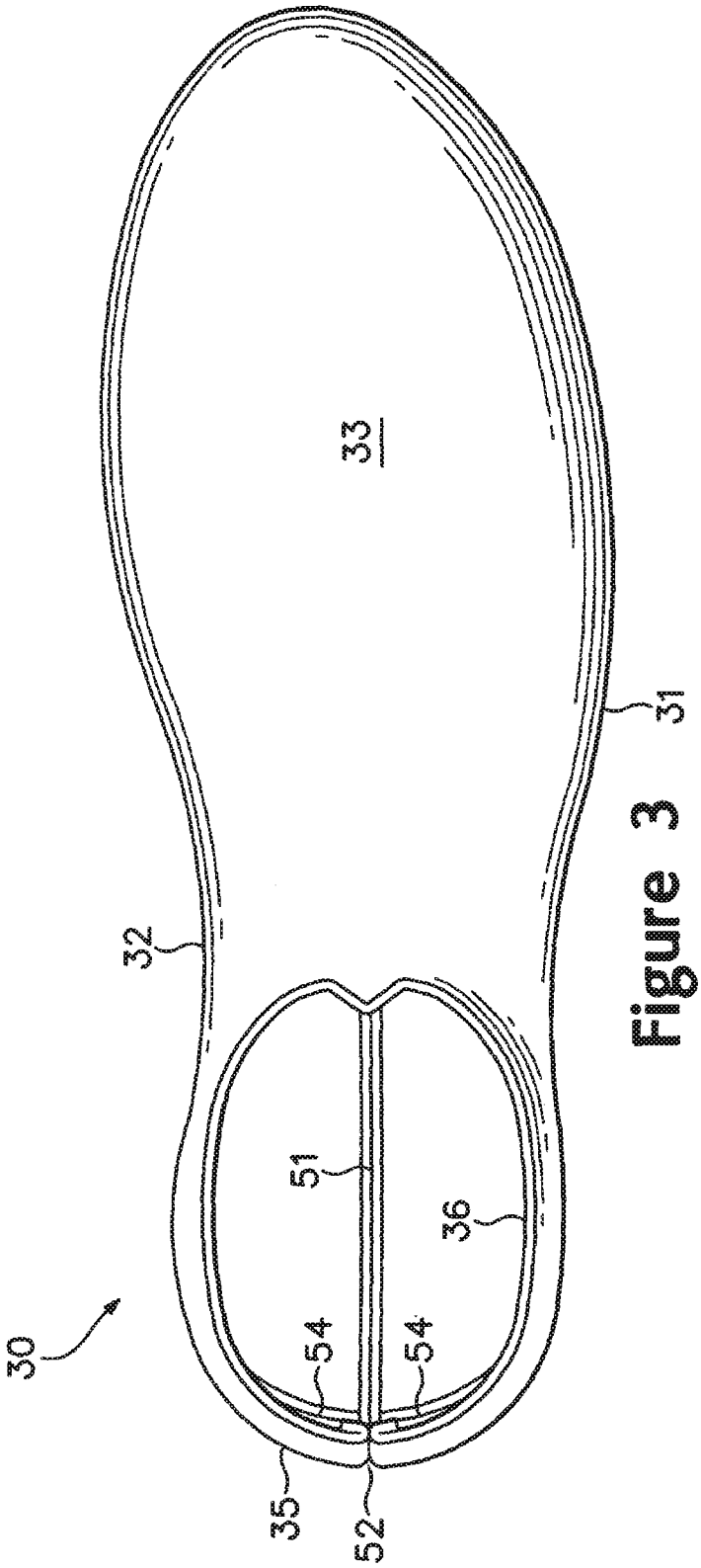


Figure 3

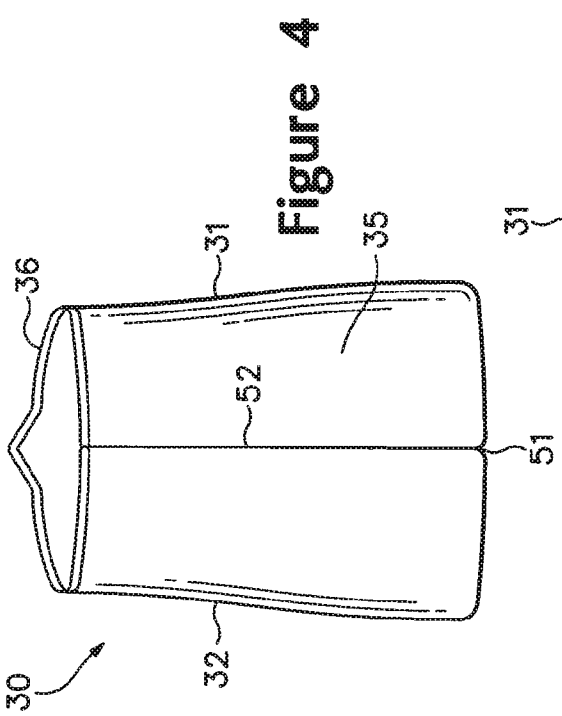


Figure 4

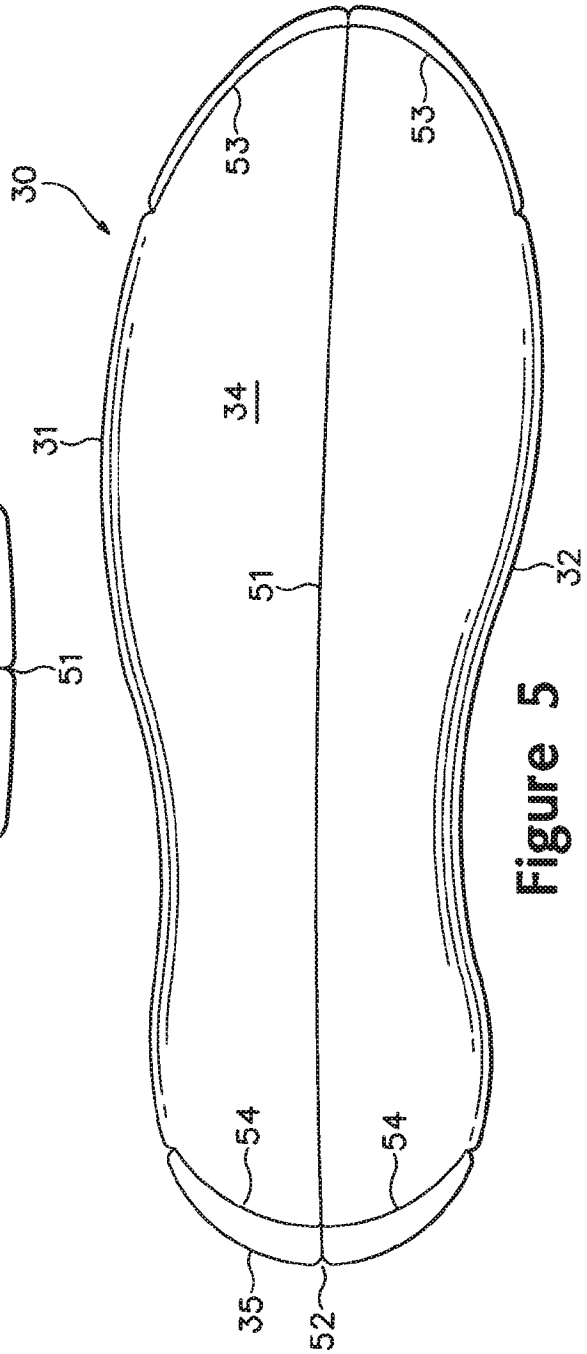


Figure 5

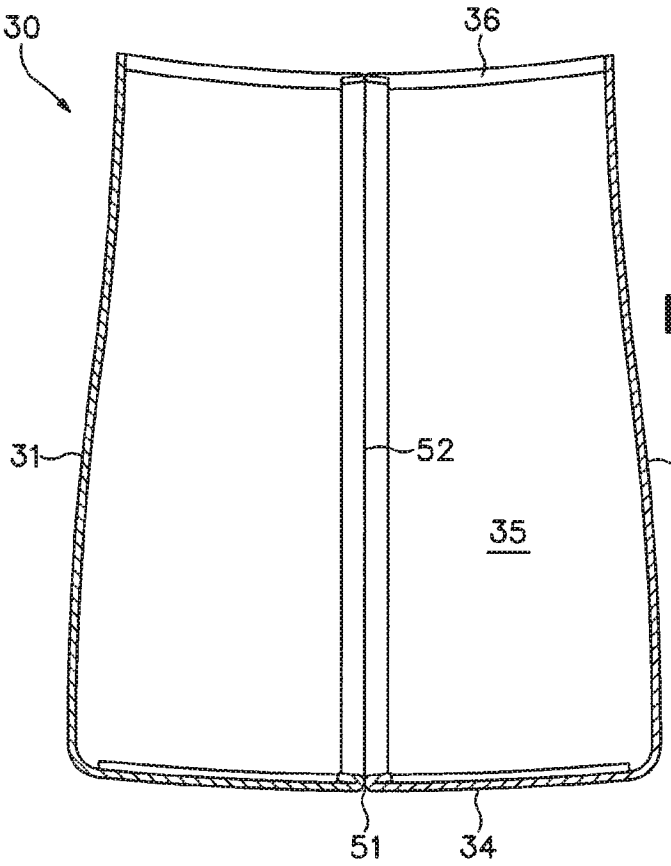


Figure 6

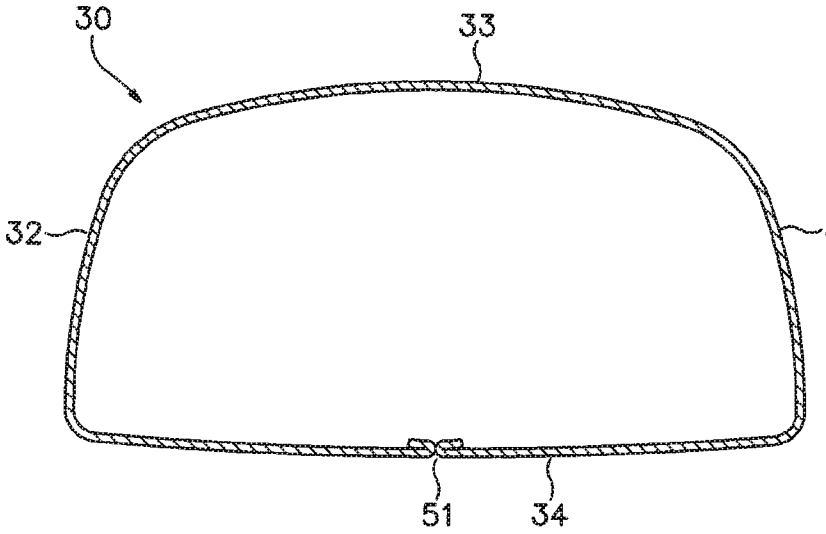


Figure 7

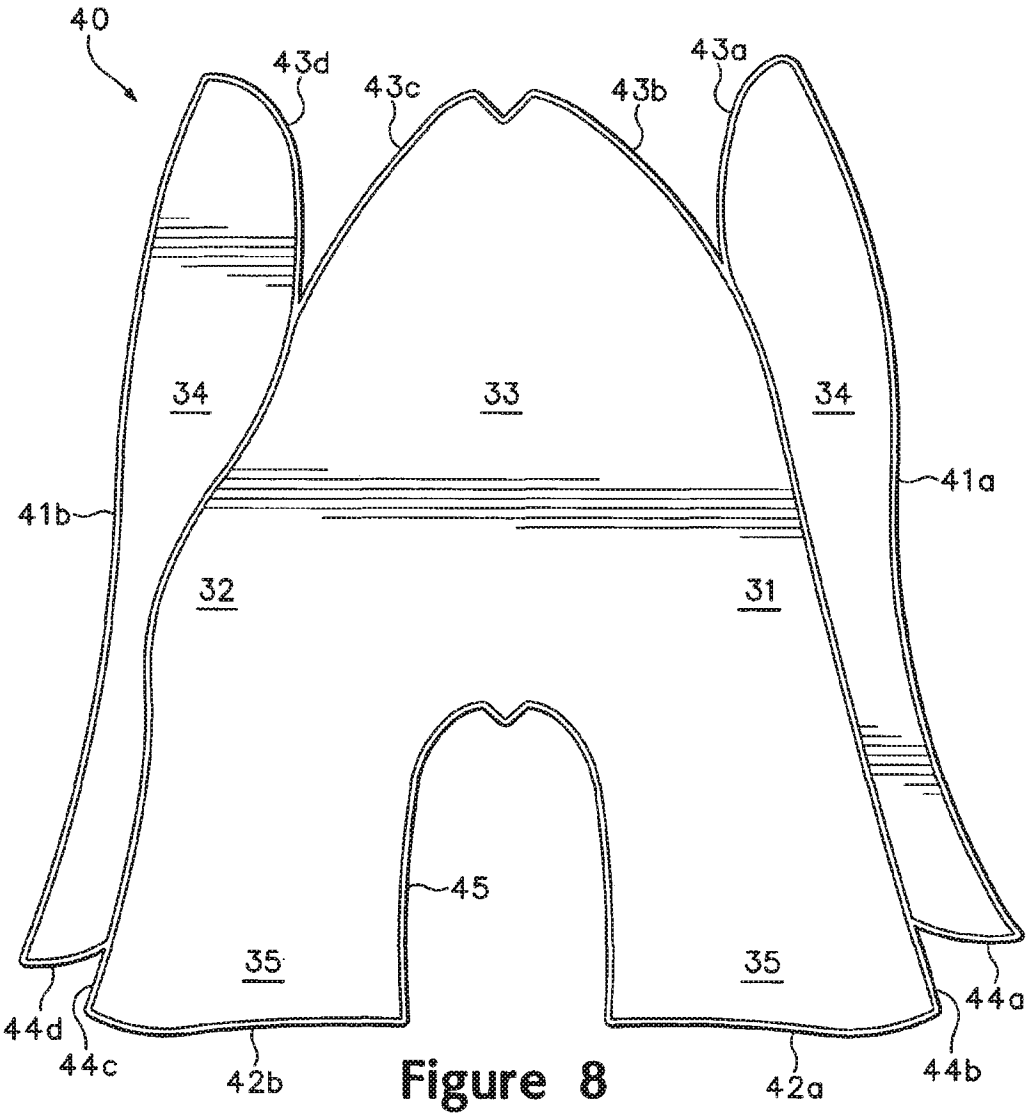

40
43d
43c
43b
43a
34
33
34
41b
41a
32
31
45
35
35
44d
44c
42b
42a
44b
44a

Figure 8

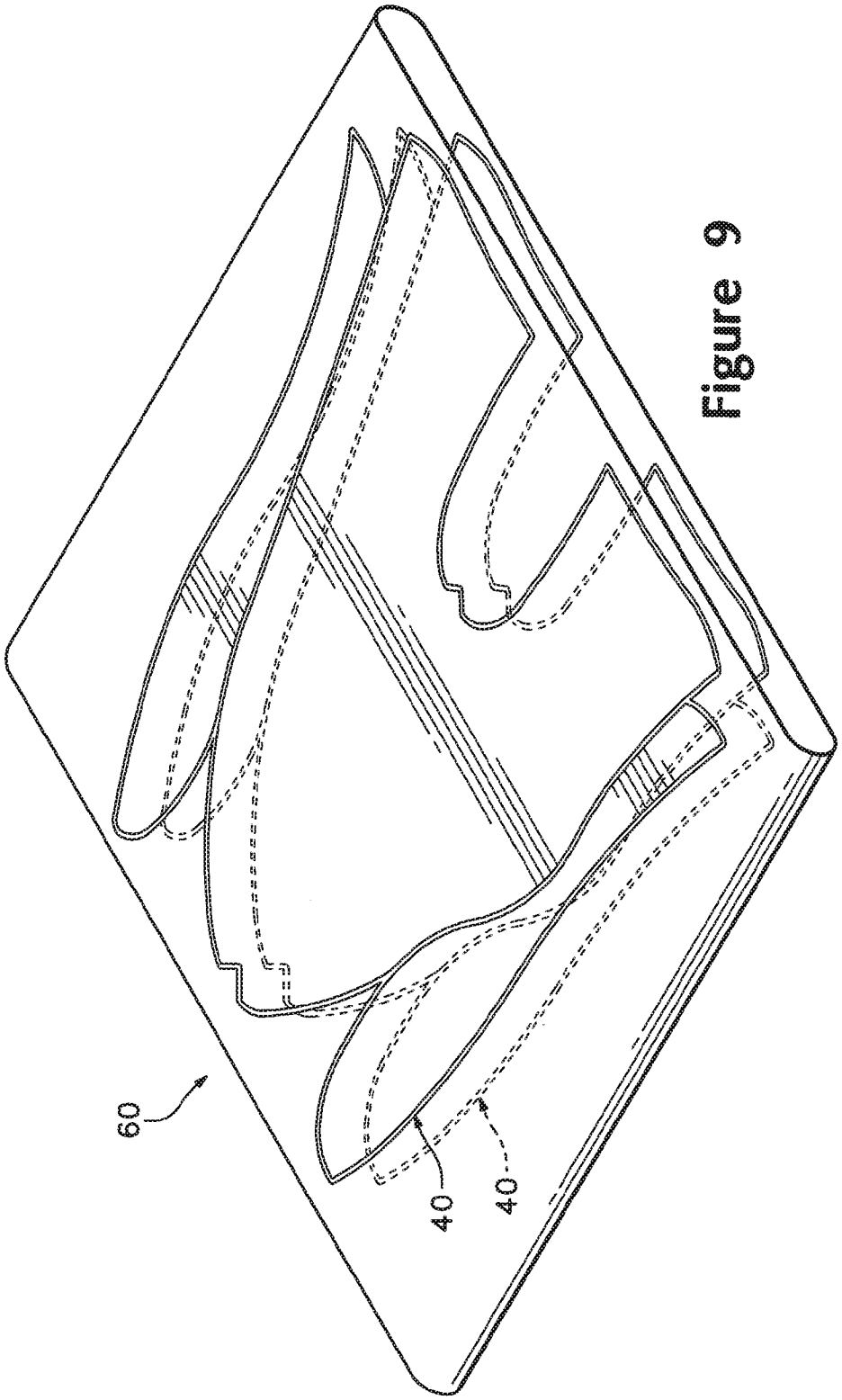


Figure 9

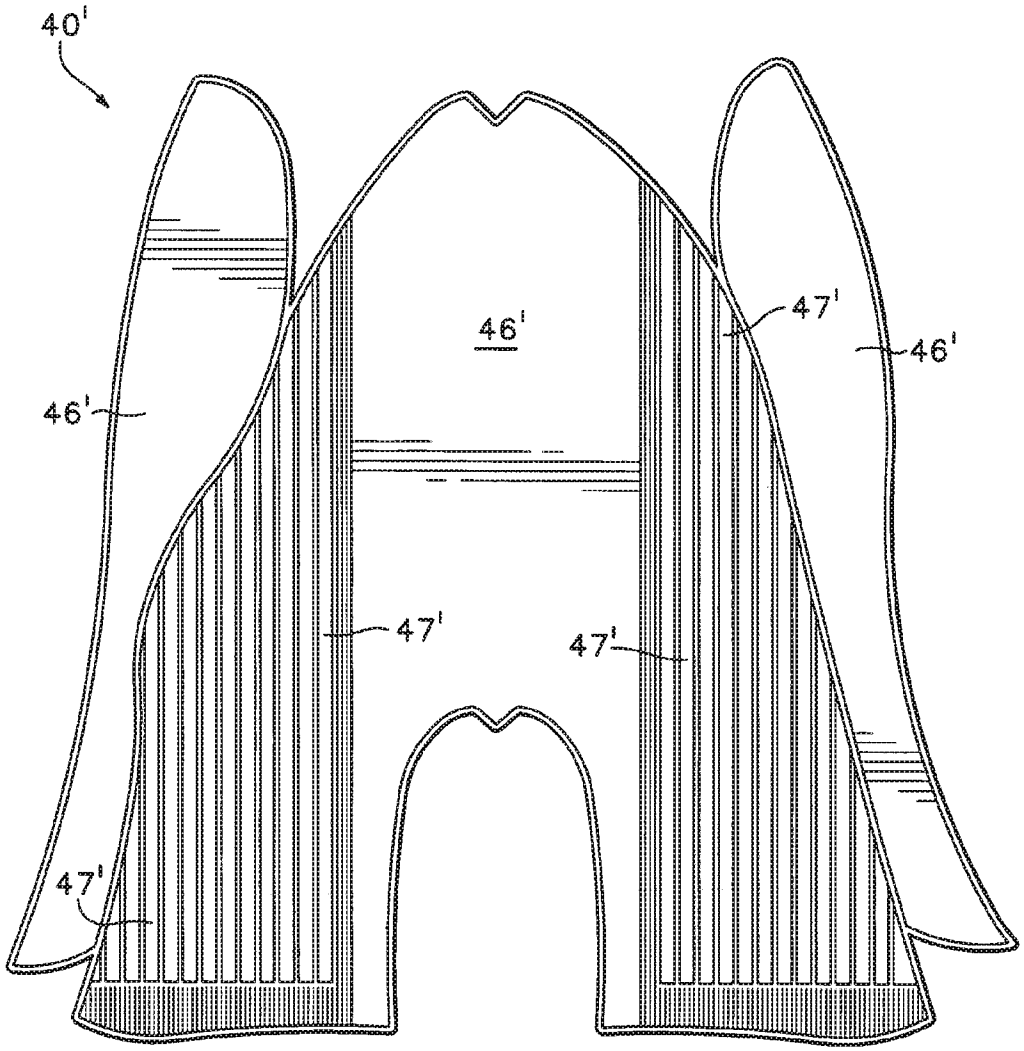


Figure 10

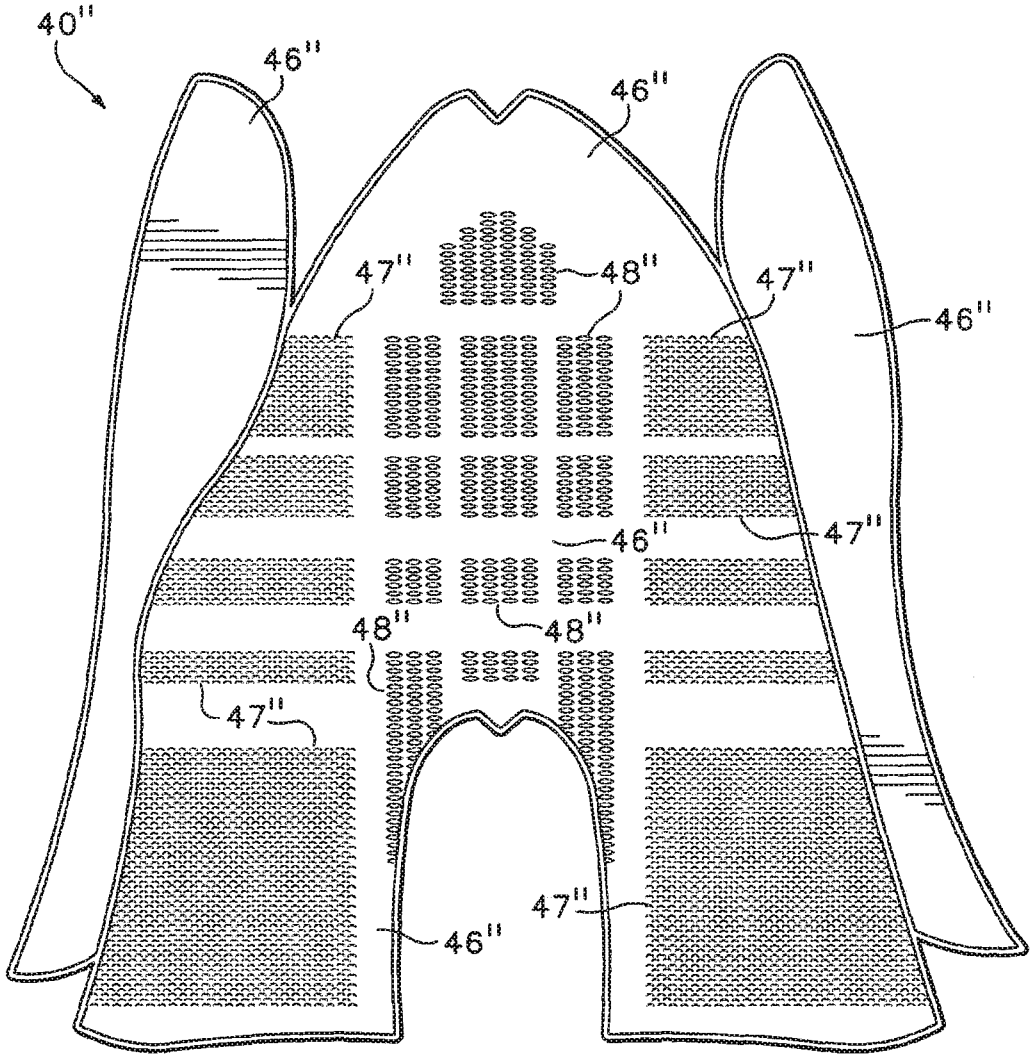


Figure 11

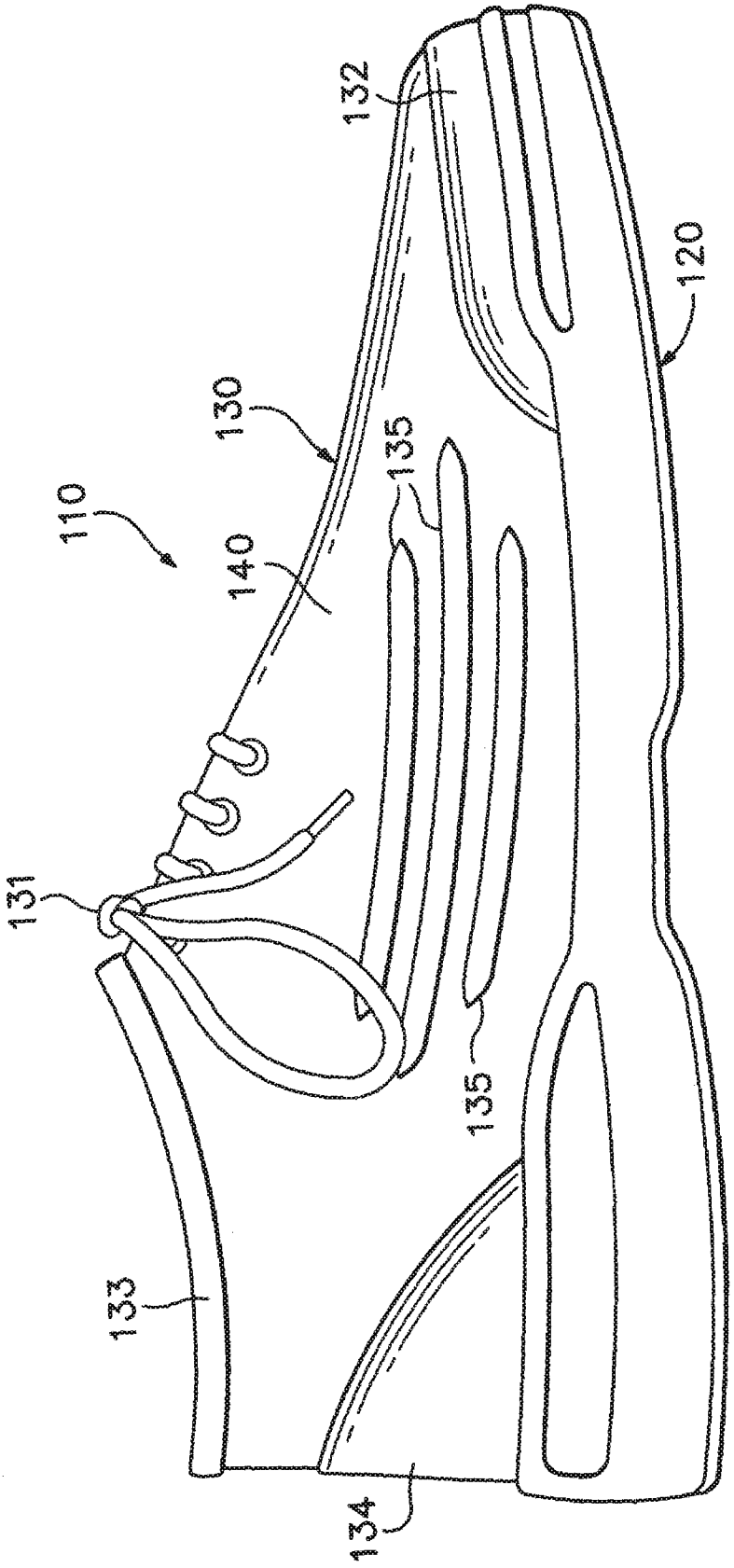


Figure 12

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Skechers v Nike

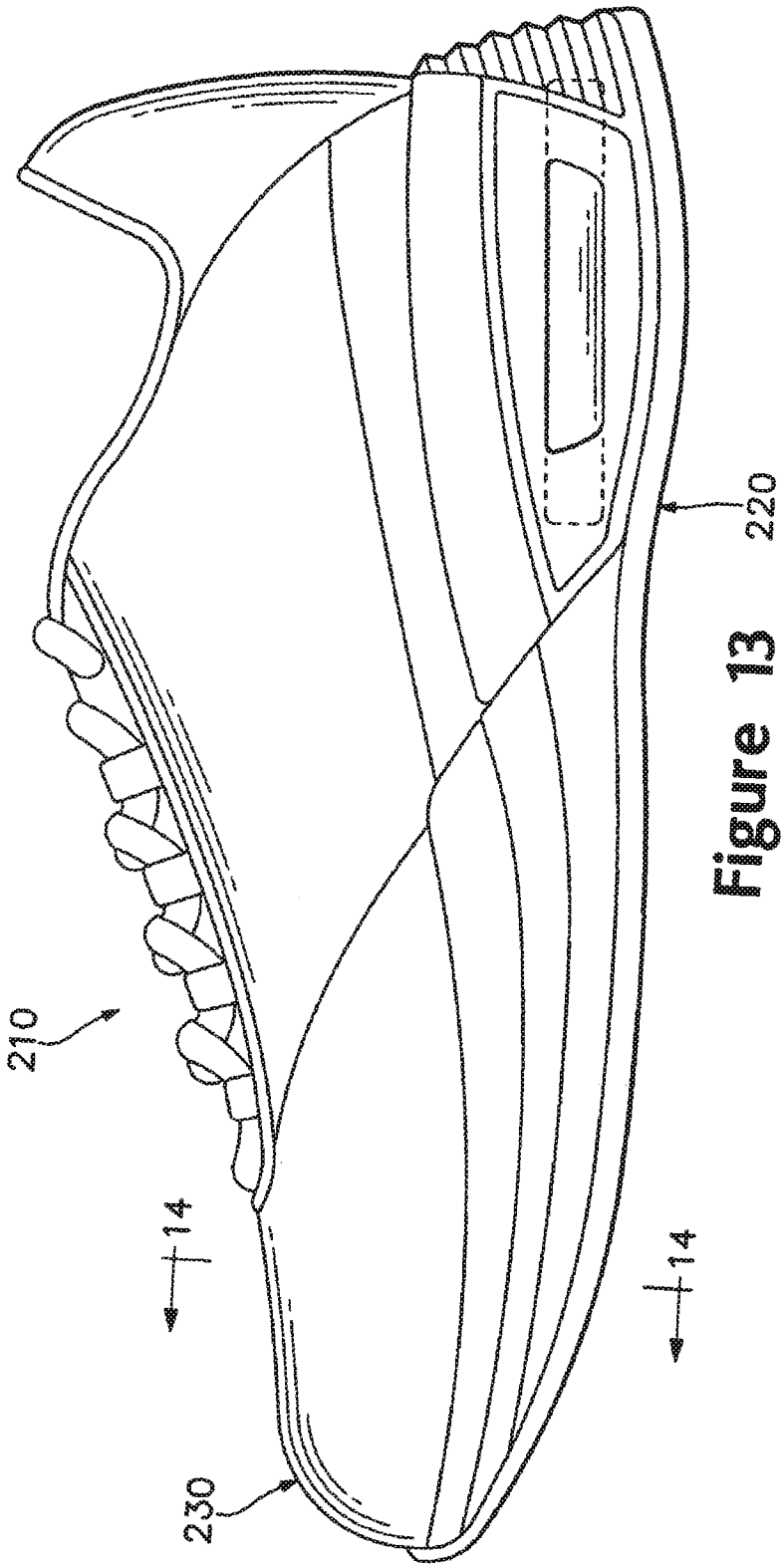


Figure 13

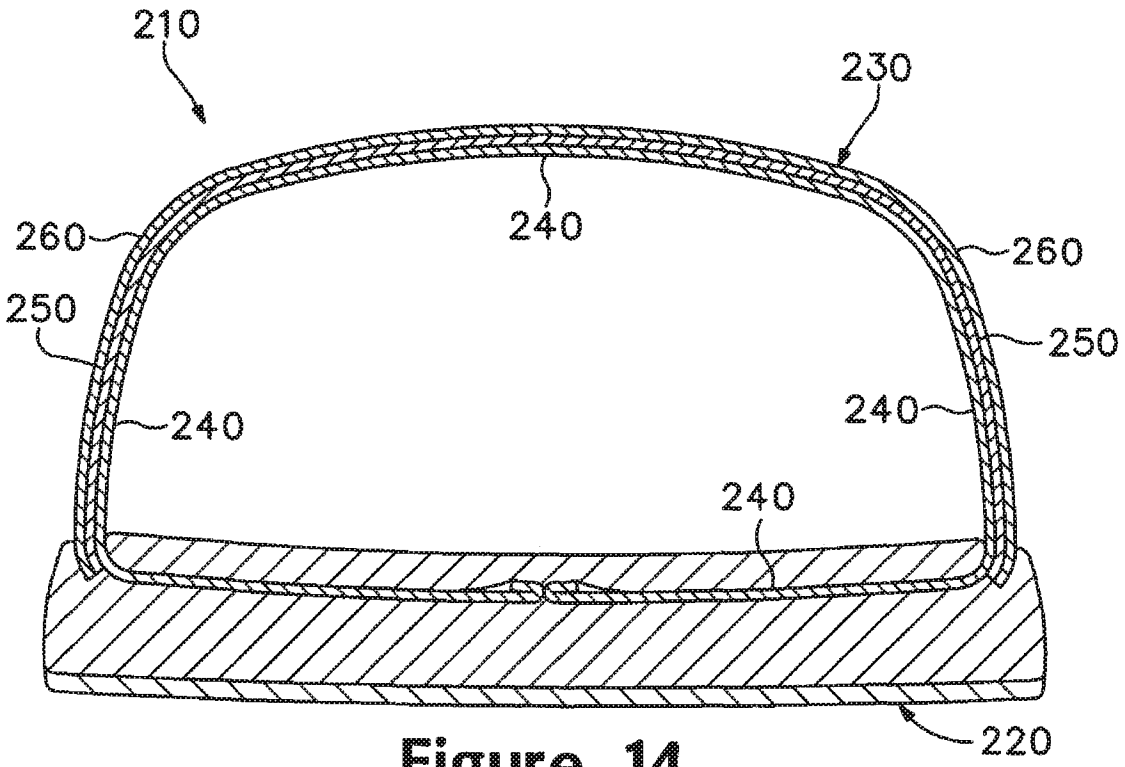


Figure 14

ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to footwear. The invention concerns, more particularly, an article of footwear incorporating an upper that is at least partially formed from a textile material.

2. Description of Background Art

Conventional articles of athletic footwear include two primary elements, an upper and a sole structure. The upper provides a covering for the foot that securely receives and positions the foot with respect to the sole structure. In addition, the upper may have a configuration that protects the foot and provides ventilation, thereby cooling the foot and removing perspiration. The sole structure is secured to a lower surface of the upper and is generally positioned between the foot and the ground. In addition to attenuating ground reaction forces and absorbing energy (i.e., imparting cushioning), the sole structure may provide traction and control potentially harmful foot motion, such as over pronation. Accordingly, the upper and the sole structure operate cooperatively to provide a comfortable structure that is suited for a wide variety of ambulatory activities, such as walking and running. The general features and configuration of the conventional upper are discussed in greater detail below.

The upper forms a void on the interior of the footwear for receiving the foot. The void has the general shape of the foot, and access to the void is provided by an ankle opening. Accordingly, the upper extends over the instep and toe areas of the foot, along the medial and lateral sides of the foot, and around the heel area of the foot. A lacing system is often incorporated into the upper to selectively increase the size of the ankle opening and permit the wearer to modify certain dimensions of the upper, particularly girth, to accommodate feet with varying proportions. In addition, the upper may include a tongue that extends under the lacing system to enhance the comfort of the footwear, and the upper may include a heel counter to limit movement of the heel.

Various materials may be utilized in manufacturing the upper. The upper of an article of athletic footwear, for example, may be formed from multiple material layers that include an exterior layer, an intermediate layer, and an interior layer. The materials forming the exterior layer of the upper may be selected based upon the properties of wear-resistance, flexibility, and air-permeability, for example. With regard to the exterior layer, the toe area and the heel area may be formed of leather, synthetic leather, or a rubber material to impart a relatively high degree of wear-resistance. Leather, synthetic leather, and rubber materials may not exhibit the desired degree of flexibility and air-permeability. Accordingly, various other areas of the exterior layer of the upper may be formed from a synthetic or natural textile. The exterior layer of the upper may be formed, therefore, from numerous material elements that each impart different properties to specific portions of the upper.

An intermediate layer of the upper may be formed from a lightweight polymer foam material that provides cushioning and protects the foot from objects that may contact the upper. Similarly, an interior layer of the upper may be formed of a moisture-wicking textile that removes perspiration from the area immediately surrounding the foot. In some articles of athletic footwear, the various layers may be joined with an adhesive, and stitching may be utilized to join elements within a single layer or to reinforce specific areas of the upper.

Although the materials selected for the upper vary significantly, textile materials often form at least a portion of the exterior layer and interior layer. A textile may be defined as any manufacture from fibers, filaments, or yarns characterized by flexibility, fineness, and a high ratio of length to thickness. Textiles generally fall into two categories. The first category includes textiles produced directly from webs of filaments or fibers by randomly interlocking to construct non-woven fabrics and felts. The second category includes textiles formed through a mechanical manipulation of yarn, thereby producing a woven fabric, for example.

Yarn is the raw material utilized to form textiles in the second category. In general, yarn is defined as an assembly having a substantial length and relatively small cross-section that is formed of at least one filament or a plurality of fibers. Fibers have a relatively short length and require spinning or twisting processes to produce a yarn of suitable length for use in textiles. Common examples of fibers are cotton and wool. Filaments, however, have an indefinite length and may merely be combined with other filaments to produce a yarn suitable for use in textiles. Modern filaments include a plurality of synthetic materials such as rayon, nylon, polyester, and polyacrylic, with silk being the primary, naturally-occurring exception. Yarn may be formed of a single filament, which is conventionally referred to as a monofilament yarn, or a plurality of individual filaments grouped together. Yarn may also include separate filaments formed of different materials, or the yarn may include filaments that are each formed of two or more different materials. Similar concepts also apply to yarns formed from fibers. Accordingly, yarns may have a variety of configurations that generally conform to the definition provided above.

The various techniques for mechanically manipulating yarn into a textile include interweaving, intertwining and twisting, and interlooping. Interweaving is the intersection of two yarns that cross and interweave at right angles to each other. The yarns utilized in interweaving are conventionally referred to as warp and weft. Intertwining and twisting encompasses procedures such as braiding and knotting where yarns intertwine with each other to form a textile. Interlooping involves the formation of a plurality of columns of intermeshed loops, with knitting being the most common method of interlooping.

The textiles utilized in footwear uppers generally provide a lightweight, air-permeable structure that is flexible and comfortably receives the foot. In order to impart other properties to the footwear, including durability and stretch-resistance, additional materials are commonly combined with the textile, including leather, synthetic leather, or rubber, for example. With regard to durability, U.S. Pat. No. 4,447,967 to Zaino discloses an upper formed of a textile material that has a polymer material injected into specific zones to reinforce the zones against abrasion or other forms of wear. Regarding stretch resistance, U.S. Pat. No. 4,813,158 to Brown and U.S. Pat. No. 4,756,098 to Boggia both disclose a substantially inextensible material that is secured to the upper, thereby limiting the degree of stretch in specific portions of the upper.

From the perspective of manufacturing, utilizing multiple materials to impart different properties to an article of footwear may be an inefficient practice. For example, the various materials utilized in a conventional upper are not generally obtained from a single supplier. Accordingly, a manufacturing facility must coordinate the receipt of spe-

cific quantities of materials with multiple suppliers that may have distinct business practices or may be located in different regions or countries. The various materials may also require additional machinery or different assembly line techniques to cut or otherwise prepare the material for incorporation into the footwear. In addition, incorporating separate materials into an upper may involve a plurality of distinct manufacturing steps requiring multiple individuals. Employing multiple materials, in addition to textiles, may also detract from the breathability of footwear. Leather, synthetic leather, or rubber, for example, are not generally permeable to air. Accordingly, positioning leather, synthetic leather, or rubber on the exterior of the upper may inhibit air flow through the upper, thereby increasing the amount of perspiration, water vapor, and heat trapped within the upper and around the foot.

SUMMARY OF THE INVENTION

The present invention is an upper for an article of footwear, the upper incorporating a textile element formed with a knitting machine, for example. In one aspect of the invention, the textile element has edges that are joined together to define at least a portion of a void for receiving a foot. In another aspect of the invention, the textile element has a first area and a second area of unitary construction. The first area is formed of a first stitch configuration, and the second area is formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element. The knitting machine may have a configuration that forms the textile element through either warp knitting or weft knitting.

Another aspect of the invention involves a method of manufacturing an article of footwear. The method includes a step of mechanically-manipulating a yarn with a circular knitting machine, for example, to form a cylindrical textile structure. In addition, the method involves removing at least one textile element from the textile structure, and incorporating the textile element into an upper of the article of footwear.

In another aspect of the invention, an article of footwear has an upper and a sole structure secured to the upper. The upper incorporates a textile element formed with a knitting machine. The textile element is removed from a textile structure that includes an outline of the textile element, and the textile element has edges that are joined together to define at least a portion of a void for receiving a foot.

The advantages and features of novelty characterizing the present invention are pointed out with particularity in the appended claims. To gain an improved understanding of the advantages and features of novelty, however, reference may be made to the following descriptive matter and accompanying drawings that describe and illustrate various embodiments and concepts related to the invention.

DESCRIPTION OF THE DRAWINGS

The foregoing Summary of the Invention, as well as the following Detailed Description of the Invention, will be better understood when read in conjunction with the accompanying drawings.

FIG. **1** is a lateral elevational view of an article of footwear having an upper in accordance with the present invention.

FIG. **2** is a lateral elevational view of the upper.

FIG. **3** is a top plan view of the upper.

FIG. **4** is a rear elevational view of the upper.

FIG. **5** is a bottom plan view of the upper.

FIG. **6** is a first cross-sectional view of the upper, as defined by section line **6-6** in FIG. **2**.

FIG. **7** is a second cross-sectional view of the upper, as defined by section line **7-7** in FIG. **2**.

FIG. **8** is a plan view of a textile element that forms at least a portion of the upper.

FIG. **9** is a perspective view of a textile structure that incorporates two of the textile element.

FIG. **10** is a plan view of another textile element.

FIG. **11** is a plan view of yet another textile element.

FIG. **12** is a lateral elevational view of another article of footwear having an upper in accordance with the present invention.

FIG. **13** is a lateral elevational view of yet another article of footwear having an upper in accordance with the present invention.

FIG. **14** is a cross-sectional view of the footwear depicted in FIG. **13**, as defined by section line **14-14**.

DETAILED DESCRIPTION OF THE INVENTION

The following discussion and accompanying figures disclose an article of footwear **10** and a method of manufacturing footwear **10**, or components thereof, in accordance with the present invention. Footwear **10** is depicted in the figures and discussed below as having a configuration that is suitable for athletic activities, particularly running. The concepts disclosed with respect to footwear **10** may, however, be applied to footwear styles that are specifically designed for a variety of other athletic activities, including basketball, baseball, football, soccer, walking, and hiking, for example, and may also be applied to various non-athletic footwear styles. Accordingly, one skilled in the relevant art will recognize that the concepts disclosed herein may be applied to a wide range of footwear styles and are not limited to the specific embodiments discussed below and depicted in the figures.

The primary elements of footwear **10** are depicted in FIG. **1** as being a sole structure **20** and an upper **30**. Sole structure **20** is secured to a lower portion of upper **30** and provides a durable, wear-resistant component that imparts cushioning as footwear **10** impacts the ground. Upper **30** is at least partially formed from a textile element **40** that defines an interior void for comfortably receiving a foot and securing a position of the foot relative to sole structure **20**. Various edges of textile element **40** are then secured together to form the shape of upper **30**. In some embodiments, textile element **40** may form substantially all of upper **30**, or textile element **40** may only be a portion of an upper.

Sole structure **20** has a generally conventional configuration that includes a midsole **21** and an outsole **22**. Midsole **21** is secured to a lower portion of upper **30** and is formed of a polymer foam material, such as ethylvinylacetate or polyurethane. Accordingly, midsole **21** attenuates ground reaction forces and absorbs energy (i.e., provides cushioning) as sole structure **20** impacts the ground. To enhance the force attenuation and energy absorption characteristics of sole structure **20**, midsole **21** may incorporate a fluid-filled bladder, as disclosed in U.S. Pat. Nos. 4,183,156 and 4,219,945 to Rudy. Alternately or in combination, midsole **21** may incorporate a plurality of discrete, columnar support elements, as disclosed in U.S. Pat. Nos. 5,343,639 and 5,353,523 to Kilgore et al. Outsole **22** is secured to a lower surface of midsole **21** and may be formed from carbon black rubber compound to provide a durable, wear-resistant surface for

engaging the ground. Outsole **22** may also incorporate a textured lower surface to enhance the traction characteristics of footwear **10**. In addition, footwear **10** may include an insole (not depicted), which is a relatively thin, cushioning member located within upper **30** and adjacent to a plantar surface of the foot for enhancing the comfort of footwear **10**.

Sole structure **20** is described above as having the elements of a conventional sole structure for athletic footwear. Other footwear styles, including, dress shoes and boots, for example, may have other types of conventional sole structures specifically tailored for use with the respective types of footwear. In addition to a conventional configuration, however, sole structure **20** may also exhibit a unique, non-conventional structure. Accordingly, the particular configuration of sole structure **20** may vary significantly within the scope of the present invention to include a wide range of configurations, whether conventional or non-conventional.

Upper **30** is depicted in FIGS. **2-7** as having a lateral region **31**, an opposite medial region **32**, an instep region **33**, a lower region **34**, and a heel region **35**. Lateral region **31** extends through a longitudinal length of footwear **10** and is generally configured to contact and cover a lateral side of the foot. Medial region **32** has a similar configuration that generally corresponds with a medial side of the foot. Instep region **33** is positioned between lateral region **31** and medial region **32**, and instep region **33** extends over an instep area of the foot. Lower region **34** forms a bottom surface of upper **30** and also extends through the longitudinal length of footwear **10**. Heel region **35** forms a rear portion of upper **30** and is generally configured to contact and cover a heel area of the foot. In addition, lateral region **31**, medial region **32**, instep region **33**, and heel region **35** cooperatively define an ankle opening **36** for providing the foot with access to the void within upper **30**.

Upper **30** is at least partially formed from textile element **40**, which forms regions **31-35**, and may also include laces or other elements associated with a conventional upper for footwear. Textile element **40** is a single material element that is formed to exhibit a unitary (i.e., one-piece) construction, and textile element **40** is formed or otherwise shaped to extend around the foot. As depicted in FIGS. **2-7**, textile element **40** forms both an exterior surface and an interior surface of upper **30**. Textile element **40** may be formed as a part of a larger textile element. Textile element **40** is then removed from the larger textile element and various edges of textile element **40** are secured together to form the shape of upper **30**. A plurality of seams **51-54** are formed, therefore, when joining the edges of the textile element. Seam **51** extends along the longitudinal length of lower region **34** and is centrally-located with respect to lateral region **31** and medial region **32**. Seam **52** is also centrally-located and extends upward along heel region **35**. A seam **53** is positioned in a forefoot area of upper **30** and joins a portion of lower region **34** with both of lateral region **31** and medial region **32**. In addition, a seam **54** is positioned in a rear area of upper **30** and joins a portion of lower region **34** with heel region **35**.

Textile element **40** exhibits the general shape depicted in FIG. **8** prior to the formation of seams **51-54**. Following formation of seams **51-54**, however, textile element **40** exhibits the shape of upper **30** depicted in FIGS. **2-7**. Seams **51-54** are formed by securing various edges of textile element **40** together. More specifically, (1) seam **51** is formed by securing an edge **41***a* with an edge **41***b*; (2) seam **52** is formed by securing an edge **42***a* with an edge **42***b*; (3) a first portion of seam **53** is formed by securing an edge **43***a* with an edge **43***b* (4) a second portion of seam **53** is formed by securing an edge **43***c* with an edge **43***d*; (5) a first portion of seam **54** is formed by securing an edge **44***a* with an edge **44***b*; and (6) a second portion of seam **54** is formed by securing an edge **44***c* with an edge **44***d*. Referring to FIG. **8**, the positions of regions **31-35** and ankle opening **36** are identified to provide a frame of reference relating to the various portions of textile element **40**.

In order to join edges **41***a* and **41***b* to form seam **51**, textile element **40** is folded or otherwise overlapped such that edge **41***a* is placed adjacent to edge **41***b*. Stitching, an adhesive, or heat bonding, for example, is then utilized to secure edge **41***a* and edge **41***b*. Textile element **40**, as depicted in FIG. **8**, has a generally planar configuration. Upon the formation of seam **51**, however, one portion of textile element **40** overlaps the other portion of textile element **40**. The volume between the overlapping portions effectively forms a portion of the void within upper **30** for receiving the foot.

The folding or overlapping of textile element **40** to form seam **51** places edge **42***a* adjacent to edge **42***b*, which facilitates the formation of seam **52**. With reference to FIG. **8**, an edge **45** forms a generally u-shaped area in textile element **40**. Upon the joining of edges **42***a* and **42***b* to form seam **52**, the u-shaped area becomes an aperture in textile element **40** and effectively forms ankle opening **36**. Each of edges **43***a*-**43***d* and edges **44***a*-**44***d* are formed from a generally v-shaped area of textile element **40**. Accordingly, seams **53** and **54** may be formed by closing the v-shaped areas and securing the various edges together.

Following the formation of each of seams **51-54**, the manufacturing of upper **30** is essentially complete. Various finishing steps may be performed, such as reinforcing ankle opening **36**, for example. Upper **30** (i.e., textile element **40**) is then secured to sole structure **20**, with an adhesive, for example. The insole is then placed into the void within upper **30** and adjacent to lower region **34**. In some embodiments, various reinforcing members may be added to the exterior or interior surface of upper **20** in order to limit the degree of stretch in upper **20** or provide enhanced wear-resistance. In addition, a lacing system may be added to provide adjustability.

Textile element **40** is a single material element with a unitary construction, as discussed above. As defined for purposes of the present invention, unitary construction is intended to express a configuration wherein portions of a textile element are not joined together by seams or other connections, as depicted with textile element **40** in FIG. **8**. Although the various edges **41***a*-**44***d* are joined together to form seams **51-54**, the various portions of textile element **40** are formed as an unitary element without seams, as discussed below.

Textile element **40** is primarily formed from one or more yarns that are mechanically-manipulated through either an interweaving, intertwining and twisting, or interlooping process, for example. As discussed in the Background of the Invention section above, interweaving is the intersection of two yarns that cross and interweave at right angles to each other. The yarns utilized in interweaving are conventionally referred to as warp and weft. Intertwining and twisting encompasses procedures such as braiding and knotting where yarns intertwine with each other to form a textile. Interlooping involves the formation of a plurality of columns of intermeshed loops, with knitting being the most common method of interlooping. Textile element **40** may, therefore, be formed from one of these processes for manufacturing a textile.

A variety of mechanical processes have been developed to manufacture a textile. In general, the mechanical processes

may be classified as either warp knitting or weft knitting. With regard to warp knitting, various specific sub-types that may be utilized to manufacture a textile include tricot, raschel, and double needle-bar raschel (which further includes jacquard double needle-bar raschel). With regard to weft knitting, various specific sub-types that may be utilized to manufacture a textile include circular knitting and flat knitting. Various types of circular knitting include sock knitting (narrow tube), body garment (seamless or wide tube), and jacquard.

Textile element **40** may be formed through any of the mechanical processes discussed above. Accordingly, textile element **40** may be formed on either a warp knitting machine or a weft knitting machine. One suitable knitting machine for forming textile element **40** is a wide-tube circular knit jacquard machine. Another suitable knitting machine for forming textile element **40** is a wide-tube circular knitting machine that is produced in the Lonati Group by Santoni S.p.A. of Italy under the SM8 TOP1 model number. This Santoni S.p.A. wide-tube circular knitting machine may form a textile structure having a diameter that ranges from 10 inches to 20 inches, with 8 feeds for each diameter. The machine exhibits a maximum 140 revolutions per minute for 10 inch diameters, and a maximum 120 revolutions per minute for 13 inch diameters. Furthermore, the machine gauge is variable between 16, 22, 24, 26, 28, and 32 needles per inch, and is suitable for various needle gauges ranging from 48 to 75.

A wide-tube circular knitting machine, as produced by Santoni S.p.A., forms a generally cylindrical textile structure and is capable of forming various types of stitches within a single textile structure. In general, the wide-tube circular knitting machine may be programmed to alter the design on the textile structure through needle selection. That is, the type of stitch that is formed at each location on the textile structure may be selected by programming the wide-tube circular knitting machine such that specific needles either accept or do not accept yarn at each stitch location. In this manner, various patterns, textures, or designs may be selectively and purposefully imparted to the textile structure.

An example of a textile structure **60** that may be formed with a wide-tube circular knitting machine is depicted in FIG. **9**. Textile structure **60** has a generally cylindrical configuration, and the types of stitches vary throughout textile structure **60** so that a pattern is formed with the outline of textile element **40**. That is, differences in the stitches within textile structure **60** form an outline with the shape and proportions of textile element **40**.

The Santoni S.p.A. wide-tube circular knitting machine may form a textile structure having a diameter that ranges from 10 inches to 16 inches, as discussed above. Assuming that textile structure **60** exhibits a diameter of 10 inches, then the circumference of textile structure **60** is approximately 31 inches. In many circumstances, the total width of textile element **40** will be approximately 12 inches, depending upon the size of footwear **10**. The outlines for at least two textile elements **40** may, therefore, be formed on textile structure **60**. Referring to FIG. **9**, the outline of textile element **40** is depicted on a front portion of textile structure **60**, and the outline of another textile element **40** is depicted on a rear portion of textile structure **60**. Accordingly, a first textile element **40** and a second textile element **40** may be simultaneously formed in a single textile structure **60**. As the diameter of textile element **60** is increased or the width of textile element **40** decreases, however, an even greater number of textile elements **40** may be outlined on textile structure **60**.

Textile structure **60** may be formed with a wide-tube circular knitting machine, as discussed above. The types of stitches that form textile structure **60** may be varied to form an outline of one or more textile elements **40** on textile structure **60**. That is, the wide-tube circular knitting machine may be programmed to form different types of stitches in textile structure **60** so as to outline one or more textile elements **40**. Each textile element **40** is then removed from textile structure **60** with a die-cutting, laser-cutting, or other conventional cutting operation. Once textile element **40** is removed from textile structure **60**, seams **51-54** may be formed and textile element **40** may be incorporated into footwear **10**.

The yarn forming textile element **40** may be generally defined as an assembly having a substantial length and relatively small cross-section that is formed of at least one filament or a plurality of fibers. Fibers have a relatively short length and require spinning or twisting processes to produce a yarn of suitable length for use in an interlooping process. Common examples of fibers are cotton and wool. Filaments, however, have an indefinite length and may merely be combined with other filaments to produce a yarn suitable for use in an interlooping process. Modern filaments include a plurality of synthetic materials such as rayon, nylon, polyester, and acrylic, with silk being the primary, naturally-occurring exception. Yarn may be formed of a single filament (conventionally referred to as a monofilament yarn) or a plurality of individual filaments. Yarn may also be formed of separate filaments formed of different materials, or the yarn may be formed of filaments that are each formed of two or more different materials. Similar concepts also apply to yarns formed from fibers. Accordingly, yarns may have a variety of configurations within the scope of the present invention that generally conform to the definition provided above.

In order to provide the stretch and recovery properties to upper **30**, and particularly textile element **40**, a yarn that incorporates an elastane fiber may be utilized. Elastane fibers are available from E.I. duPont de Nemours Company under the LYCRA trademark. Such fibers may have the configuration of covered LYCRA, wherein the fiber includes a LYCRA core that is surrounded by a nylon sheath. One suitable yarn, for example, includes a 70 denier elastane core that is covered with nylon having a 2 ply, 80 denier, 92 filament structure. Other fibers or filaments exhibiting elastic properties may also be utilized.

As discussed above, a yarn that incorporates elastane fibers is suitable for textile element **40**. A plurality of other yarns, whether elastic or inelastic, are also suitable for textile element **40**. The characteristics of the yarn selected for textile element **40** depend primarily upon the materials that form the various filaments and fibers. Cotton, for example, provides a soft hand, natural aesthetics, and biodegradability. Elastane fibers, as discussed above, provide substantial stretch and recoverability. Rayon provides high luster and moisture absorption. Wool also provides high moisture absorption, in addition to insulating properties. Polytetrafluoroethylene coatings may provide a low friction contact between the textile and the skin. Nylon is a durable and abrasion-resistant material with high strength. Finally, polyester is a hydrophobic material that also provides relatively high durability. Accordingly, the materials comprising the yarn may be selected to impart a variety of physical properties to textile element **40**, and the physical properties may include, for example, strength, stretch, support, stiffness, recovery, fit, and form.

Textile element **40** is depicted as having a generally smooth, non-varied stitch configuration. That is, similar stitches are utilized throughout textile element **40** to impart a common texture to the various portions of textile element **40**. As discussed above, however, a wide-tube circular knitting machine is generally capable of forming various types of stitches within a single textile structure. The wide-tube circular knitting machine may, therefore, vary the stitches within textile element **40** to produce various patterns, designs, or textures, for example. Various types of stitches may also be formed with other types of knitting machines. With reference to FIG. **10**, a textile element **40'** with the general shape of textile element **40** is depicted as having various areas with different textures. For example, a central area that corresponds with instep region **33** has a first texture **46'** that is generally smooth. In addition, textile element **40'** includes a second texture **47'** that is a plurality of longitudinal ribs. When incorporated into footwear **10**, the ribs will extend longitudinally along lateral region **31** and medial region **32**, and the ribs may extend into heel region **35**. The ribs may be present for aesthetic purposes, or may affect the stretch properties of upper **20**, for example. Accordingly, textile element **40'** exhibits areas with different textures in a single element of textile material.

Many conventional articles of footwear incorporate uppers with various material elements that each exhibit different properties. For example, a first material element may be smooth, and a second material element may be textured. The first and second material elements are then stitched together to form a portion of the conventional upper. Textile element **40'** also exhibits smooth and textured areas. In contrast with the conventional upper, however, first texture **46'** and second texture **47'** are incorporated into a single, unitary element of textile, rather than two separate elements that are stitched or otherwise joined together.

A textile structure **40"** is depicted in FIG. **11** and has the general shape of both textile element **40** and textile element **40'**. Textile element **40"** includes areas with three different textures. A first texture **46"** is generally smooth and has the configuration of various strips that extends laterally across areas corresponding with lateral region **31**, medial region **32**, and instep region **33**. Various portions of textile element **40"** also include a second texture **47"**, which is generally rough in comparison with first texture **46"**. In addition, the area of textile element **40"** corresponding with instep region **33** includes a third texture **48"**. The different textures **46"-48"** are formed by merely varying the type of stitch formed by the wide-tube circular knitting machine at each location of textile element **40"**. Textures **46"-48"** may exhibit aesthetic differences, or the differences may be structural. For example, the degree of stretch in areas with textures **46"-48"** may be different, or the wear resistance of the areas may vary depending upon the stitch utilized. The air-permeability of textile element **40"** may also vary in the different areas. Third texture **48"** is formed to include a plurality of apertures that extend through textile element **40"**. The apertures may be formed by omitting stitches at specific locations during the wide-tube circular knitting process, and the apertures facilitate the transfer of air between the void within upper **20** and the area outside of upper **20**. Accordingly, the various stitches formed in textile element **40"**, or one of textile elements **40** or **40'**, may be utilized to vary the texture, physical properties, or aesthetics of footwear **10** within a single, unitary element of material.

In addition to varying the stitch types to form textures **46'-47'** and **46"-48"**, the type of yarn utilized in various areas of textile elements **40'** and **40"** may be changed to impart different properties. As discussed above, yarn may be formed from cotton, wool, elastane, rayon, nylon, and polyester, for example. Each of these yarn types may impart differing properties to the areas corresponding with textures **46'-47'** and **46"-48"**. For example, elastane may be utilized to impart stretch, wool may be utilized for insulation, and nylon may be utilized for durability. Accordingly, different yarn types may be utilized to impart different properties. The types of knitting that may be utilized to form different zones with different properties (e.g., yarn characteristics, textures, etc.) may vary significantly to include the various warp knitting and weft knitting processes discussed earlier, such as tricot, raschel, double needle-bar raschel, circular knitting, and flat knitting, for example.

An article of footwear **110** is depicted in FIG. **12** and includes a sole structure **120** and an upper **130**. Upper **130** includes a textile element **140** having the general configuration of textile element **40**. As with textile element **40**, textile element **140** forms both an exterior surface and an interior surface of upper **130**. In addition, upper **130** includes a lace **131** and a plurality of elements **132-135** that also form a portion of the exterior surface. Lace **131** extends through a plurality of apertures formed in textile element **140**. The apertures may be formed by omitting stitches at specific locations. Element **132** is positioned in a forefoot area of footwear **110** and may be formed of leather or rubber, for example, to provide additional wear-resistance. Element **133** extends around the ankle opening to reinforce and limit stretch in the area of the ankle opening. Element **134** extends around the heel region to counter movement of the heel and seat the heel above sole structure **120**. Furthermore, elements **135** are substantially inextensible strips of material, such as leather or synthetic leather, that limit stretch on the lateral side of footwear **110**. Whereas upper **30** was almost exclusively formed by textile element **40**, upper **130** also includes lace **131** and elements **132-135**. Accordingly, an upper in accordance with the present invention may incorporate a plurality of additional components.

Another article of footwear **210** is depicted in FIGS. **13-14** and includes a sole structure **220** and an upper **230**. Upper **230** includes a textile element **240** that forms an interior layer. In addition, upper **230** includes an intermediate layer **250** and an exterior layer **260**. As discussed in the Background of the Invention section above, the upper of a conventional article of footwear may be formed from multiple material layers that include an exterior layer, a intermediate layer, and an interior layer. The materials forming the exterior layer of the upper may be selected based upon the properties of wear-resistance, flexibility, and air-permeability, for example. The intermediate layer of the upper may be formed from a lightweight polymer foam material that provides cushioning and protects the foot from objects that may contact the upper. Similarly, an interior layer of the upper may be formed of a moisture-wicking textile that removes perspiration from the area immediately surrounding the foot.

Upper **230** has a configuration that is similar to the configuration of the conventional upper in that various material layers are utilized. In contrast with the conventional upper, however, the interior layer is formed of textile element **240**, which is manufactured through the process discussed above. That is, textile element **240** is a single element of textile that forms the interior layer of upper **230**. A benefit to utilizing textile element **240** for the interior layer is that textile element **240** includes few seams that may contact the foot. In addition, the stitches utilized at various locations of textile element **240** may modify the texture of the interior

surface of upper **230**, thereby limiting the degree of slip that occurs between the foot and upper **230** or enhancing the air-permeability of upper **230** in specific locations.

Various warp knitting or weft knitting processes may be utilized to form textile element **40**, or the various other textile elements discussed above. An advantage of this process is that various stitches may be incorporated into specific locations of textile element **40** to modify the physical properties or aesthetics of textile element **40**. Whereas a conventional upper includes various elements that stitched or adhesively joined, textile element **40** is a single, unitary element of material. From the perspective of manufacturing, utilizing multiple materials to impart different properties to an article of footwear may be an inefficient practice. By forming textile element **40** to be a single, unitary element of material, however, efficiency is increased in that upper **20** may include a single textile element, rather than numerous joined elements.

A variety of knitting processes may be utilized to form textile element **40**, as discussed above. As a specific example, a jacquard double needle-bar raschel knitting machine may be utilized to form a flat textile structure, and may also be utilized to form the textile structure to have the configuration of a spacer mesh textile. Unlike textile structure **60**, which exhibits a generally cylindrical configuration, the textile structure formed with the jacquard double needle-bar raschel knitting machine will have a flat configuration. Like textile structure **60**, however, an outline of a textile element may be imparted to the textile structure formed with the jacquard double needle-bar raschel knitting machine. That is, differences in the stitches within the textile structure may form an outline with the shape and proportions of the intended textile element. Accordingly, the textile element may be removed from the textile structure and incorporated into footwear **10**. In addition, the jacquard double needle-bar raschel knitting machine may be utilized to impart various textures, different properties, or different yarn types to the textile element. Similarly, other types of knitting, such as a flat knitting, may be utilized within the scope of the present invention to impart various textures, different properties, or different yarn types to the textile element.

The present invention is disclosed above and in the accompanying drawings with reference to a variety of embodiments. The purpose served by the disclosure, however, is to provide an example of the various features and concepts related to the invention, not to limit the scope of the invention. One skilled in the relevant art will recognize that numerous variations and modifications may be made to the embodiments described above without departing from the scope of the present invention, as defined by the appended claims.

That which is claimed is:

1. An article of footwear comprising:

an upper incorporating a weft-knitted textile element having edges that are joined together to define at least a portion of a void for receiving a foot, wherein the weft-knitted textile element incorporates a single type of textile having a plurality of knit constructions; and

a sole structure secured to the upper.

2. The article of footwear recited in claim **1**, wherein the welt-knitted textile element forms at least a portion of a lateral side, a medial side, and an instep region of the upper.

3. The article of footwear recited in claim **1**, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper.

4. The article of footwear recited in claim **3**, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper.

5. The article of footwear recited in claim **4**, wherein the second seam extends vertically.

6. The article of footwear recited in claim **4**, wherein the edges include at least a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper.

7. The article of footwear recited in claim **1**, wherein the weft-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

8. The article of footwear recited in claim **1**, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the weft-knitted textile element farms at least a portion of the interior layer.

9. The article of footwear recited in claim **1**, wherein the weft-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper.

10. The article of footwear recited in claim **9**, wherein at least one additional element is secured to the exterior surface and forms a portion of the exterior surface.

11. The article of footwear recited in claim **10**, wherein the additional element is secured to a forefoot area of the upper.

12. The article of footwear recited in claim **10**, wherein the additional element is secured to a heel area of the upper.

13. The article of footwear recited in claim **1**, wherein the textile element forms an interior surface of the upper.

14. The article of footwear recited in claim **1**, wherein the weft-knitted textile element is created by circular knitting.

15. The article of footwear recited in claim **1**, wherein the weft-knitted textile element is created by flat knitting.

16. An article of footwear comprising:

an upper incorporating a weft-knitted textile element, the textile element 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.

17. The article of footwear recited in claim **16**, wherein the first stitch configuration provides a substantially smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smooth texture.

18. The article of footwear recited in claim **17**, wherein the second stitch configuration forms a rib structure in the second area.

19. The article of footwear recited in claim **16**, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the weft-knitted textile element.

20. The article of footwear recited in claim **16**, wherein the weft-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

21. The article of footwear recited in claim **16**, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the weft-knitted textile element forms at least a portion of the interior layer.

22. The article of footwear recited in claim **16**, wherein the textile layer forms at least a portion of both the interior surface and an exterior surface of the upper.

23. The article of footwear recited in claim **16**, wherein the weft-knitted textile element forms an interior surface of the upper.

24. An article of footwear comprising:

an upper incorporating a textile element having edges that are joined together to form seams and define at least a portion of a void for receiving a foot, the seams including a first seam and a second seam, the first seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper, and the second seam extending vertically in the heel area, wherein the textile element incorporates a single type of textile having a plurality of knit constructions; and

a sole structure secured to the upper.

25. The article of footwear recited in claim 24, wherein the footwear includes a third seam extending through the forefoot area of the upper.

26. The article of footwear recited in claim 24, wherein at least one of the knit constructions forms an aperture in the textile element.

27. The article of footwear recited in claim 24, wherein the knit constructions produce varying properties in the textile element including a varying elasticity of the textile element.

28. The article of footwear recited in claim 24, wherein the knit constructions produce varying properties in the textile element including a varying air permeability of the textile element.

29. The article of footwear recited in claim 24, wherein the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

30. The article of footwear recited in claim 24, wherein the textile element forms at least a portion of both an interior surface and an exterior surface of the upper.

31. The article of footwear recited in claim 24, wherein the textile element forms an interior surface of the footwear, and at least one additional layer forms an exterior surface of the footwear.

32. The article of footwear recited in claim 24, wherein at least a portion of the textile element has a weft knitted construction.

33. The article of footwear recited in claim 32, wherein the weft knitted construction is produced by one of circular knitting and flat knitting.

34. The article of footwear recited in claim 24, wherein the textile element has a warp knitted construction.

35. The article of footwear recited in claim 34, wherein the warp knitted construction is produced by a jacquard double needle-bar raschel.

36. An article of footwear comprising:

an upper incorporating a knitted textile element formed with a knitting machine, the textile element being removed from a textile structure that includes an outline of the textile element, and the textile element having edges that are joined together to define at least a portion of a void for receiving a foot, wherein the textile element incorporates a single type of textile having a plurality of knit constructions; and

a sole structure secured to the upper.

37. The article of footwear recited in claim 36, wherein the knitted textile element has a structure formed by a wide-tube circular knitting machine.

38. The article of footwear recited in claim 36, wherein the knitted textile element has a structure formed by a jacquard double needle-bar raschel knitting machine.

39. The article of footwear recited in claim 36, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper.

40. The article of footwear recited in claim 39, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper.

41. The article of footwear recited in claim 40, wherein the edges include at least a pair of third edges that are joined to form a second seam extending through a forefoot area of the upper.

42. The article of footwear recited in claim 36, wherein the knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

43. The article of footwear recited in claim 36, wherein the knitted textile element forms an interior surface of the upper.

44. An article of footwear comprising:

an upper incorporating a flat-knitted textile element, the flat-knitted textile element having a first area with a first unitary construction and a second area with a second unitary construction different from the first unitary construction, the first area having a first set of properties, and the second area having a second set of properties that is different from the first set of properties to impart varying characteristics to the textile element; and

a sole structure secured to the upper.

45. The article of footwear recited in claim 44, wherein the first set of properties and the second set of properties are at least one of a stitch configuration and a yarn type.

46. The article of footwear recited in claim 44, wherein the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 7,347,011 B2
APPLICATION NO. : 10/791289
DATED : March 25, 2008
INVENTOR(S) : Bhupesh Dua et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title page, Item (56), References Cited section, Other Publications:
Please insert the following reference: --International Search Report in corresponding PCT application, International Application No. PCT/US2005/004776, mailed May 19, 2005.--

In Column 11, Claim 2, Line 62:
Please replace "welt-knitted" with --weft-knitted--

In Column 12, Claim 8, Line 15:
Please replace "farms" with --forms--

In Column 12, Claim 23, Line 66:
Please replace "textilc" with --textile--

Signed and Sealed this

Seventeenth Day of February, 2009

John Doll

JOHN DOLL
Acting Director of the United States Patent and Trademark Office

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EXAMINER	
PATTERSON, MARIE D	
ART UNIT	PAPER NUMBER
3728	

DATE MAILED: 11/02/2007

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,289	03/03/2004	Bhupesh Dua	005127.00260	8919

TITLE OF INVENTION: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1440	$300	$0	$1740	02/04/2008

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(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,289	03/03/2004	Bhupesh Dua	005127.00260	8919

TITLE OF INVENTION: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1440	$300	$0	$1740	02/04/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
PATTERSON, MARIE D	3728	036-045000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

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☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,289	03/03/2004	Bhupesh Dua	005127.00260	8919

22909 7590 11/02/2007

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EXAMINER	
PATTERSON, MARIE D	
ART UNIT	PAPER NUMBER
3728	

DATE MAILED: 11/02/2007

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 506 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 506 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/791,289	DUA ET AL.	
	Examiner	Art Unit	
	Marie Patterson	3728	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment filed 1/12/07*.

2. ☒ The allowed claim(s) is/are *1-6,11-29,31-46,48,49 and 65-67*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Marie Patterson
Primary Examiner
Art Unit: 3728

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REMARKS

Applicants respectfully request entry of this Amendment and reconsideration of this application on its merits. Applicants also respectfully request a one month extension of time. The Commissioner is authorized to debit our Deposit Account No. 19-0733 for any necessary fees.

I. General Remarks Regarding the Content of this Amendment

Upon entry of this Amendment, claims 1-6, 11-29, 31-46, 48, 49, and 65-67 will remain pending in this application.

Applicants have amended claims 1, 2, 11-13, 18-20, 23-25, 27, 28, 31-33, 35-43, 48, 49, and 65. Claims 7-10, 30, 47, and 50-64 have been canceled. Claims 50-64 were withdrawn as being drawn to a non-elected invention. No new matter is included in this Amendment, and no additional claim fees are due as a result of this Amendment.

II. The Anticipation Rejections under 35 U.S.C. § 102 (b) Should be Withdrawn Because Applicants' Claims Patentably Distinguish from the Cited Art

In the September 12, 2006, Office Action, the Examiner rejected claims 1-11, 13, 14, 16-24, 26-35, 37-49, 65, and 67 in this application under 35 U.S.C. § 102 (b) as allegedly anticipated by Joha, U.S. Patent No. 1,888,172 (hereinafter "Joha"). For a claim to be anticipated by a prior art reference, the reference must contain each and every element of the claimed invention. *See, The Manual of Patent Examining Procedure*, § 2131. If a claim contains an element that is not disclosed in the prior art reference, then a rejection of that claim as being anticipated by the reference is improper and should be withdrawn. *Id.* As will be demonstrated below, Joha fails to anticipate Applicants' claimed invention.

Independent claims 1, 20, 28, 41, and 65, as amended, contain at least one element that is not found in the Joha reference. The Joha reference teaches "an improved form of knitted blank, and...also provide[s] means for utilizing such blanks to form knitted shoes." *See* Joha, at col. 1, lines 18-21. Another object of the Joha patent is to "provide means for reinforcing the heel and sole portions of [the] footwear to produce shoes having...continuously knitted uppers..." *Id.* at lines 42-46. Joha fails to disclose that the upper incorporates a single type of textile having a plurality of knit constructions

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as recited in claims 1, 28, and 41. Joha also fails to teach a weft-knitted textile element having first and second areas that each has a different stitch configuration to impart varying properties to each area of the textile element, as recited in claim 20. Nor does Joha have a first area having a first set of properties and a second area having a second set of properties that is different from the first set of properties, as recited in claim 65. Furthermore, claims 2-6, 13, 14, 16-19, 21-24, 26, 27, 29, 31-35, 37-49 and 67 depend from one of claims 1, 20, 28, 41, and 65, and thus are not anticipated by the Joha reference for at least the same reasons. Claims 7-10 and 30 have been canceled by this Amendment, which renders the rejection of these claims moot. Applicants respectfully request that the Office withdraw the rejection of claims 1-11, 13, 14, 16-24, 26-35, 37-49, 65, and 67 under 35 U.S.C. § 102 (b) based on the Joha patent.

In the September 12, 2006, Office Action, the Office rejected claims 1, 2, 7-11, 13-24, 26, 27, 41-43, 47-49, and 65-67 in this application under 35 U.S.C. § 102 (b) as allegedly anticipated by Throneburg, U.S. Patent No. 6,308,438 (hereinafter "Throneburg"). Independent claims 1, 20, 41, and 65, as amended, contain at least one element that is not found in the Throneburg reference. The Throneburg reference teaches a slipper sock with a knitted upper having a thickened ball portion and a thickened heel portion in the footbed. Throneburg fails to disclose that the upper incorporates a single type of textile having a plurality of knit constructions, as recited in claims 1 and 41. Nor does Throneburg teach a weft-knitted textile element having first and second areas that each has a different stitch configuration to impart varying properties to each area of the textile element, as recited in claim 20. Lastly, Throneburg fails to teach an upper having two different unitary constructions, as recited in claim 65. Although Throneburg teaches that the ball portion and heel portion of the footbed are "thickened," the construction of that knitting is not of a different construction than other areas of the upper, as recited in Applicants' claims. Furthermore, claims 2, 11, 13-19, 21-24, 26, 27, 42, 43, 47-49, 66, and 67 depend from one of claims 1, 20, 41, and 65, and thus are not anticipated by the Throneburg reference for at least the same reasons. Claims 7-10 have been canceled by this Amendment, which renders the rejection of these claims moot. Applicants respectfully request that the Office withdraw the rejection of claims 1, 2, 7-11, 13-24, 26, 27, 41-43, 47-49, and 65-67 under 35 U.S.C. § 102 (b) based on Throneburg.

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Election/Restrictions

1. Claims 50-64 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/19/06.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-11, 13, 14, 16-24, 26-35, 37-49, 65, and 67 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Joha (1888172).

Joha shows a shoe comprising a knitted upper with seams and a sole. In reference to the specific method by which the upper is knitted, such phrases have been treated as product by process limitations i.e. a comparison of the recited process with the prior art processes does NOT serve to resolve the issue concerning patentability of the product. In re Fessman, 489 F2d 742, 180 U.S.P.Q. 324 (CCPA 1974). Whether a product is patentable depends on whether it is known in the art or it is obvious, and is not governed by whether the process by which it is made is patentable. In re Klug, 333 F2d 905, 142 U.S.P.Q. 161 (CCPA 1964). In an ex parte case, product-by-process claims are not construed as being limited to the product formed by the specific process recited. In re Hirao et al., 535 F2d 67, 190 U.S.P.Q. 15, see footnote 3 (CCPA 1976). It is noted

that the numerous types of knitting are well known in the art and are noted in some of the cited references.

4. Claims 1, 2, 7-11, 13-24, 26, 27, 41-43, 47-49, and 65-67 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Throneburg (6308438).

Throneburg shows a shoe comprising a knitted upper with seams and a sole. In reference to the specific method by which the upper is knitted, such phrases have been treated as product by process limitations i.e. a comparison of the recited process with the prior art processes does NOT serve to resolve the issue concerning patentability of the product. In re Fessman, 489 F2d 742, 180 U.S.P.Q. 324 (CCPA 1974). Whether a product is patentable depends on whether it is known in the art or it is obvious, and is not governed by whether the process by which it is made is patentable. In re Klug, 333 F2d 905, 142 U.S.P.Q. 161 (CCPA 1964). In an ex parte case, product-by-process claims are not construed as being limited to the product formed by the specific process recited. In re Hirao et al., 535 F2d 67, 190 U.S.P.Q. 15, see footnote 3 (CCPA 1976). It is noted that the numerous types of knitting are well known in the art and are noted in some of the cited references.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if 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 to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 12, 25, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joha (1888172) in view of Fay, Sr. (5746013).

Joha shows a shoe substantially as claimed except for making the upper with three layers. Fay, Sr. teaches forming a knitted upper with an inner knitted layer (17), an intermediate layer (19) and an outer knitted layer (16) and an additional leather layer (11). It would have been obvious to make the upper from a plurality of layers, some knitted as taught by Fay, Sr. in the shoe of Joha to improve durability and comfort.

7. Claims 12 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Throneburg (6308438) in view of Fay, Sr. (5746013).

Throneburg shows a shoe substantially as claimed except for making the upper with three layers. Fay, Sr. teaches forming a knitted upper with an inner knitted layer (17), an intermediate layer (19) and an outer knitted layer (16) and an additional leather layer (11). It would have been obvious to make the upper from a plurality of layers, some knitted as taught by Fay, Sr. in the shoe of Throneburg to improve durability and comfort.

1. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Other useful information can be obtained at the PTO Home Page at www.uspto.gov.

In order to avoid potential delays, Technology Center 3700 is encouraging FAXing of responses to Office Actions directly into the Center at *(572)273-8300* **(FORMAL FAXES ONLY)**. Please identify Examiner Marie Patterson of Art Unit 3728 at the top of your cover sheet.

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Certificate Of Transmission

I hereby certify that this correspondence is being transmitted by facsimile to the United States Patent and Trademark Office at telephone number (571) 273-8300 on January 19, 2006.

Respectfully submitted,

By: Bytor S. Kuzara
Registration Number 51,255
Banner & Witcoff, Ltd.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Bhupesh DUA, et al.

Serial Number 10/791,289

Filed: March 3, 2004

For: AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

Art Unit: 3728

Examiner: Patterson, M.

Attorney Reference: 005127.00260

RESPONSE TO RESTRICTION REQUIREMENT

Commissioner for Patents
U.S. Patent and Trademark Office
Alexandria, VA 22313

Sir:

In response to the Restriction Requirement mailed January 5, 2006, the Applicants elect claims 1-49 and 65-67, which are drawn to an article of footwear. Claims 50-64 are, therefore, withdrawn from consideration. This election is made without traverse. The Applicants reserve the right, however, to file a divisional application to the non-elected claims.

This Response is being timely filed by facsimile transmission on January 19, 2006. Should fees or an extension of time be deemed necessary for consideration of this Response, such fees or extension are hereby requested and the Commissioner is authorized to charge deposit account number 19-0733 for the payment of the requisite fee. If anything further is

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[39] Following the formation of each of seams 51-54, the manufacturing of upper 30 is essentially complete. Various finishing steps may be performed, such as reinforcing ankle opening 36, for example. Upper 30 (i.e., textile element 40) is then secured to sole structure 20, with an adhesive, for example. The insole is then placed into the void within upper 30 and adjacent to lower region 34. In some embodiments, various reinforcing members may be added to the exterior or interior surface of upper 20 in order to limit the degree of stretch in upper 20 or provide enhanced wear-resistance. In addition, a lacing system may be added to provide adjustability.

[40] Textile element 40 is a single material element with a unitary construction, as discussed above. As defined for purposes of the present invention, unitary construction is intended to express a configuration wherein portions of a textile element are not joined together by seams or other connections, as depicted with textile element 40 in Figure 8. Although the various edges 41a-44d are joined together to form seams 51-54, the various portions of textile element 40 are formed as an unitary element without seams, as discussed below.

[41] Textile element 40 is primarily formed from one or more yarns that are mechanically-manipulated through either an interweaving, intertwining and twisting, or interlooping process, for example. As discussed in the Background of the Invention section above, interweaving is the intersection of two yarns that cross and interweave at right angles to each other. The yarns utilized in interweaving are conventionally referred to as warp and weft. Intertwining and twisting encompasses procedures such as braiding and knotting where yarns intertwine with each other to form a textile. Interlooping involves the formation of a plurality of columns of intermeshed loops, with knitting being the most common method of interlooping. Textile element 40 may, therefore, be formed from one of these processes for manufacturing a textile.

[42] A variety of mechanical processes have been developed to manufacture a textile. In general, the mechanical processes may be classified as either warp knitting or weft knitting. With regard to warp knitting, various specific sub-types that may be utilized to manufacture a textile include tricot, raschel, and double needle-bar raschel (which further includes jacquard double needle-bar raschel). With regard to weft knitting, various

specific sub-types that may be utilized to manufacture a textile include circular knitting and flat knitting. Various types of circular knitting include sock knitting (narrow tube), body garment (seamless or wide tube), and jacquard.

[43] Textile element 40 may be formed through any of the mechanical processes discussed above. Accordingly, textile element 40 may be formed on either a warp knitting machine or a weft knitting machine. One suitable knitting machine for forming textile element 40 is a wide-tube circular knit jacquard machine. Another suitable knitting machine for forming textile element 40 is a wide-tube circular knitting machine that is produced in the Lonati Group by Santoni S.p.A. of Italy under the SM8 TOP1 model number. This Santoni S.p.A. wide-tube circular knitting machine may form a textile structure having a diameter that ranges from 10 inches to 20 inches, with 8 feeds for each diameter. The machine exhibits a maximum 140 revolutions per minute for 10 inch diameters, and a maximum 120 revolutions per minute for 13 inch diameters. Furthermore, the machine gauge is variable between 16, 22, 24, 26, 28, and 32 needles per inch, and is suitable for various needle gauges ranging from 48 to 75.

[44] A wide-tube circular knitting machine, as produced by Santoni S.p.A., forms a generally cylindrical textile structure and is capable of forming various types of stitches within a single textile structure. In general, the wide-tube circular knitting machine may be programmed to alter the design on the textile structure through needle selection. That is, the type of stitch that is formed at each location on the textile structure may be selected by programming the wide-tube circular knitting machine such that specific needles either accept or do not accept yarn at each stitch location. In this manner, various patterns, textures, or designs may be selectively and purposefully imparted to the textile structure.

[45] An example of a textile structure 60 that may be formed with a wide-tube circular knitting machine is depicted in Figure 9. Textile structure 60 has a generally cylindrical configuration, and the types of stitches vary throughout textile structure 60 so that a pattern is formed with the outline of textile element 40. That is, differences in the stitches within textile structure 60 form an outline with the shape and proportions of textile element 40.

19. The article of footwear recited in claim 1, wherein the weft knitting process is flat knitting.

20. An article of footwear comprising:

an upper incorporating a textile element formed through a weft knitting process, the textile element 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.

21. The article of footwear recited in claim 20, wherein the first stitch configuration provides a substantially smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smooth texture.

22. The article of footwear recited in claim 21, wherein the second stitch configuration forms a rib structure in the second area.

23. The article of footwear recited in claim 20, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the textile element.

24. The article of footwear recited in claim 20, wherein the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

25. The article of footwear recited in claim 20, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the textile element forms at least a portion of the interior layer.

26. The article of footwear recited in claim 20, wherein the textile layer forms at least a portion of both an interior surface and an exterior surface of the upper.

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27. The article of footwear recited in claim 20, wherein the textile element forms an interior surface of the upper.

28. An article of footwear comprising:

an upper incorporating a textile element having edges that are joined together to form seams and define at least a portion of a void for receiving a foot, the seams including a first seam and a second seam, the first seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper, and the second seam extending vertically in the heel area; and

a sole structure secured to the upper.

29. The article of footwear recited in claim 28, wherein the footwear includes a third seam extending through the forefoot area of the upper.

30. The article of footwear recited in claim 28, wherein the textile element has a first area and a second area with a unitary construction, the first area being formed of a first stitch type, and the second area being formed of a second stitch type that is different from the first stitch type to impart varying properties to the textile element.

31. The article of footwear recited in claim 30, wherein at least one of the first stitch type and the second stitch type form an aperture in the textile element.

32. The article of footwear recited in claim 30, wherein the varying properties include varying elasticity of the textile element.

33. The article of footwear recited in claim 30, wherein the varying properties include varying air permeability of the textile element.

34. The article of footwear recited in claim 28, wherein the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

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35. The article of footwear recited in claim 28, wherein the textile layer forms at least a portion of both an interior surface and an exterior surface of the upper.

36. The article of footwear recited in claim 28, wherein the textile layer forms an interior surface of the footwear, and at least one additional layer forms an exterior surface of the footwear.

37. The article of footwear recited in claim 28, wherein the textile element is formed through a weft knitting process.

38. The article of footwear recited in claim 37, wherein the weft knitting process is one of circular knitting and flat knitting.

39. The article of footwear recited in claim 28, wherein the textile element is formed through a warp knitting process.

40. The article of footwear recited in claim 39, wherein the warp knitting process is jacquard double needle-bar raschel.

41. An article of footwear comprising:

an upper incorporating a textile element formed with a knitting machine, the textile element being removed from a textile structure that includes an outline of the textile element, and the textile element having edges that are joined together to define at least a portion of a void for receiving a foot; and

a sole structure secured to the upper.

42. The article of footwear recited in claim 41, wherein the knitting machine is a wide-tube circular knitting machine.

43. The article of footwear recited in claim 41, wherein the knitting machine is a jacquard double needle-bar raschel knitting machine.

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44. The article of footwear recited in claim 41, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper.

45. The article of footwear recited in claim 44, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper.

46. The article of footwear recited in claim 45, wherein the edges include at least a pair of third edges that are joined to form a second seam extending through a forefoot area of the upper.

47. The article of footwear recited in claim 41, wherein the textile element has a first area and a second area with a unitary construction, the first area being formed of a first stitch type, and the second area being formed of a second stitch type that is different from the first stitch type to impart varying textures to a surface of the textile element.

48. The article of footwear recited in claim 41, wherein the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

49. The article of footwear recited in claim 41, wherein the textile element forms an interior surface of the upper.

50. A method of manufacturing an article of footwear, the method comprising steps of:

mechanically-manipulating a yarn with a circular knitting machine to form a cylindrical textile structure;

removing at least one textile element from the textile structure;

incorporating the textile element into an upper of the article of footwear.

51. The method recited in claim 50, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine.

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52. The method recited in claim 50, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element.

53. The method recited in claim 50, wherein the step of mechanically manipulating includes forming the textile element to include 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 textures to a surface of the textile element.

54. The method recited in claim 50, wherein the step of mechanically manipulating includes forming at least two textile elements in the cylindrical textile structure.

55. The method recited in claim 50, wherein the step of mechanically manipulating includes forming apertures in the textile element.

56. The method recited in claim 50, wherein the step of incorporating includes securing a first pair of edges of the textile element to each other to form a first seam that extends along a lower region of the upper.

57. The method recited in claim 56, wherein the step of incorporating further includes securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper.

58. A method of manufacturing an article of footwear, the method comprising steps of:
mechanically-manipulating a yarn with a knitting machine to form a textile structure having an outline of at least one textile element;
removing the textile element from the textile structure;
incorporating the textile element into an upper of the article of footwear.

59. The method recited in claim 58, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine.

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60. The method recited in claim 59, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element.

61. The method recited in claim 58, wherein the step of mechanically-manipulating includes utilizing a jacquard double needle-bar raschel knitting machine.

62. The method recited in claim 58, wherein the step of mechanically manipulating includes forming the textile element to include 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 textures to a surface of the textile element.

63. The method recited in claim 58, wherein the step of incorporating includes securing a first pair of edges of the textile element to each other to form a first seam that extends along a lower region of the upper.

64. The method recited in claim 58, wherein the step of incorporating further includes securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper.

65. An article of footwear comprising:

an upper incorporating a textile element formed through a flat knitting process, the textile element having a first area and a second area with a unitary construction, the first area having a first set of properties, and the second area having a second set of properties that are different from the first set of properties to impart varying characteristics to the textile element; and

a sole structure secured to the upper.

66. The article of footwear recited in claim 65, wherein the first set of properties and the second set of properties are at least one of a stitch configuration and a yarn type.

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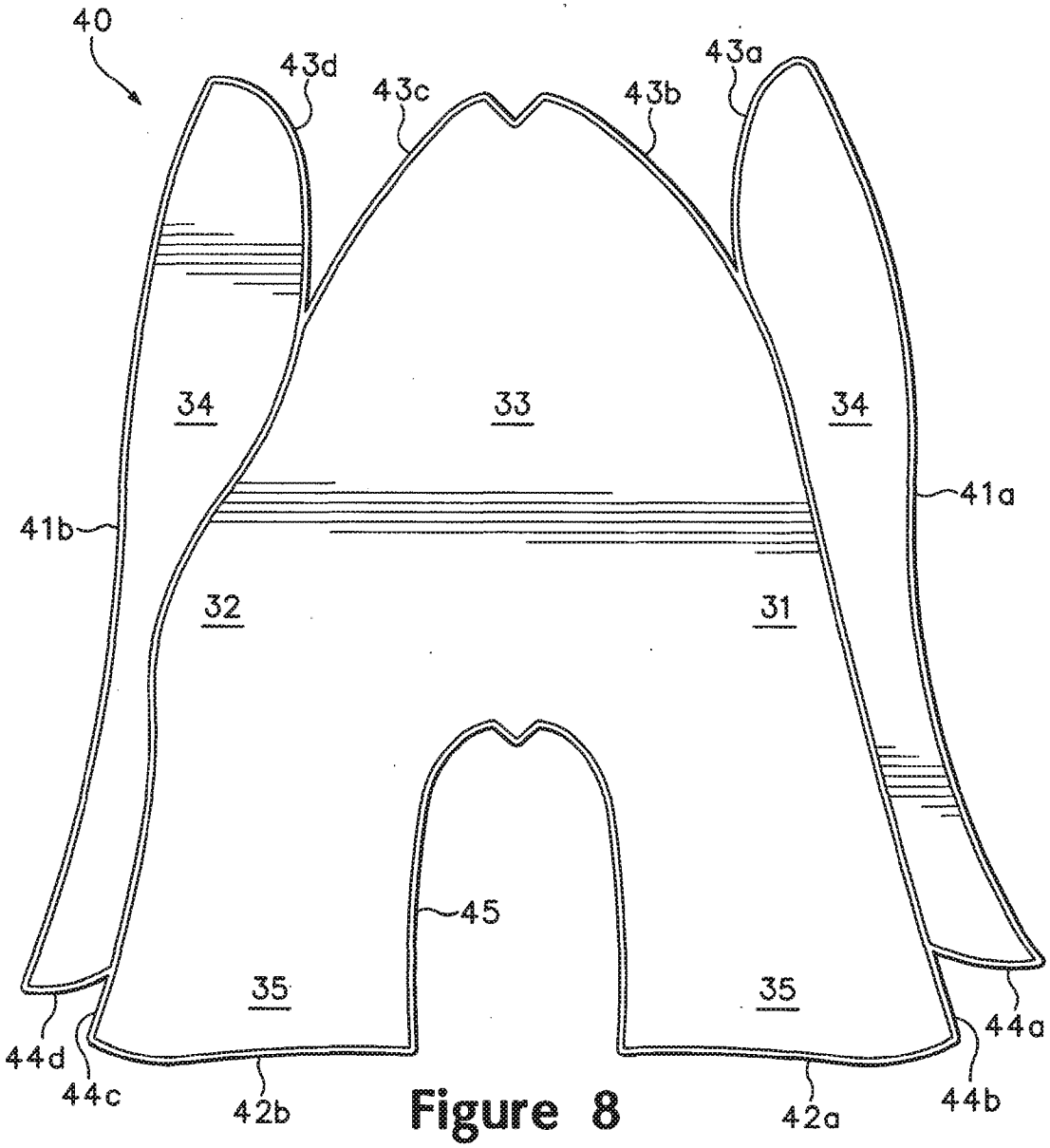

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Figure 8

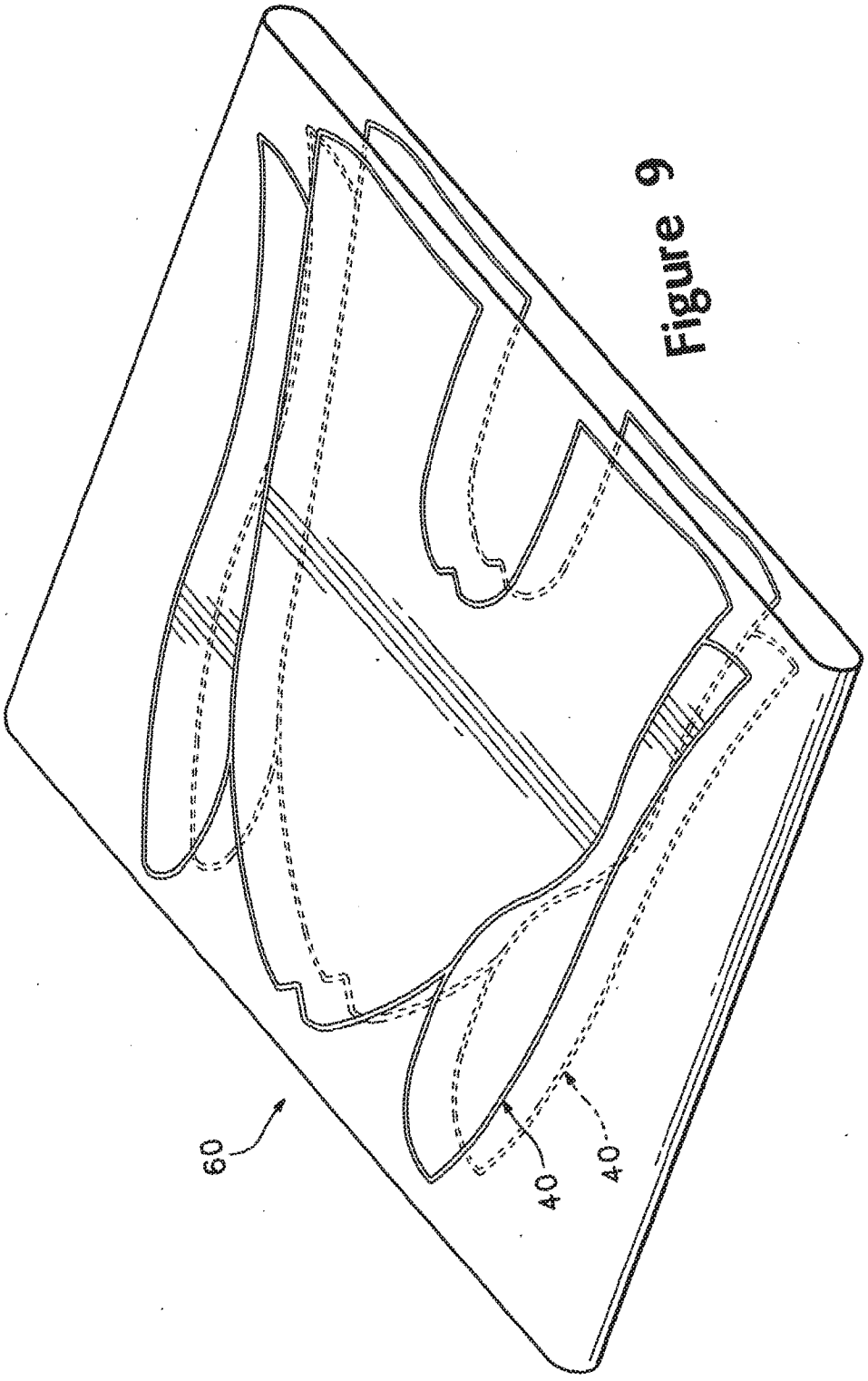


Figure 9

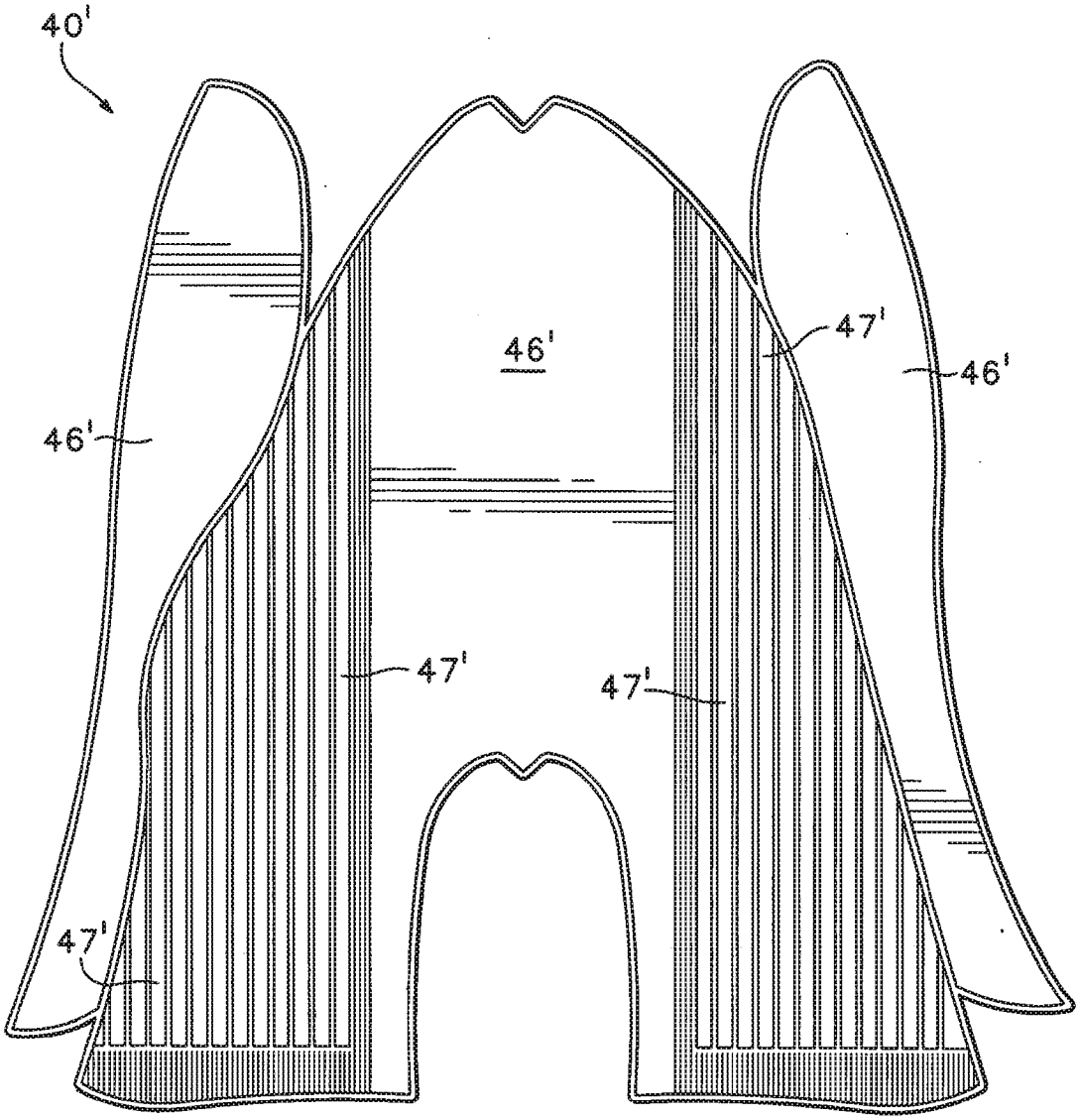


Figure 10

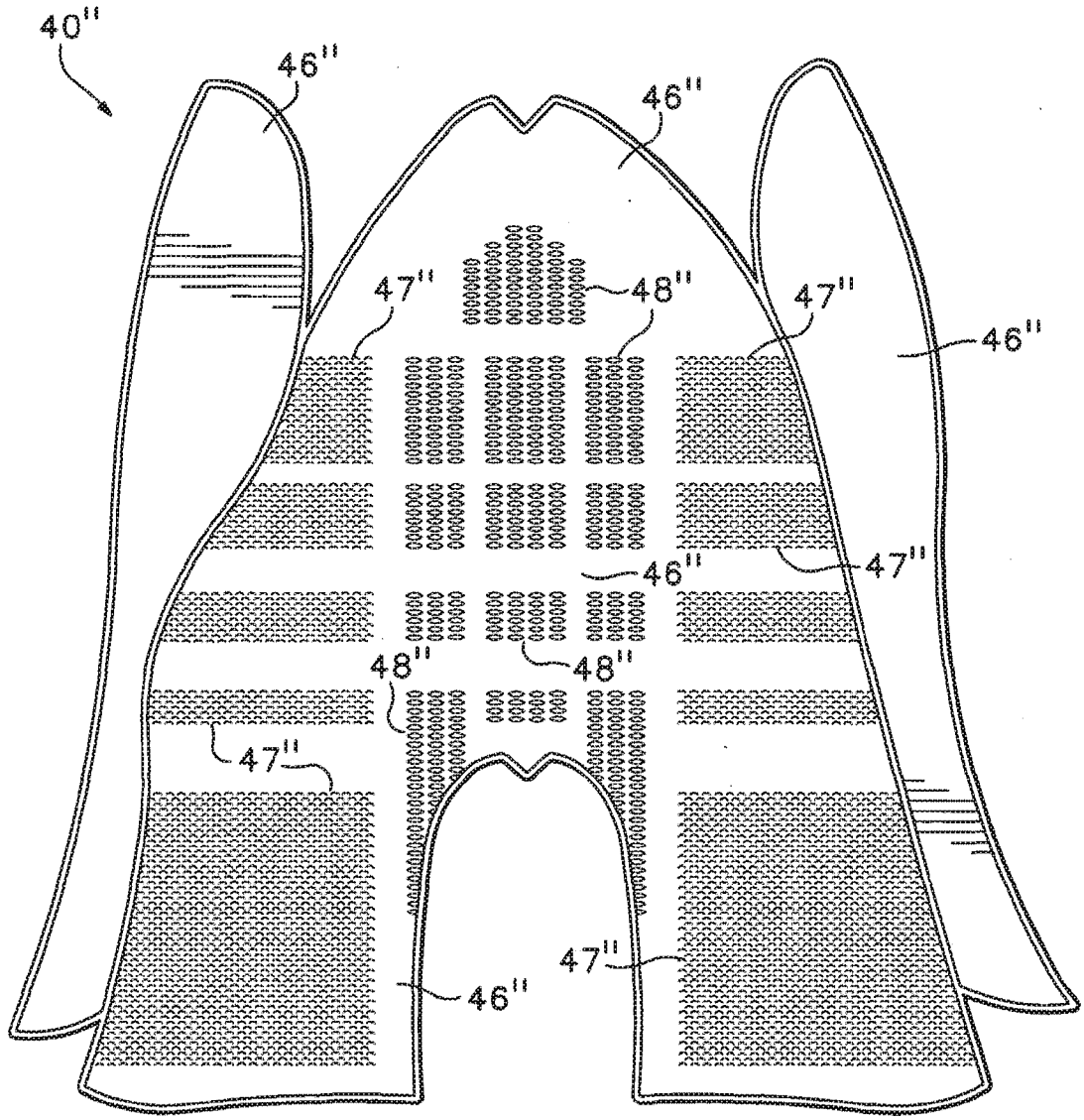


Figure 11

US005345638A

United States Patent [19]

Nishida

[11] Patent Number: 5,345,638

[45] Date of Patent: Sep. 13, 1994

[54] **PROCESS FOR PRODUCING A SHOE-SHAPED PART FROM A WEB OF MATERIAL AND RESULTING SHOE-SHAPED PART**

[75] Inventor: **Mamoru Nishida**, Taichung, Taiwan

[73] Assignee: **Tretorn AB**, Helsingborg, Sweden

[21] Appl. No.: **80,071**

[22] Filed: **Jun. 23, 1993**

Related U.S. Application Data

[63] Continuation of Ser. No. 899,690, Jun. 17, 1992, abandoned.

[30] **Foreign Application Priority Data**

Jun. 17, 1991 [JP] Japan 4119911

[51] **Int. Cl.**[5] **A43D 8/00**

[52] **U.S. Cl.** ..... **12/146 C**; 36/45

[58] **Field of Search** ..... 36/45, 47, 48, 49; 12/142 G, 146 C

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Primary Examiner—Paul T. Sewell
Assistant Examiner—Ted Kavanaugh
Attorney, Agent, or Firm—Sixbey, Friedman, Leedom & Ferguson

[57] **ABSTRACT**

For the production of a shoe upper by cutting out of the shoe upper in the form of a layout from a web of material, shaping of the shoe upper with connection of material parts of the layout with formation of seams, a process is used by which such shoe uppers can be produced in a timesaving and efficient manner despite the many individual parts present or to be made visible. For this purpose, a web of material (1) is used to produce layouts (2) by different production measures, such as different styles, yarn material, color, material thickness, single layer or multilayer type of material or the like, at the same time with the production of web of material (1), and with a sole part attached to the layout. The layout is cut from the web as a unit with the sole part and processed into a shoe part having an upper and sole part.

20 Claims, 4 Drawing Sheets

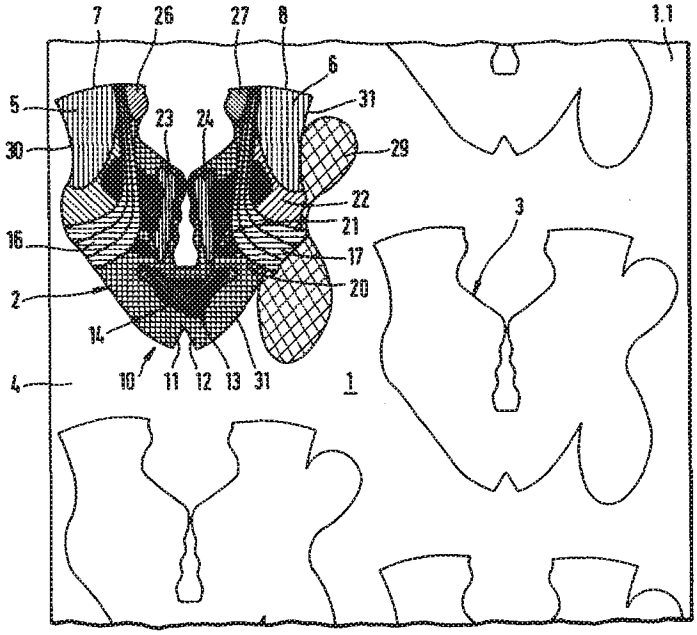
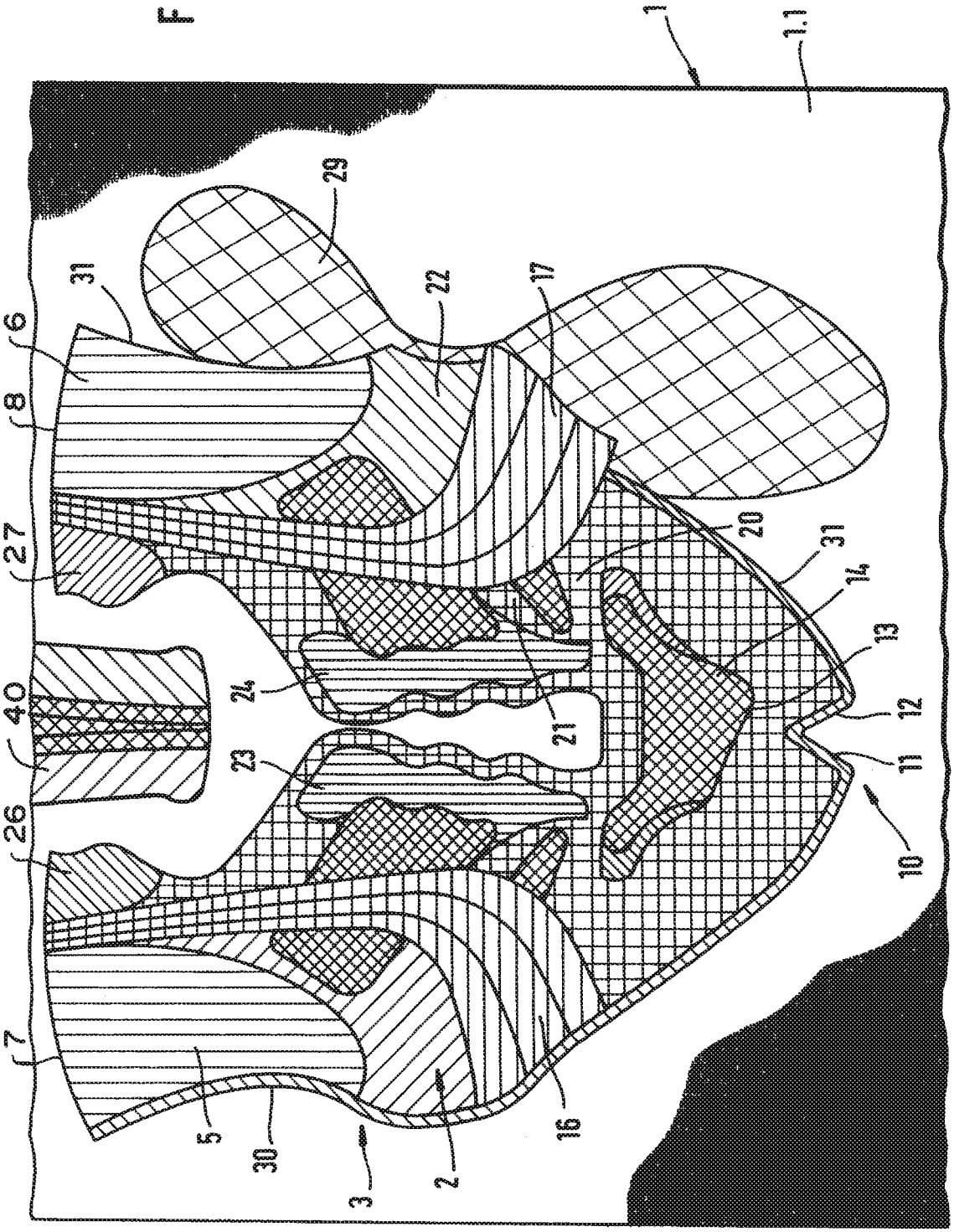


Fig. 1



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Fig. 2

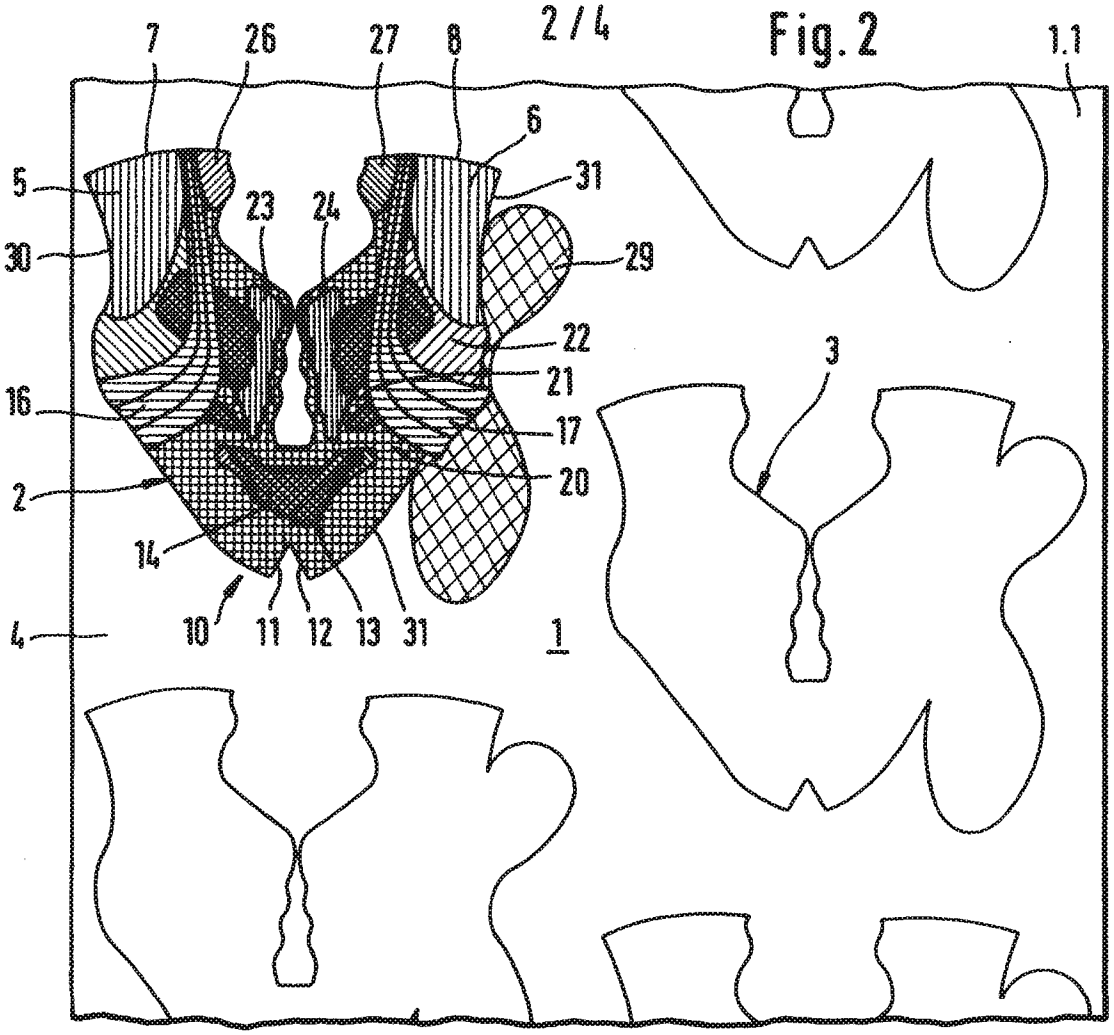
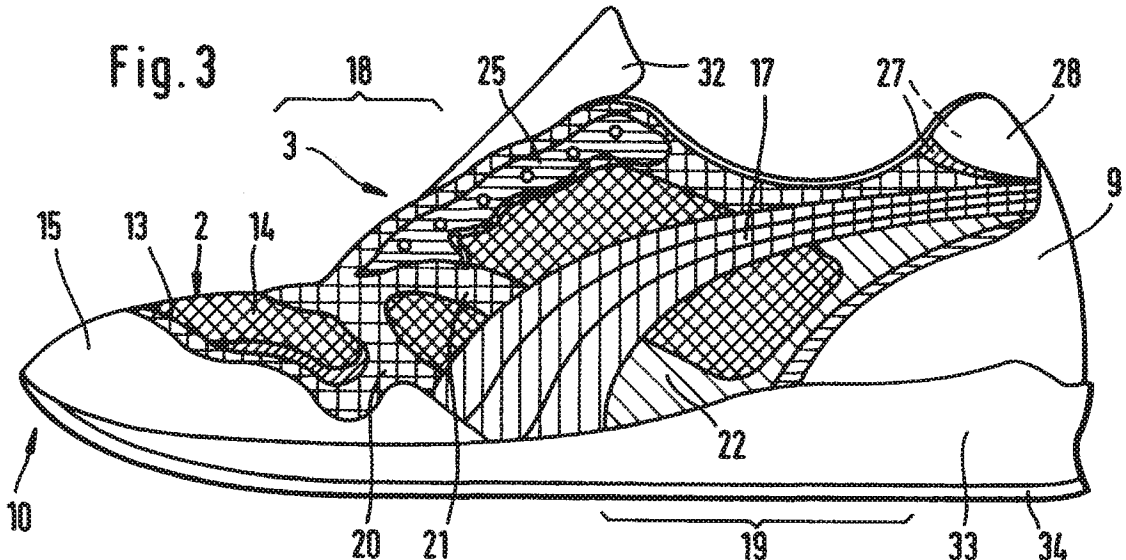


Fig. 3



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Skechers v Nike

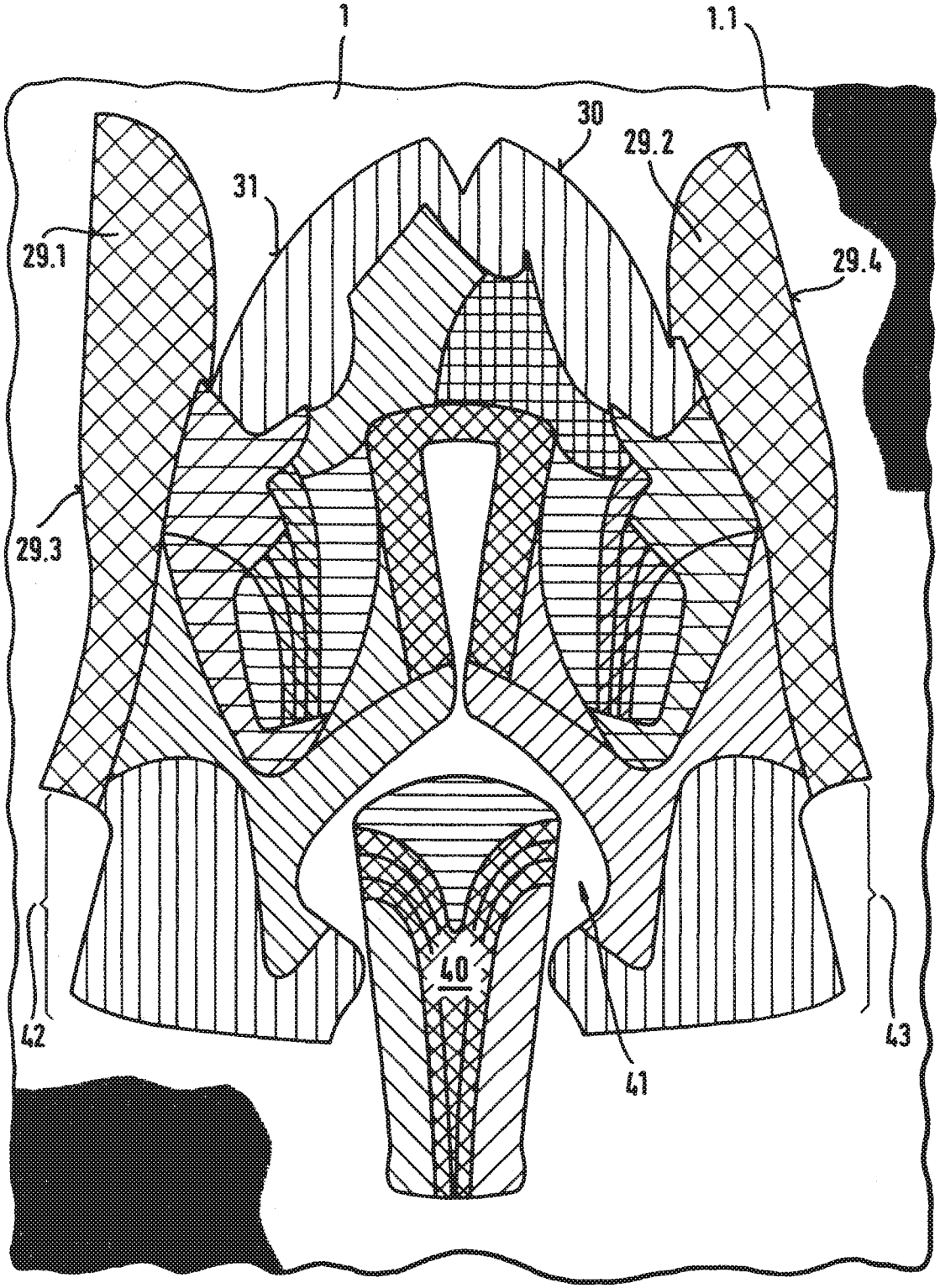


Fig. 4

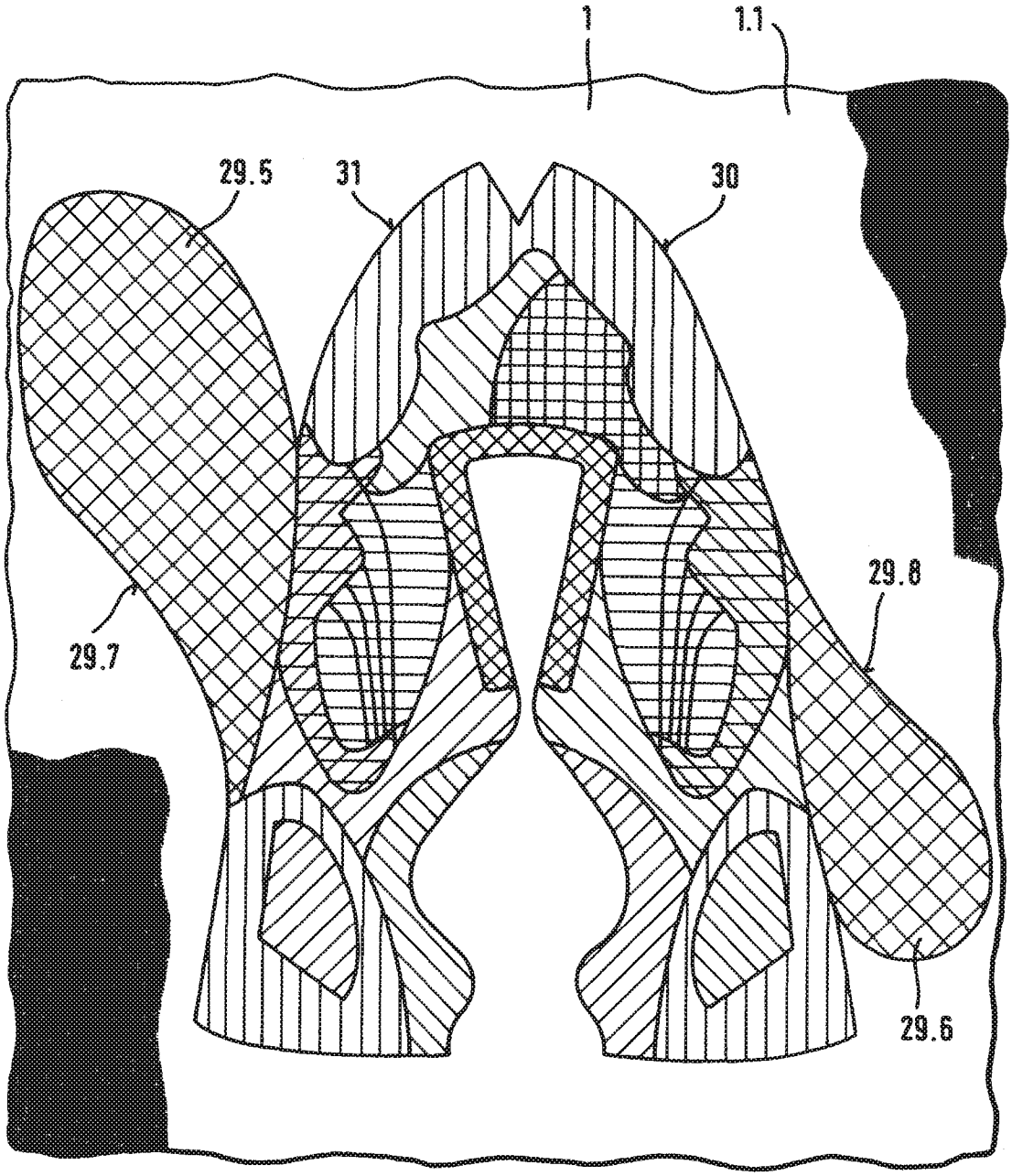


Fig. 5

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PROCESS FOR PRODUCING A SHOE-SHAPED PART FROM A WEB OF MATERIAL AND RESULTING SHOE-SHAPED PART

This application is a continuation of Ser. No. 07/899,690, filed Jun. 17, 1993, now abandoned.

BACKGROUND OF THE INVENTION

This invention relates to a process for the production of a shoe shaped part using a web of material with a plurality of patterns in the form of the layout of a shoe upper, cutting out these layouts from the web of material and stitching the parts of the shoe upper to a top part, and fastening the related part of the sole to the edge area of the cut-open outside edge of the assigned layout and to a shoe shaped part produced according to this process.

A process according to this general type is known from German Patent No. 627 878. There, a web of material is produced so that it successively has three crosswise strips of different weaves. Patterns in the form of the U-shaped layout of a shoe upper are printed on these crosswise strips. The crosswise strips are produced so that the first strip is suitable for the counter-stiffener, the second strip for the vamp and the side portions, and the third strip for the toe cap. Consequently, the second crosswise strip is elastic and multilayered, and the two other crosswise strips are produced in a nonelastic, hard-wearing way. Stiffening threads can also be worked in, and the crosswise strip for the counter-stiffener can be produced as a tubular material into which a heel counter can be inserted. The U-shaped parts are cut out of the material, stitched on the open U-side, which forms the counter-stiffener, and then a sole applied in a way not described in detail.

SUMMARY OF THE INVENTION

In view of the above, the primary object of this invention is to further develop this previously known process so that a shoe upper, in many cases, can be configured together with the related sole part, for example, can be produced with strip-like markings, decorations or the like, and so that, in this case, the production of such a shoe upper is nevertheless possible in an efficient and economical way.

This object is achieved by the following process steps:

in the production of a web of material, both the patterns or partial patterns in the form of layouts of the shoe upper and the patterns or partial patterns in the form of a sole part, are produced by a fabric printing process (which is generally well known in the textile industry) on the web of material and/or by a textile production process inside the web of material;

to each layout of the shoe upper there is directly assigned a sole part and is attached to the layout in the correct position of the shoe upper;

in the production of the web of material, the layouts or the areas in which the layouts are provided are produced in a woven and/or knitted type different from the sole parts or those areas in which these patterns are provided;

those areas of the layouts and/or sole pans, which are exposed to the different stresses when wearing the shoe, are produced in the woven and/or knitted types correspondingly matched to the stresses they will experience;

the layouts and the sole parts assigned to one another are not completely separated from one another when cut out of the web of material, and remain connected with one another, as a cut-out unit, by corresponding material sections;

from the cut-out units, each of which has a layout with an associated sole part, first the layout is connected on the provided seams to a shoe upper, and then, the sole part is stitched or basted to the free outside edge of the corresponding layout.

By the process according to the invention, 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 or areas of such patterns in the web of material after their completion. The cutting waste accumulating with cutting out therefore represents a simple, lightweight and inexpensive material. In contrast, with the known material that has crosswise strips, the entire cutting waste, for example, consists of an expensive tubular material, multilayer material or the like.

It is of further advantage in the process according to the present invention that the individual patterns or partial patterns already can be produced directly in the production of the web of material in the desired shoe size, by which the cutting waste can be still further limited, since the individual patterns or partial patterns in the provided size can directly adjoin one another. Nevertheless, it is possible to configure the individual patterns or partial patterns soft, stiff, elastic, colored differently or the like, corresponding to the later stressing or desired shaping. Only inside and/or outside stiffening elements, such as inside and/or outside toe caps, heel counters or the like have to be applied later on.

With the use of program-controlled web of material production devices, after a one-time creation of the program, the size of the layout corresponding to the shoe size, the woven or knitted type of individual areas or contours, the type of fiber or yarn and/or the color can be selected almost at will. Therefore, only a small number of individual parts have to be produced separately and applied to the upper later.

These and other objects, features and advantages of the invention will be apparent from the following detailed description when viewed in conjunction with the accompanying drawings which show, for purposes of illustration, only several embodiments in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top view of a section of a web of material with a layout for a shoe upper worked in during its production;

FIG. 2 is a section of a web of material with a plurality of layouts for different shoe uppers;

FIG. 3 is a side view of a shoe with an upper formed of a layout produced from a web of material according to FIGS. 1 and 2;

FIG. 4 shows a section of a web of material with a layout having sole part sections provided on both sides as well as a tongue; and

FIG. 5 shows a section of a web of material with a layout which has a forefoot sole part section on one side

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and a rear or heel part sole part section on the opposite side.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In FIGS. 1 and 2, a web of material is identified by 1, and is produced by a conventional textile process, tier example, by weaving and/or knitting and/or embroidering. The web of material 1 can be provided with a single or with a plurality of layouts 2 of the shape of a shoe upper 3, as it is represented from the side, for example, in FIG. 3.

The web of material has a backing 4 that can be a conventionally used material formed, for example, of a warp and filling or a knitted fabric. Layout 2 is divided into different individual parts or areas, which differ from one another, such as by being of another material style and/or by being of different fibers or yarns, for example, from wool, wool with metal yarns, silk, silk with metal yarns, wool with plastic fibers or the like and/or by being formed of different colors, such as from fibers or yarns of different colors, including those of metals, or by different color prints, and/or by being differently designed fiber extrudates or fiber extrudate compositions, such as twisted, processed parallel or the like.

The individual parts or areas of shoe upper 3 can be representations of those areas on which a trimming, for example, a part resistant to wear, is applied. For example, areas 5 and 6 are provided for applying an inside or outside heel counter 9 (FIG. 3). After cutting out layout 2 from the web of material 1, the edges 7 and 8 are stitched together and a heel seam thus is formed. Then, heel counter 9, represented in FIG. 3, is applied, for example, glued and/or stitched, to adjacent areas 5 and 6.

Correspondingly, the contours of edges 11 and 12 are stitched together in the form of shoe toe 10, and a seam is formed on the shoe toe. To reduce wear, a toe cap 15, represented in FIG. 3, can be applied, especially glued and/or stitched, on the front area, adjacent to front edge 13 of toe area 14.

Since, generally, toe area 14 is designed to be relatively deformably soft or elastic, and optionally, also permeable to air, the web of material 1, in toe area 14, according to the present invention, is correspondingly designed by suitable selection of the weave pattern, knit pattern and/or the material used, such as, for example, Silk or plastic. The type of production can, additionally, insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a net-like woven or knitted structure.

The areas identified as positions 16 and 17 represent individual parts, which serve for identification purposes, such as the "Formstrip" trademark of PUMA AG Rudolf Dassler Sport illustrated in this case. Of course, other trademarks, identifications or patterning may be incorporated instead.

Areas 20, 21 and 22, identified in FIG. 3, running from instep area 18 to heel area 19, cannot only be configured in the form of pull straps but also can be produced especially tension-proof. In the production of web of material 1, suitable measures can be used to make these upper areas so as to achieve the desired effects; for example, in this case, especially tension-proof fibers or yarns can be used. Optionally, in this case, the 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.

Finally, in the embodiment according to FIGS. 1 and 2, with layout 2 on the web of material 1, areas 26 and 27 are produced in a configuration, color or style that is different from the other areas. A heel counter 28, represented in FIG. 3, is applied on areas 26, 27 after formation of the initially described heel seam.

As can be seen, any number of layouts 2 in the most varied configurations and/or designs as well as of different sizes can be produced on a single web of material 1. For this purpose, above all, the use of program-controlled, particularly computer-controlled, production devices is advantageous, so that style, color, design, size or the like can be varied at will.

According to an advantageous further development of the invention, an individual part 29 in the form of an insole can be co-produced on layout 2 of shoe upper 3. After being cut out, this individual part 29 remains connected with layout 2, and after or during the shaping and fixing of shoe upper 3 from layout 2, part 29 is folded into the plane of the shoe sole and is fastened to the lower edge zone of the shoe upper 3. This lower edge zone is defined in layout 2 by outside contours 30 and 31, and the manner of its fastening can be, in a way known in the art, for example, by gluing, stitching, tacking or the like.

In the production of web of material 1 or after its production, and optionally after cutting out of layout(s) 2, layout(s) 2 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.

Finally, before or after cutting out of layout(s) 2, a tongue 32 (FIG. 3) is applied in the forefoot area. After the production of shoe upper 3, an insole and/or a midsole, optionally, is additionally applied or molded on.

Completed shoe upper 3 is then brought into a gluing, injection or casting mold, in which a midsole 33 and an outsole 34 are molded by known measures, as is represented in FIG. 3.

The advantages of the previously described process according to the invention can be seen especially in the fact that, with a fully developed loom, up to 7 different textile fibers or yarns, and the same number of colors, can be put in, especially woven in, the web of material in one operation. As already indicated, any sizes and different upper designs can be produced by computer-controlled programs, starting from corresponding basic patterns. The completed shoe uppers produced from such webs of material are marked by an extremely low weight, for example, between 70 to 80 g in a shoe size of 8. The costs for the production of such uppers are exceptionally low in comparison with previously known processes.

In FIGS. 1 and 2, unfinished surface areas, which lie outside layouts 2 for shoe upper 3 or for tongue 40, are shown with position number 1.1.

According to an advantageous further development of the invention, the sole part 29, which is represented in FIGS. 1 and 2 as an individual part, can be designed so as to be divided lengthwise, crosswise or obliquely into at least two. In such a case, at least one sole part

section is provided on each outside contour **30**, **31** of a layout **2**.

With the embodiment according to FIG. **4**, a sole part section **29.1** that extends over the entire length of the sole is provided on outside contour **31** in the approximate form of a half of sole part **29**, and a sole part section **29.2** which forms the remainder of sole part **29** is provided on the outside contour **30**. Both sole part sections **29.1** and **29.2** complement each other to complete sole part **29**. In this case, their outside contours **29.3** and **29.4** are connected with one another, for example stitched and/or glued and/or fused or the like, preferably by a longitudinal seam.

With the embodiment according to FIG. **5**, a forefoot sole part section **29.5** is provided on outside contour **31** of layout **2** of shoe upper **3**, and a heel sole part section **29.6** is provided on outside contour **30**. Their outside contours **29.7** or **29.8** are later folded under so as to face the middle of shoe upper **2** and are connected with one another to, then, form the entire sole part **29**. The seam resulting in this case runs crosswise, obliquely, or obliquely in approximately an S-shape or the like corresponding to the configuration of outside contours **29.7** or **29.8**. The path of this seam is preferably selected so that it cannot exert an unpleasant pressure on the sole of the foot.

Additionally, the tongue **40**, for example, according to FIG. **4**, can be provided also in the course of producing the web of material **1** with different weave structures and/or weave patterns and/or embroideries or with one or with several prints or the like. On a web of material **1**, different tongues **40** can be produced corresponding to a shoe shape and/or a shoe size both in shape, size, color or colors, patterns or the like. Preferably, in each case, related tongues **40** are produced simultaneously with a layout **2** on same web of material **1**.

For optimum surface use of web of mmaterial **1**, a tongue **40** can be produced in the open space **41** located between the two layout sections **42** and **43**, which later form the rear of foot or heel-pan shoe part.

Preferably, each layout **2** has at least five, preferably more than ten, patterns and a tongue **40** has at least two, preferably at least three patterns produced or appearing, which are different from one another in each case.

In an advantageous further embodiment of the invention, the web of material **1** is produced so that its surface areas **1.1**, in which no layout(s) **2** or tongue(s) **40** are provided, consist of a lightweight material quality that is as simple and economical as possible. For example, these surface areas **1.1** can be produced like a gauze or with low to very low warp and/or filling gauge and/or, for example, by being thin-spun or the like. Thus, an especially efficient production of shoe shaped parts, such as shoe uppers is assured in connection with soles and/or tongues or the like.

Preferably, areas of layout(s) **2**, sole parts **29**, especially of sole part sections **29.1** and **29.2** or **29.5** and **29.6**, can comprise a textile portion of material which can soak up moisture well. Preferably, cotton is used for this purpose. The portion of the absorbent material is at least about 25% of the entire material. Depending on the application, this portion can be increased up to 100%.

As already indicated, the webs of material being used can be produced by program-controlled web material production devices whose programs can be matched almost at will according to the corresponding basic setting with deviations in the size of the layouts of the individual shoe uppers or with changes of the type of weave or knit of individual areas or contours, the type of fiber or yarn and/or the color.

I claim:

1. Process for the production of a plurality of shoe shaped parts using a web of material having a plurality of patterns in the form of a layout of a shoe upper thereon, comprising the following process steps:

producing a web of material having an overall construction and having at least portions of patterns thereon which are in the form of layouts of a shoe upper and a sole part, wherein in each layout the shoe upper is directly associated with a sole part by the sole part being attached to the layout in a position of the shoe upper corresponding to an intended location of the sole part relative to the shoe upper in a finished shoe, wherein the layouts of the shoe upper and sole parts are produced by modifying the overall construction of the web of material in the locations of the layouts relative to that in portions thereof where the layouts of the shoe upper and the sole parts are not provided, using one of a different weaving and knitting type for the layouts of the shoe upper than is used for producing the sole parts, said weaving and knitting types being matched to differing requirements for materials of the shoe upper and sole part of a shoe in relation to properties thereof including at least one of the properties of absorptivity, air permeability, softness, extensibility, wear resistance and appearance;

cutting out the layouts from the web of material in a manner leaving the layouts of the shoe upper at least partially connected to the sole parts directly associated therewith as a cut-out unit; and

first stitching parts of the layout of the cut-out unit on provided seams to form an upper of the shoe shaped part, and then fastening the associated sole part of the cut-out unit to an outside edge area of the associated layout by one of stitching and basting.

2. Process according to claim **1**, further comprising the step of providing at least one of the layouts of the shoe upper and the sole parts with stiffening means in areas thereof.

3. Process according to claim **1**, wherein, during said producing step, the sole part is formed of sole part sections which extend over the entire length of an insole to be formed and which are connected to outside contours of the layout of the shoe upper; and wherein outside edge portions of the sole part sections are fastened together, by producing a lengthwise seam, to form the sole part

4. Process according to claim **1**, wherein, during said producing step, the sole part is formed of forefoot sole part section on one outside contour of the layout of the shoe upper and of a heel sole part section on another outside contour; and wherein outside edge portions of the sole part sections are fastened together, by producing one of a crosswise, obliquely, and S-shaped seam, to form the sole part.

5. Process according to claim **1**, comprising the further step of applying an embroidery at least to the layouts.

6. Process according to claim **5**, wherein the embroidery is produced at least partially as English embroidery.

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7. Process according to claim 1, further comprising the step of applying one of an insole and a midsole to the sole part after forming of the shoe upper.

8. Process according to claim 1, further comprising the step applying a tongue to the layout by at least one of stitching, gluing and lasting.

9. Process according to claim 8, wherein tongues are produced on a web of material of at least one of different patterns, different types of textiles, colors, and pressures.

10. Process according to claim 9, wherein said tongues are produced on the same web of material as the layouts and sole parts.

11. Process according to claim 10, wherein the tongues are made at least partially in an open space between sections of the layout which later are formed into a heel part of the shoe upper.

12. Process according to claim 10, wherein the tongues are produced on a portion of said web of material which is of at least one of a lower quality, density and weight relative to portions of the web of material on which the layouts are produced.

13. Shoe shaped part produced by the process of claim 10, wherein each layout is produced having at least five patterns of different types of production.

14. Shoe shaped part according to claim 13, wherein each tongue is produced having at least two patterns of different types of production.

15. Shoe shaped part according to claim 14, wherein the sole part has a textile portion made of a material with good moisture-absorbing properties.

16. Shoe shaped part according to claim 15, wherein the material with good moisture-absorbing properties is cotton.

17. Shoe shaped part according to claim 15, wherein the material with good moisture-absorbing properties comprises at least about 25% of the entire material of which the sole part is formed.

18. Shoe shaped part produced by the process of claim 10, wherein each layout is produced having at least five patterns of different types of production.

19. Shoe shaped part according to claim 18, wherein the sole part has a textile portion made of a material with good moisture-absorbing properties.

20. Process according to claim 9, wherein the tongues are produced on a web of material which is of at least one of a lower quality, density and weight relative to the web of material on which the layouts and sole parts are produced.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 5,345,638

DATED : September 13, 1994

INVENTOR(S) : Mamoru Nishida

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page, Item No. [30], change "Japan" to -- Germany --

Signed and Sealed this

Thirteenth Day of December, 1994

Attest:

BRUCE LEHMAN

Attesting Officer

Commissioner of Patents and Trademarks

Feb. 14, 1939. A. A. GLIDDEN 2,147,197

ARTICLE OF FOOTWEAR

Filed Nov. 25, 1936 2 Sheets-Sheet 1

Fig-3

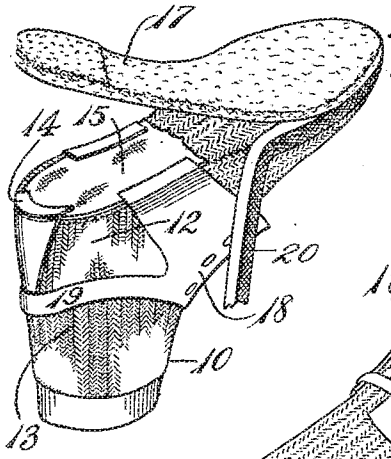


Fig-1

Fig-4

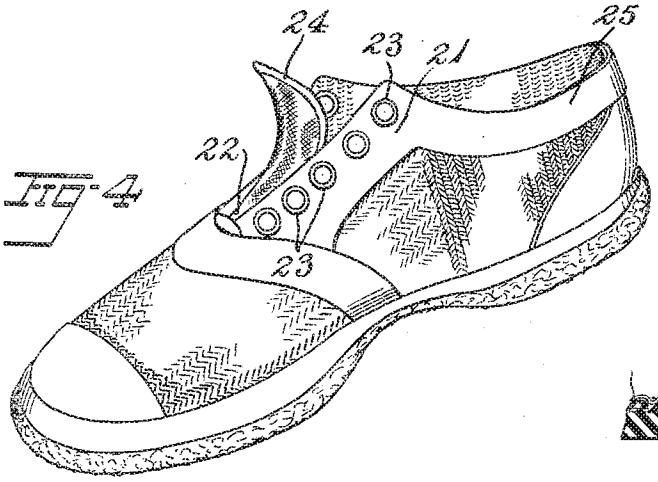


Fig-2

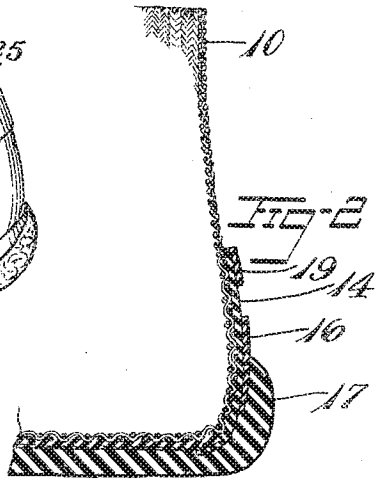
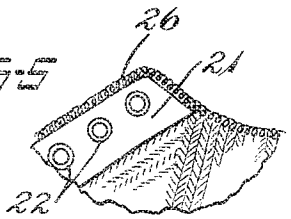


Fig-5



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By Willis F. Avery
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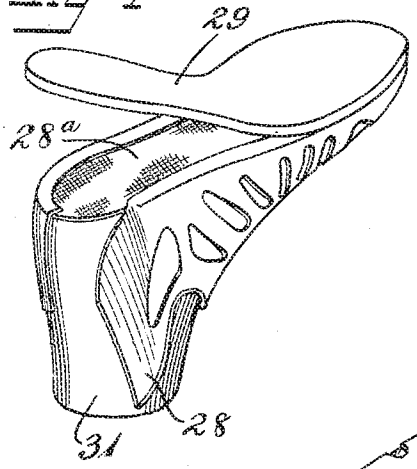
Skechers EX1013-p. 5624
Skechers v Nike

Feb. 14, 1939. A. A. GLIDDEN 2,147,197

ARTICLE OF FOOTWEAR

Filed Nov. 25, 1936 2 Sheets-Sheet 2

Fig-1



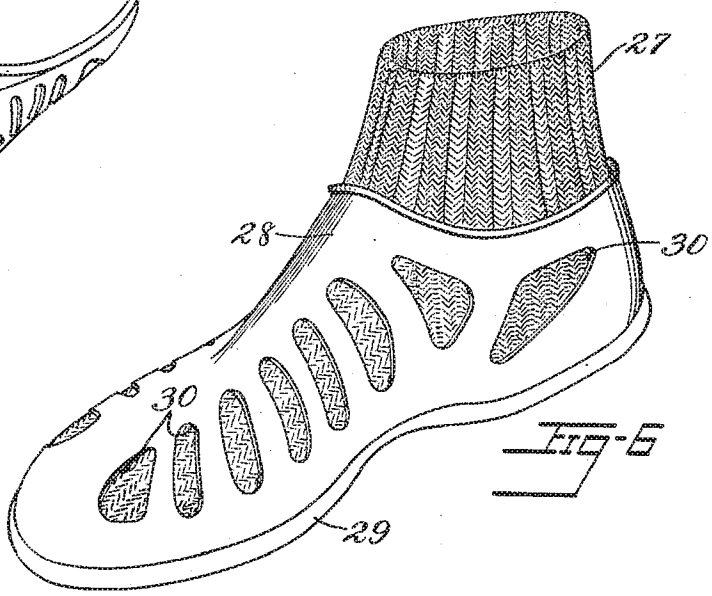


Fig-6

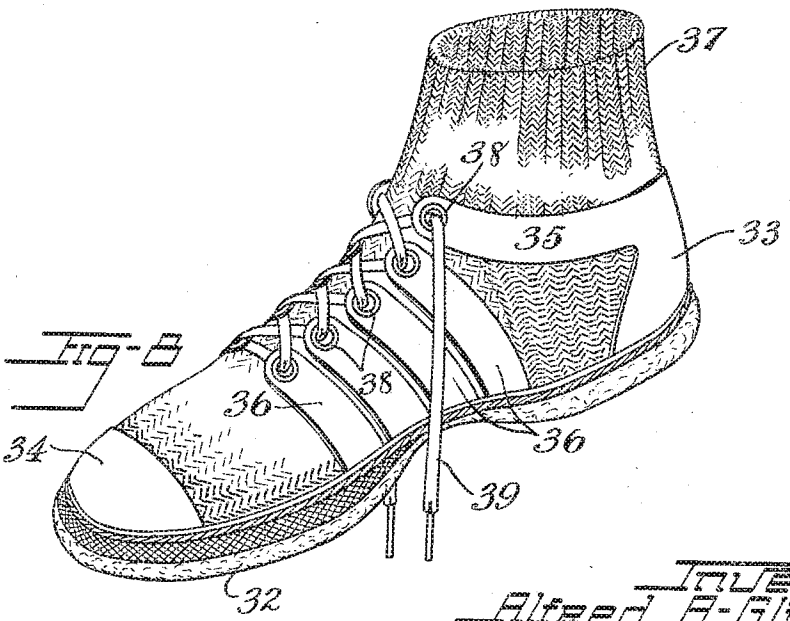


Fig-8

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Skechers EX1013-p. 5625
Skechers v Nike

Patented Feb. 14, 1939 2,147,197

UNITED STATES PATENT OFFICE

2,147,197

ARTICLE OF FOOTWEAR

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Application November 25, 1936, Serial No. 112,735

5 Claims. (Cl. 36—9)

This invention relates to articles of footwear and to methods of making the same, and is especially useful in the manufacture of shoes having textile uppers. Heretofore shoes for use in playing athletic games and for similar purposes, sometimes called sneakers or tennis shoes, have been manufactured from substantially nonstretchable canvas or similar woven material. It has been the practice to construct the uppers with a fabric lining attached to the upper by an intervening layer of rubber. In the manufacture of such shoes a great amount of waste has been involved in the cutting of the fabric parts, and due to the substantially nonstretchable nature of the textile material comprising the upper difficulty has been experienced in providing the proper shape to such shoes. The resulting shoes are of such a nonabsorbent nature and so impervious to moisture that discomfort has been caused to the wearer by perspiration. The woven materials which have been used in the uppers of such shoes are subject to objectionable shrinkage from repeated wetting and drying, adding further discomfort to the wearer.

The principal objects of the present invention are to provide comfort, stretchability, light weight, breathability and absorption properties in an article of footwear and to provide for economy of materials and convenience of procedure in the manufacture of the same. Other objects will appear from the following description and the accompanying drawings.

Of the drawings:

Fig. 1 is a perspective view of a shoe embodying and made in accordance with the invention, part of the rubber being broken away.

Fig. 2 is a detailed cross sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a perspective view of the shoe of Fig. 1 during a stage of its manufacture, the parts of the shoe being partially assembled upon a last.

Fig. 4 is a perspective view of another embodiment of the invention in its completed form.

Fig. 5 is a fragmentary view of a portion of the upper margin of a shoe illustrating a further embodiment in which an overcast stitching is applied to the margin.

Fig. 6 is a perspective view of a further embodiment of the invention in which the elastic textile upper is removable from the remainder of the shoe.

Fig. 7 is a perspective view illustrating the building of the rubber portions of the shoe of Fig. 6 upon a last, the rubber portion of the shoe being shown as partially completed.

Fig. 8 is a perspective view of a further embodiment of the invention in its completed form.

Referring to the drawings, the invention contemplates the construction of an article of footwear in which an upper of extensible and elastic textile material, such, for example, as knited material, and of such extent as to form the complete upper including the insole, is fabricated without substantial waste to the desired shape to accommodate the foot without uncomfortable wringles. A reinforcing structure, preferably of rubber is provided on the outer face of the upper in form-fitting contact therewith without wrinkling or buckling of either of the parts, while preferably leaving extensive portions of the textile upper exposed to provide breathability and facility of flexing.

Referring to the drawings:

In proceeding according to the method of this invention a complete and integral, extensible and elastic, unlined shoe upper 10 is formed, preferably by knitting, to final form and without waste, of yarn which may be of any suitable material, such for example, as cotton, wool, combinations of cotton and wool, animal fibers such as mohair, alpaca, cellulose filaments such as rayon, cellulose acetate or the like, vegetable fibers such as jute, sisal, hemp or especially prepared fibers such as combinations of rayon, shredded leather held together by resinous bodies, natural or artificial dispersions of rubber or other agglutinous material.

In fabricating the unitary upper, as by knitting, areas thereof which are normally subjected to greater wear and in which a lower degree of elasticity is desired, such as the toe 11 and the heel portion 12, may be more densely fabricated to provide therein heavier weight and less extensibility than in the other parts of the upper, as by changing the type of stitch or amount or thickness of the yarn in the knitting. Other areas, such as the ankle portion 13, are preferably made so as to provide softness and elasticity, as by making them of ribbed construction, as shown.

In the embodiment of Fig. 1 the entire upper, preferably including the insole, is fabricated as an integral, shaped, sock-like article although in some cases the insole portion may be omitted, if that is desired. In any event the complete article preferably is formed as nearly to the shape of the last on which the shoe is to be built as possible. The fabricated upper is slipped over the building last and the remaining parts of the shoe are assembled thereon and attached in form-fitting relation either by adhesion or by sewing

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operations. The upper may be wetted either before or after being applied to the last and then dried on the last in order to more closely conform it to the shape of the last.

In order to provide good ventilation and comfort it is desirable to leave as much of the elastic upper exposed as possible and all of the trimming pieces are reduced to a minimum. In the embodiment of Fig. 1, after the upper has been applied to the last, the parts, preferably of rubber including a counter 14, heel reinforcement 16, outsole 17 and a blucher saddle 18 having an integral heel strap 19, which encircles the rear of the shoe, are mounted in place upon the upper as illustrated in Fig. 3, and may be cemented thereto in the places where it is desired to attach the parts to the upper, and a foxing 20 is preferably applied around the lower portion of the shoe where it joins the outer sole. A filler or reinforcing layer 15, preferably of thin, rubberized fabric, may be provided to facilitate assembly and to provide a stronger union of the outsole to the textile upper and to provide greater smoothness of the inner sole bottom. The article is then vulcanized preferably while on the last and then removed therefrom. The eyelets 18a for receiving the shoe lace 18b may be applied to the margins of the blucher saddle 18 after vulcanization. The blucher saddle is permanently attached to the upper only at or near the sole leaving the eyeleted portion free. While rubber is the preferred material, some or all the parts applied to the upper in this and the other embodiments may in some cases be of any other suitable material, such as fabric, or natural or artificial leather. Where rubber is used, it may be unreinforced, or it may be reinforced, as by fabric, if desired.

In the embodiment of Fig. 4 the front of the upper has reinforcing stays 21 secured thereto, as by cementing or stitching, over the instep and extending to the top of the shoe, and the upper may be slit as at 22, preferably after vulcanization, to provide a vent extending from the top of the shoe to the instep in a forward direction, the stays being provided with eyelets 23 for lacing. A tongue 24 also may be provided. In some cases the tongue 24 and the slit 22 may be omitted, the stays being retained, however, to permit lacing, and for bracing. A strap 25 may be provided, extending around the back of the foot and secured at its ends to the stays. As shown, the shoe may be of the low type with the strap 25 extending along the top margin of the upper.

Where the cutting of the textile upper, to provide the slit 22, or for any other purpose, leaves a raw textile edge which might ravel or fray, the edges may be protected, as by an overcast stitch 26, as illustrated in Fig. 5, where the stitch is shown as extending not only along the margins of the slit, but also along the top margin of the upper at the leg opening.

Other modifications of the invention, in which the rubber portion of the shoe may be detachable from the textile upper to facilitate washing the upper, are illustrated in Figs. 6, 7 and 8.

In the embodiment of Figs. 6 and 7, the lower portion of the textile upper 27 is embraced by an integral rubber covering 28 having no lacings or other fastening means, but provided with a sole 29 and formed with ventilating and expansion-facilitating openings 30 which expose the textile upper.

Whether or not the rubber portion 28 is to be attached to the upper it is preferably built upon the textile upper while the latter is upon a last, as in the building of the embodiments shown in Figs. 1 and 4, or a last which corresponds in dimension and shape with the outside of the lasted textile upper 27 may be constructed, and the rubber portion may be assembled thereabout and vulcanized thereon, as illustrated in Fig. 7, in which a perforated sheet of material 28 is shown as being laid about the last 31, and the sole 29 is laid thereon in adhesive engagement with the sheet 28. A filler or reinforcing layer 28a, like 15 of Fig. 3, may be provided if desired, to facilitate uniting the sole 29 to the part 28 and to provide a smooth inner bottom. The vulcanized article will have the same inside dimensions and shape as the textile upper 27 and the two may be assembled without wrinkling of the upper or objectionable localized stretching of either of the parts. If desired, the rubber part 28 may then be cemented to the textile upper over all or a part of their contacting surfaces.

The embodiment of Fig. 8 may be constructed in similar manner. Here a sole 32 is provided with a counter 33, toe cap 34, heel straps 35, and sole straps 36, united to each other. This rubber structure may be assembled either upon a last having the textile upper 37 thereon, or upon a last formed to the same outside dimensions and shape as the outside of the lasted upper 37, and vulcanized thereon. If the rubber portion has been formed without the use of the textile upper, the upper is then placed therein. Eyelets 38 and a lacing 39 are provided for securing the shoe on the foot. In this embodiment, also, the upper may be either removable or cemented or otherwise attached in place over at least a portion of the area of contact with the rubber parts.

An article of footwear constructed according to the invention has decided advantages over articles of footwear heretofore produced. Because of the unlined, absorbent nature of the upper perspiration is readily absorbed and evaporated from the foot. The high porosity of the upper provides good ventilation, and the flexibility of the upper and its inherent elasticity provide a degree of comfort comparable to wearing well fitted socks without shoes, while the outsole, which may be of any desired type and may be of crepe soling or may be molded to provide any desired anti-skid surface, provides adequate traction and protects the feet in walking. Where the foxing 20 is extended for a substantial distance above the sole the shoe may be used upon wet floors without wetting the feet. Comfort to the wearer is contributed to in a large measure by the fact that the outer parts of the shoe, whether attached to the upper or not, are built to fit each other so that the shoe will fit the wearer without wrinkles or other undesirable non-foot-conforming malformations.

Since the entire upper of the shoe, including the insole, preferably is formed of continuous elastic textile material, such shoes may be worn directly over the feet without the use of stockings or socks. The stretchability of the upper, especially when an upwardly-extending, flexible rubber sole and foxing are provided, permits the elimination of half sizes and makes it easier to provide a good fit.

I claim:

1. A shoe having an upper of porous elastic material providing an elastic top portion, a less flexible midportion and substantially less flexible

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portions at the lower margin of its sides and at its toe and heel, a sole on said upper and a bracing structure secured to the sole and extending over the instep portion of the upper to restrain the upper from being excessively stretched, the bracing structure covering only a portion of the upper thereby leaving extensive ventilating area of the latter exposed.

2. A shoe having an upper of knitted material providing elasticity and ventilating porosity by virtue of the knitted construction, a sole on the upper, and a bracing structure secured to the sole and extending over the instep portion of the upper to restrain the upper from being excessively stretched, the bracing structure covering only a portion of the upper thereby leaving extensive ventilating area of the latter exposed and said upper having in the foot portion below the ankle a plurality of zones of knitted material of different degrees of stiffness merged integrally by knitted union with one another to provide localized reinforcement of the knitted material acting in cooperation with said bracing structure to resist excessive localized stretching while providing elasticity and ventilation of the upper.

3. A shoe having an upper of knitted material providing elasticity and ventilating porosity by virtue of the knitted construction, a sole adhered to the upper, and a bracing structure secured to the sole and adhered at least in part directly to said upper and extending over the instep portion of the upper to restrain the upper from being excessively stretched, the bracing structure covering only a portion of the upper thereby leaving extensive ventilating area of the latter exposed and said upper having at the margin of an adhered portion of said bracing structure a zone of increased density of knitting merging with a zone of the knitted material of less dense knitting spaced from the bracing structure to provide local reinforcement of the knitted material at the margin of the bracing structure against excessive localized stretching.

4. A shoe having an upper of such knitted construction as to provide an elastic top portion, a less flexible midportion and a substantially less flexible lower portion, the upper being porous for ventilation by virtue of the knitted construction, a sole on the upper, and a bracing structure secured to the sole and extending over the instep portion of the upper to restrain the knitted upper from being excessively stretched, the bracing structure covering only a portion of the upper thereby leaving extensive ventilating area of the latter exposed.

5. A shoe having a sock-like upper of such knitted construction as to provide an elastic top portion, a less flexible midportion, and substantially less flexible portions at the lower margin of its sides and at its toe and heel, a sole essentially of rubber adhered to the upper and a bracing structure essentially of rubber for restraining the upper from being excessively stretched, said structure comprising a portion adhered to the sole and extending over the instep of the upper and a portion adhered to the sole at the heel and extending forwardly around the upper, the bracing structure covering only a portion of the upper thereby leaving extensive ventilating area of the latter exposed.

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Skechers EX1013-p. 5628
Skechers v Nike

June 9, 1953 D. V. WHITING ET AL 2,641,004

METHOD FOR PRODUCING KNITTED SHOE UPPERS OF SHRINKABLE YARN

Filed Dec. 26, 1950

Fig. 1.

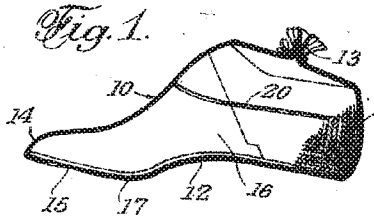


Fig. 2.

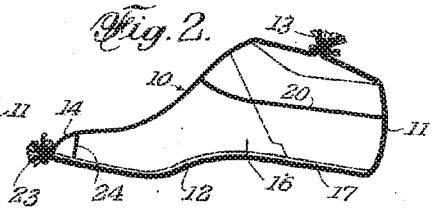


Fig. 3.

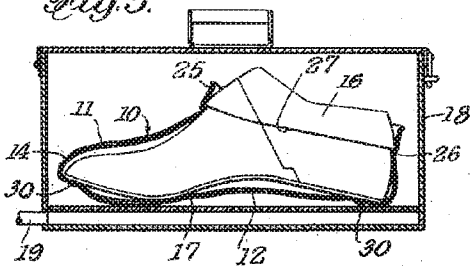


Fig. 6.

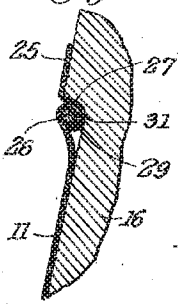


Fig. 7.

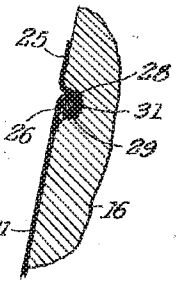


Fig. 4.

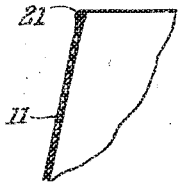


Fig. 5.

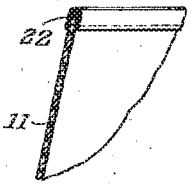
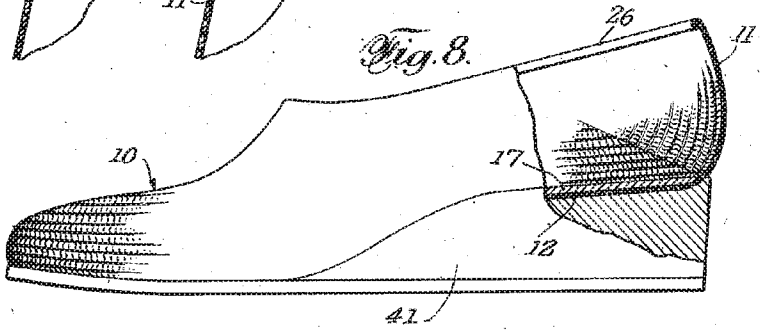


Fig. 8.



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Patented June 9, 1953 2,641,004

UNITED STATES PATENT OFFICE

2,641,004

METHOD FOR PRODUCING KNITTED SHOE UPPERS OF SHRINKABLE YARN

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Application December 26, 1950, Serial No. 202,664

3 Claims. (Cl. 12—142)

1

This invention relates to shoe construction and more particularly to a method for producing shoes having knitted, woven, crocheted or similar textile fabric uppers. While the uppers employed in the present method may be fabricated as indicated in the various ways above mentioned, at the present time, they are most advantageously knitted. Accordingly, this term will be hereinafter employed to also include mesh or net fabric regardless how the same may be produced.

In attempts to satisfactorily produce a knitted shoe upper, many difficulties have been encountered and, up to the present time, have not been solved. A prerequisite for obtaining a satisfactory shoe upper is that the same properly conform to the last on which formed without wrinkles and unduly thick bulges at certain parts, good appearance and comfort being highly important.

The present invention employs the shrinking and thermoplastic properties of fabrics knitted from synthetic yarns, of which a staple fiber spun from a copolymer of acrylonitrile and vinyl chloride, or a fiber of a thermoplastic copolymer of vinyl chloride and vinyl acetate, are examples that are spun into suitable yarns. The yarns produced from these copolymers have many inherent properties, of which imperviousness to water, high strength wet or dry, non-toxic effect on the skin, resistance to mildew and perspiration, non-inflammability, high resilience, and dyeability, render fabrics made of these yarns admirably suited for use as shoe uppers. For the purposes of this invention, the most important property of yarns, as above, and the fabrics made therefrom, is that, from an initially soft pliable state, by the application of heat, the fabrics can be shrunk as much as 50% and, in the process are hardened to a tough yet resilient condition that is form-retaining. Consequently, when such fabrics are shrunk over a last, the resultant uppers are form-retaining and yet are elastic and will change their form only under heat greater than the thermo-setting heat initially used.

In one prior attempt, of which we are aware and which failed and did not successfully reach the market, synthetic resin fabric, comparable to the above, was used as a skeleton or vehicle for chenille yarn that formed the main body of the fabric. Since chenille yarns do not have the shrinking properties of the synthetic yarns, the former bunched up at the vamp and in other places formed thickened and wrinkled portions that were not desired.

It is, therefore, an object of the present invention to provide a novel shoe-producing method that results in a knitted synthetic shoe upper that

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is of uniform thickness and free of wrinkles and bulgy portions.

Another object of the invention is to provide novel method steps for finishing off the upper edge of the upper to enable use of the same without lining or the like.

The foregoing and other objects, features and advantages of the invention will become more clearly evident from the following detailed description of the present novel method, the same having basis on the accompanying drawings, in which:

Fig. 1 shows in section an initially formed upper applied to a last preparatory to shrinking said upper.

Fig. 2 is a similar view showing another form of upper.

Fig. 3 shows still another form of upper on a last in a heating environment.

Figs. 4 and 5 are enlarged fragmentary sectional views showing two ways of finishing off the upper edge of uppers as made from the forms shown in Figs. 1 and 2.

Figs. 6 and 7 are similar views showing two ways of finishing off the upper edge of uppers as in Fig. 3.

Fig. 8 is a side elevational view, partly in section, of a shoe having an upper as formed by the present method.

According to the invention, the shoe upper is initially knitted in the form of a soft and pliable sock 10 from yarn spun from synthetic fibers of the type defined hereinabove, such fibers and yarn being hereinafter designated synthetic resin. The sock thus knitted has a foot-engaging upper portion 11 and a substantially complete bottom or sole portion 12. As shown in Figs. 1 and 2, an upper extension portion 13 is formed on the sock.

The soft sock 10 can be fabricated in various ways and by various means. It may be knitted on a sock-knitting machine in the conventional manner for such items. In such case, the toe portion 14 of a conventionally knitted sock has demarking lines which result from the changes in direction of the wales or courses of the knit. While such a sock may be employed, it is preferred, however, in most instances, to eliminate these lines by leaving a small opening in the sock where such lines may ordinarily be. Such an opening 15 is shown in the form of Fig. 1. This, however, is to be considered as a substantially whole bottom or sole.

It will be realized that the sock may be otherwise produced, whether initially seamless or not, as by knitting the same on flat or circular knitting machines or by hand, or crocheting or weav-

ing the same. In any case, the result sought is a generally conventional soft sock form that has a substantially whole bottom or sole.

The sock thus produced is made considerably larger in size than the size to which the same is to be shrunk, but is not necessarily made in the full range of sizes in which shoes are made. At present, it is contemplated that four basic sock sizes will provide uppers which are usable over the complete range of stock shoe sizes. The last 16 over which the sock 10 is shrunk controls the size of the upper that is produced.

The considerably larger sock is pulled over last 16. However, before this is done, an insole 17 is positioned against the bottom of the last substantially as shown. The sock is then adjusted and centered on the last and the extension portion 13 is pulled, with reasonable tautness, to make the sock conform to the contours of the last. The excess of material above the last is bunched and tied in the manner suggested in the drawing. The opening 15 may be spanned by synthetic threads or bunched or gathered in the manner of portion 13.

The lasted sock is then subjected to a shrinking step which is suggested in Fig. 3 wherein a closed receptacle 18 encloses the sock and retains the same for a period of time in an atmosphere of heat. A steam inlet 19 supplies dry or wet steam, as desired, to the receptacle and the heat thereof is effective to shrink the sock tightly around the last, the fibers hardening in the process from their initial soft condition to a hard yet elastic condition. Other heating methods may be used, the same being chemical reaction, open flame, hot or boiling water, etc. In any case, the intent is to activate the synthetic fibers to cause them to retract or relax and, thereby, draw the knitted fabric upper tightly around the form of the last. The time of the heating step may vary according to proportion of the initial size of the sock and the shrunk size and according to the medium employed to effect shrinking. A minute or so is sufficient when steam is used and the shrinking is moderate. Longer time is used where greater shrinking is involved. By employing a heat medium that is of higher temperature, as between 212° and 250° F., the fibers set and retain the set form unless subjected to higher temperatures. The latter is unlikely, of course, under normal conditions.

The degree of shrink in any direction may be controlled as desired by knitting a sock in which the yarns have various weights and denier count in different directions. By varying said count for threads extending in one direction, the degree of shrinkage of such threads may be varied with respect to the shrinkage of other threads having a different denier.

The heating medium may be provided from within the last if the same is suitably perforated, the inlet therefor being applied through opening 15. Thus, shrinkage can be effected from the inside of the sock or from the outside thereof, as desired.

After a few minutes—five or ten—or when the lasted sock is cool enough to handle, the extension portion 13 is removed. As shown in Fig. 1, the last 16 may be provided with a guide groove 20 along which a cutter effects severance of portion 13 from the ultimate upper 11. If desired, the last may terminate along the line of groove 20, in which case, the top of the last will serve to guide a severing cutter.

The upper thus provided may then be relasted

or left on last 16 and the heel and sole 41 is applied in the usual manner by pasting, cementing, or nailing, as the case may be.

The shoe is now complete except for providing a finish for the contour edge of the upper. As shown in Fig. 4, said edge may be seared with a heated tool to fuse the fibers of the yarn along the severance line to coagulate the same and form a finishing bead 21. This may be done before or after removal of the shoe from the last. Fig. 5 shows another edge-finishing method, the same entailing the application of a binding 22 by stitching, cementing or pasting the same in place. Since binding-applying machines are available, the latter edge-finishing step can be effectively accomplished.

As shown in Fig. 2, if open-toed uppers are desired, the sock is knitted with an open extension 23 at the toe, similar to but smaller than extension 13. In other respects, the shoe is processed as above described except that said extension 23 is severed from the upper as guided by a groove 24 provided in the last. The edge thus formed at the upper toe is bound as suggested in Figs. 4 and 5.

Another way of achieving a finished edge along the upper edge of the upper is shown in Figs. 3, 6 and 7. In this case the sock extension 13 may be materially reduced in length with the result that considerable material is conserved. As shown, the extension 25 is relatively short, being only long enough to enable folding the upper around a tightly applied binding cord or tape 26. This is expedited by providing the last 16 with a downwardly facing shoulder 27 as in Fig. 6 or with a groove 28 as in Fig. 7, said shoulder or groove, as the case may be, retaining the cord along a desired top line. Now, the slack and soft material of the sock may be tucked in behind the cord to form a double fold 29 that spaces the cord from the last substantially as shown. The body of the sock, being much larger than last 16, is loosely draped thereover as shown in Fig. 3. Of course, the size of the sock, relative to the size of the last, is such that the initially slack sock body will shrink tightly over the last, and the size of the opening in upper 11 such that the same is conformed to groove 28 by cord 26. If desired, tacks 30 or other suitable temporary means may be employed to center and align the loose sock on the last. The lasted sock is shrunk onto the last as hereinbefore set forth.

The sock shrinks to the line of the top line as defined by cord 26 and after the last is removed, it is only a matter of trimming away the extension 25, as along a line 31, to leave the upper with a properly finished top line. In Fig. 6, it will be seen that the finishing bead thus formed does not encroach on the shoe opening. While the bead of Fig. 7 does, the encroachment can be kept small by reducing the thickness of the cord.

From the method above disclosed, it will be seen that the shoe provided has an upper 11 and a substantially complete bottom 12, which are integrally formed of a knitted fabric. It will be evident that such a shoe will be form-retaining and, thus, will resist deforming. The thermo-set fabric is stable under all normal conditions, imparting to the shoe strength desirable in such items. The various knitting methods enable incorporation of beauty-enhancing designs in the fabric at no additional cost, a great latitude of employment of open work, etc., being available to the designer.

Although the present invention has been described with respect to certain preferred methods, and steps thereof, it will be realized that variations may be practiced without departing from the spirit and scope of the invention. Accordingly, we desire to reserve to ourselves such modifications that may fall within the scope of the appended claims.

Having thus described the invention, what we claim and desire to be secured by Letters Patent is:

1. The method of making a shoe upper which consists in providing a knitted sock that has a substantially complete bottom and an upper integral therewith, said bottom and upper being formed of pliable and soft synthetic thermo-setting resin yarn that has the property of shrinking when subjected to heat, mounting the sock on a last that is substantially smaller than the initial size of the body of the sock upper and bottom, confining the upper portion of said upper along a line around the upper portion of the last in a manner to leave the portion of the sock upper below said line and the sock bottom in slack condition, applying heat to the sock to cause the slack portions of the same to shrink tightly onto the last below said line of confinement to change the sock from its initial soft and pliable larger condition to a smaller but stiffer pliable and

form-retaining condition, and then removing that portion of the sock upper that is above the line of confinement.

2. The method according to claim 1, in which the sock upper, along its line of confinement, is folded on itself during its application to the last.

3. The method according to claim 1, in which the line along which the sock upper is confined around the last is coincident with a circumscribing shoulder provided in the last.

DAVID V. WHITING.
JOHN S. RUNYAN.

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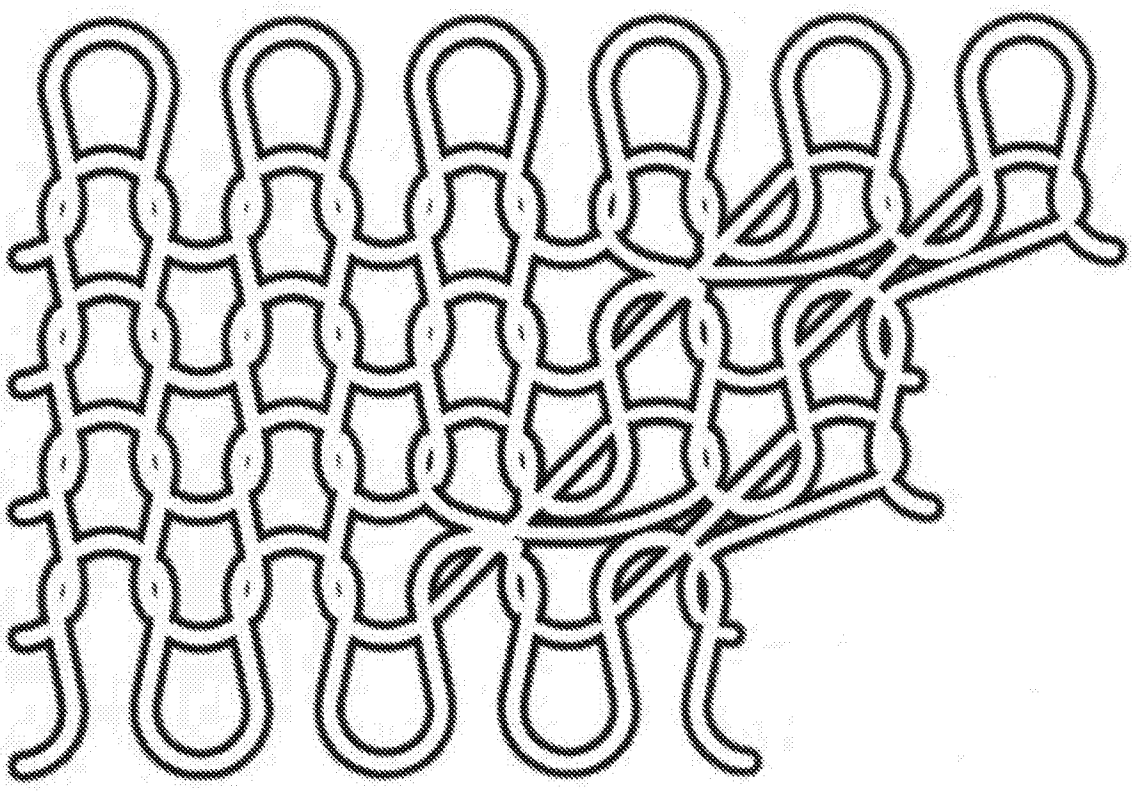
FOREIGN PATENTS

Number	Country	Date
12,786	Great Britain	Nov. 26, 1908

Knitting technology

a comprehensive handbook and practical guide

Third edition



David J Spencer

WOODHEAD PUBLISHING LIMITED

Petitioner adidas AG - Exhibit 1012 - Page 1

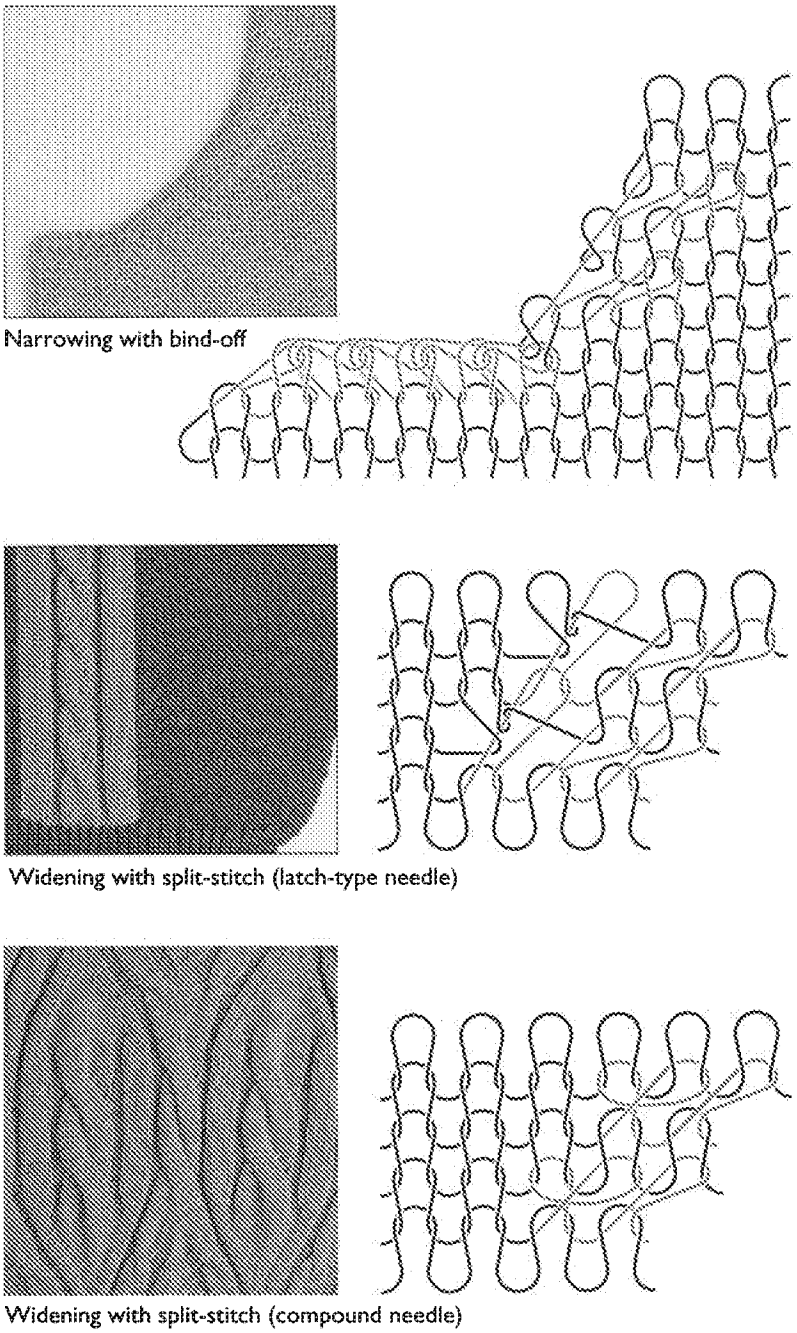


Fig. 16.10 Modern integral garment technology assures precisely-formed loops which are crucial to the production of shaped garments [Shima Seiki].

Trials@uspto.gov
571-272-7822

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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adidas AG
Petitioner

v.

Patent of NIKE INC.
Patent Owner

Case IPR 2013-00067
Patent 7,347,011

Before AMY KATTULA, *Trial Paralegal*

NOTICE OF FILING DATE ACCORDED TO PETITION
AND
TIME FOR FILING PATENT OWNER PRELIMINARY RESPONSE

The petition for *inter partes* review in the above proceeding has been accorded the filing date of November 28, 2012.

A review of the petition identified the following defect(s):

> Improper usages of claim charts: The rules require that a petition identify how the challenged claims are to be construed

> and how the claims are unpatentable under the statutory grounds raised. This information is to be provided pursuant to the page limit requirements, which require double spacing. Additionally, the rules require that the petition specify where each element of a challenged claim is to be found in the prior art. The element by element showing may be provided in a claim chart, which is permitted to be written with single spacing. See 37 C.F.R 42.6(a)(2)(iii). Placing one's argument and claim construction in a claim chart to circumvent the double spacing requirement is not permitted.

Petitioner must correct the defect(s) within **FIVE BUSINESS DAYS** from this notice. Failure to correct the defect(s) may result in an order to show cause as to why the Board should institute the trial. No substantive changes (e.g., new grounds) may be made to the petition.

Patent Owner may file a preliminary response to the petition no later than three months from the date of this notice. The preliminary response is limited to setting forth the reasons why the requested review should not be instituted. Patent Owner may also file an election to waive the preliminary response to expedite the proceeding. For more information, please consult the Office Patent Trial Practice Guide, 77 Fed. Reg. 48756 (Aug. 14, 2012), which is available on the Board Web site at http://www.uspto.gov/PTAB.

Patent Owner is advised of the requirement to submit mandatory notice information under 37 C.F.R. § 42.8(a)(2) within 21 days of service of the petition.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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adidas AG
Petitioner

v.

Nike, Inc.
Patent Owner

Patent No. 7,347,011
Filing Date: March 3, 2004
Issue Date: March 25, 2008
Title: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

Inter Partes Review No. 2013-00067

REVISED PETITION FOR *INTER PARTES* REVIEW UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100 *ET SEQ.*

Skechers EX1013-p. 5637
Skechers v Nike

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EXHIBITS

Exhibit 1001: Declaration of Edward C. (Ned) Frederick, Ph.D. ("Frederick Dec.")

Exhibit 1002: U.S. Patent No. 7,347,011 to Dua et al. ("'011 patent")

Exhibit 1003: The '011 patent file history

Exhibit 1004: Form PTO-SB/42

Exhibit 1005: U.S. Patent No. 5,345,638 to Nishida ("Nishida")

Exhibit 1006: JP Pub. No. H6-113905 to Osamu ("Osamu"), including a certified English translation thereof

Exhibit 1007: U.S. Patent No. 2,147,197 to Glidden ("Glidden")

Exhibit 1008: U.S. Patent No. 2,314,098 to McDonald ("McDonald")

Exhibit 1009: U.S. Patent No. 2,641,004 to Whiting et al. ("Whiting")

Exhibit 1010: International App. Pub. No. WO 90/03744 to Curley ("Curley")

Exhibit 1011: U.S. Patent No. 4,785,558 to Shiomura ("Shiomura")

Exhibit 1012: David J. Spencer, Knitting Technology: A Comprehensive Handbook and Practical Guide (Third ed., Woodhead Publishing Ltd. 2001)

Exhibit 1013: Excerpt of Hannelore Eberle et al., Clothing Technology (Third English ed., Beuth-Verlag GmbH 2002)

Through counsel, real party in interest adidas AG ("Petitioner") hereby petitions for *inter partes* review under 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42 of claims 1-46 of U.S. Patent No. 7,347,011 ("the '011 patent"), and asserts there is a reasonable likelihood that it will prevail with respect to at least one of the claims challenged in this petition. The Office mailed a Notice of Filing Date Accorded to Petition on December 4, 2012 that identified a defect in the Petition and required correction within five (5) business days. Petitioner has revised the Petition responsive to the notice and the December 5, 2012 conference with Judge Tierney, and Petitioner hereby submits this revised, timely petition in response.

I. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1)

A. Real Party-In-Interest under 37 C.F.R. § 42.8(b)(1)

Petitioner, adidas AG, is the real party-in-interest for the instant petition.

B. Related Matters under 37 C.F.R. § 42.8(b)(2)

No related matters are currently known to Petitioner.

C. Lead and Back-Up Counsel under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

LEAD COUNSEL	BACK-UP COUNSEL
Geoffrey K. Gavin (Reg. No. 47,591) (ggavin@kilpatricktownsend.com) Kilpatrick Townsend & Stockton LLP 1100 Peachtree Street, Suite 2800 Atlanta, GA 30309-4528 T: 404 815 6046; F: 404 541 3213	Vaibhav P. Kadaba (Reg. No. 45,865) (wkadaba@kilpatricktownsend.com) Kilpatrick Townsend & Stockton LLP 1100 Peachtree Street, Suite 2800 Atlanta, GA 30309-4528 T: 404 532 6959; F: 404 541 3258

D. Service Information

As identified in the attached Certificate of Service, a copy of the present petition, in

its entirety, is being served to the address of the attorney or agent of record. adidas AG may be served at the lead counsel address provided in Section I(C) of this Petition.

E. Power of Attorney

A power of attorney is being filed with the designation of counsel in accordance with 37 C.F.R. § 42.10(b).

II. PAYMENT OF FEES – 37 C.F.R. § 42.103

This petition for *inter partes* review requests review of 46 claims of the '011 patent and is accompanied by a payment of $42,800, which includes $27,200 for 20 claims and an additional $15,600 for 26 claims in excess of 20 claims. *See* 37 C.F.R. § 42.15. Thus, this petition meets the fee requirements under 35 U.S.C. § 312(a)(1).

III. REQUIREMENTS FOR INTER PARTES REVIEW UNDER 37 C.F.R. § 42.104

A. Grounds For Standing under 37 C.F.R. § 42.104(a)

Petitioner certifies that the '011 patent is eligible for *inter partes* review and further certifies that Petitioner is not barred or otherwise estopped from requesting *inter partes* review challenging the identified claims on the grounds identified within the present petition.

B. Identification of Challenge under 37 C.F.R. § 42.104(b) and Relief Requested

Petitioner requests *inter partes* review of claims 1-46 of the '011 patent on the grounds set forth in the table below and requests that each of the claims be found unpatentable. An explanation of how claims 1-46 are unpatentable under the statutory grounds identified below, including the identification of where each element is found in the

prior art patents or publications and the relevance of the prior art reference, is provided in the form of detailed claim charts. Additional explanation and support for each ground of rejection is set forth in the Declaration of Edward C. (Ned) Frederick, Ph.D. (Ex. 1001).

Ground	'011 Patent Claims	Basis for Rejection
Ground 1	1-16; 19-34; 36; 39-46	Anticipated under § 102(b) by Nishida
Ground 2	1-16; 19-46	Obvious under § 103(a) in view of Nishida
Ground 3	1-7; 10-12; 14; 16-20; 32-33; 37	Obvious under § 103(a) by Nishida in view of McDonald
Ground 4	8-9; 13; 21-23	Obvious under § 103(a) by Nishida in view of McDonald and Curley
Ground 5	8-9; 13; 21-23	Obvious under § 103(a) by Nishida in view of McDonald and Shiomura
Ground 6	9; 13; 22-23	Obvious under § 103(a) by Nishida in view of McDonald and Glidden
Ground 7	1-7; 10-12; 14-16; 19-20; 32-33; 44-46	Obvious under § 103(a) by Nishida in view of Whiting
Ground 8	8-9; 13; 21-23	Obvious under § 103(a) by Nishida in view of Whiting and Curley
Ground 9	8-9; 13; 21-23	Obvious under § 103(a) by Nishida in view of Whiting and Shiomura
Ground 10	9; 13; 17-18; 22-23	Obvious under § 103(a) by Nishida in view of Whiting and Glidden
Ground 11	17-18	Obvious under § 103(a) by Nishida in view of Whiting and McDonald
Ground 12	1-13; 16; 19-23; 30-32; 34; 43-46	Obvious under § 103(a) by Nishida in view of Curley
Ground 13	8-9; 13; 21-23; 30-31; 34-35; 38; 43	Obvious under § 103(a) by Nishida in view of Shiomura
Ground 14	9; 13; 22-23; 30-31; 43	Obvious under § 103(a) by Nishida in view of Glidden
Ground 15	1-2; 7-14; 16-23	Anticipated under § 102(b) by Glidden
Ground 16	1-2; 7-14; 16-23	Obvious under § 103(a) by Glidden in view of McDonald
Ground 17	1-2; 7-14; 16-23	Obvious under § 103(a) by Glidden in view of Whiting
Ground 18	1-16; 19-46	Obvious under § 103(a) in view of Osamu

Ground	'011 Patent Claims	Basis for Rejection
Ground 19	1-7; 9-10; 13-14; 16-20; 22-33; 36-37; 39-43	Obvious under § 103(a) by Osamu in view of McDonald
Ground 20	8; 21; 34	Obvious under § 103(a) by Osamu in view of McDonald and Curley
Ground 21	8; 21; 34-35; 38	Obvious under § 103(a) by Osamu in view of McDonald and Shiomura
Ground 22	11-12	Obvious under § 103(a) by Osamu in view of McDonald and Glidden
Ground 23	11-12; 34	Obvious under § 103(a) by Osamu in view of McDonald and Nishida
Ground 24	1-7; 9-10; 13-16; 19-20; 22-33; 36; 39-44; 46	Obvious under § 103(a) by Osamu in view of Whiting
Ground 25	8; 21; 34	Obvious under § 103(a) by Osamu in view of Whiting and Curley
Ground 26	8; 21; 34-35; 38	Obvious under § 103(a) by Osamu in view of Whiting and Shiomura
Ground 27	11-12; 17-18; 45	Obvious under § 103(a) by Osamu in view of Whiting and Glidden
Ground 28	11-12; 34; 45	Obvious under § 103(a) by Osamu in view of Whiting and Nishida
Ground 29	1-7; 9-13; 16; 19-20; 22-32; 34; 36; 39-46	Obvious under § 103(a) by Osamu in view of Nishida
Ground 30	8; 21	Obvious under § 103(a) by Osamu in view of Nishida and Curley
Ground 31	8; 21; 35; 38	Obvious under § 103(a) by Osamu in view of Nishida and Shiomura
Ground 32	17-18	Obvious under § 103(a) by Osamu in view of Nishida and Glidden
Ground 33	14; 17-18; 33; 37	Obvious under § 103(a) by Osamu in view of Nishida and McDonald
Ground 34	14; 15; 33	Obvious under § 103(a) by Osamu in view of Nishida and Whiting
Ground 35	1-7; 9-13; 16-20; 22-32; 36; 39-43	Obvious under § 103(a) by Osamu in view of Glidden
Ground 36	8; 21; 34	Obvious under § 103(a) by Osamu in view of Glidden and Curley
Ground 37	8; 21; 34-35; 38	Obvious under § 103(a) by Osamu in view of Glidden and Shiomura

Ground	'011 Patent Claims	Basis for Rejection
Ground 38	1-10; 13; 16; 19-32; 34; 36; 39-44; 46	Obvious under § 103(a) by Osamu in view of Curley
Ground 39	35; 38	Obvious under § 103(a) by Osamu in view of Curley and Shiomura

Each of the references relied upon in the grounds set forth above qualify as prior art under 35 U.S.C. § 102(b). Specifically, Nishida issued on September 13, 1994, and therefore qualifies as prior art under 35 U.S.C. § 102(b). Osamu published on April 26, 1994, and therefore qualifies as prior art under 35 U.S.C. § 102(b). Glidden issued on February 14, 1939, and therefore qualifies as prior art under 35 U.S.C. § 102(b). McDonald issued on March 16, 1943, and therefore qualifies as prior art under 35 U.S.C. § 102(b). Whiting issued on June 9, 1953, and therefore qualifies as prior art under 35 U.S.C. § 102(b). Curley published on April 19, 1990, and therefore qualifies as prior art under 35 U.S.C. § 102(b). Shiomura issued on November 22, 1988, and therefore qualifies as prior art under 35 U.S.C. § 102(b).

IV. SUMMARY OF THE '011 PATENT

A. Brief Description

The '011 patent relates to an article of footwear having a textile upper. ('011 patent (Ex. 1002), 1:5-10). The '011 patent specifically teaches that the upper incorporates a textile element, which may be formed with a knitting machine. (*Id.*, 3:20-22).

B. Summary of the Prosecution History of the '011 Patent

The original patent application, No. 10/791,289 ("the '289 application"), attached hereto as a part of Exhibit 1003, was filed on March 3, 2004, with claims 1-67. Original

independent claims 1, 20, 28, 41, and 65 were directed to articles of footwear having an upper incorporating a textile element, and original independent claims 50 and 58 were directed to methods of manufacturing a footwear element. The PTO issued a restriction requirement requiring election of either the claims drawn to an article of footwear or the claims drawn to a method of knitting a footwear element. ('011 file history (Ex. 1003), 01/05/2006 Office Action, p. 2).

In response, applicants filed a reply to the restriction requirement, electing to prosecute claims directed to an article of footwear, claims 1-49 and 65-67. ('011 file history (Ex. 1003), 01/19/2006 Response, p. 1). The PTO then issued a first Office Action on the merits, rejecting all pending claims. ('011 file history (Ex. 1003), 09/12/2006 Office Action, pp. 2-4). Specifically, the Examiner rejected claims 1-11, 13, 14, 16-24, 26-35, 37-49, 65, and 67 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 1,888,172 to Joha ("Joha"). (*Id.*, pp. 2-3.) Several of the independent claims, in addition to claiming structural elements of the footwear article, claimed the knitting method by which it was formed (*e.g.*, "formed by weft knitting"). The Examiner noted that in reference to the specific method by which the upper is knitted, "such phrases have been treated as product by process limitations...[and] does NOT serve to resolve the issue concerning patentability of the product." (*Id.*, p. 2). The Examiner further noted "that the numerous types of knitting are well-known in the art and are noted in some of the cited references." (*Id.*, pp. 2-3).

The Examiner also rejected claims 1, 2, 7-11, 13-24, 26, 27, 41-43, 47-49, and 65-67 under 35 U.S.C. § 102(b) as being clearly anticipated by U.S. Patent No. 6,308,438 to Throneburg ("Throneburg"). (*Id.*, p. 3). The Examiner reiterated the statements regarding product by process limitations and the known types of knitting. (*Id.*).

The Examiner further rejected claims 12, 25, and 36 under 35 U.S.C. § 103 as being unpatentable over Joha in view of U.S. Patent No. 5,746,013 to Fay, Sr. ("Fay"). (*Id.*, p. 4). The Examiner rejected claims 12 and 25 under 35 U.S.C. § 103 as being unpatentable over Throneburg in view of Fay. (*Id.*).

In response to the Office Action, the Applicants submitted an amendment and response, along with a petition for a one month extension of time. ('011 file history (Ex. 1003), 01/12/2007 Response). In the response, Applicants cancelled original claims 7-10, 30, 47, and 50-64, and amended original claims 1, 2, 11-13, 18-20, 23-25, 27, 28, 31-33, 35, 43, 48, 49, and 65 to distinguish over the prior art of record. (*Id.*, pp. 3-8).

In particular, with respect to the rejections of claims 1, 28, and 41, Applicants amended the claims limiting the claimed footwear article to a single type of textile having a plurality of knit constructions, and further argued that neither Joha nor Throneburg disclose an upper incorporating a single type of textile having a plurality of constructions. (*Id.*, pp. 9-10). With respect to amended claim 20, Applicants argued that neither Joha nor Throneburg teaches a weft-knitted textile element having first and second areas each having a different stitch configuration to impart varying properties to each area of the textile

element. (*Id.*, p. 10). Applicants made similar arguments with respect to the claim rejections under 35 U.S.C. § 103. (*Id.*, p. 11-12). Applicants, however, did not challenge or otherwise address the Examiner's comments regarding the unpatentability of claiming a specific method by which an upper is knitted, particularly since numerous types of knitting were well-known in the art.

With respect to the rejection of amended claim 65 based on Joha, Applicants argued that Joha did not disclose a first area having a first set of properties and a second area having a second set of properties different from the first set. (*Id.*, p. 10). With respect to the rejection of amended claim 65 based on Throneburg, Applicants argued that Throneburg did not disclose an upper having two different areas with each area having a different construction. (*Id.*).

The Examiner then allowed claims 1-6, 11-29, 31-46, 48, 49, and 65-67 (renumbered as claims 1-46). ('011 file history (Ex. 1003), 11/02/2007 Notice of Allowance). The Examiner responded to the Applicants' amendment and response by moving directly from a rejection of the pending claims under 35 U.S.C. § 102 to allowance.[1] Because the missing elements addressed in the Applicants' response are taught by several of the references of record (*see* Nishida (Ex. 1005), Glidden (Ex. 1007)), it appears that the Examiner may not

[1]The Examiner had rejected dependent claims 12, 25, and 36 under 35 U.S.C. § 103, but Applicants reiterated the arguments made with respect to the independent claims as amended to overcome this rejection.

have reconsidered the question of anticipation by other references of record or obviousness under 35 U.S.C. § 103 before deciding to allow the claims.

Applicants transmitted the issue fee payment on February 1, 2008, and the '011 patent issued on March 25, 2008. ('011 file history (Ex. 1003), 02/01/2008 Issue Fee Payment).

Applicants later filed a request for a Certificate of Correction, alleging a PTO mistake in the printing of claims 2, 8, and 23. ('011 file history (Ex. 1003), 01/13/2009 Request for Certificate of Correction). A Certificate of Correction issued February 17, 2009. ('011 file history (Ex. 1003), 02/17/2009 Certificate of Correction).

V. CLAIM CONSTRUCTIONS UNDER 37 C.F.R. § 42.104(b)(3)

A. Legal Overview

A claim subject to *inter partes* review ("IPR") is given its "broadest reasonable construction in light of the specification of the patent in which it appears." 37 C.F.R. § 42.100(b). This means that the words of the claim are given their plain meaning unless that meaning is inconsistent with the specification. *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989). This Petition shows that the claims of the '011 patent are anticipated or rendered obvious by the prior art identified herein when the challenged claims are given their broadest reasonable interpretation in light of the specification. Petitioner submits, for the purposes of the IPR only, that the claim terms are presumed to take on their broadest

reasonable interpretation in view of the specification of the '011 patent.[2]

B. Clarification of "A Single Type of Textile"

Claims 1, 24, and 36 recite that the textile element incorporates "a single type of textile." The '011 patent specification states that "textile element 40 is primarily formed from one or more yarns that are mechanically-manipulated through either an interweaving, intertwining and twisting, or interlooping process." ('011 patent (Ex. 1002), 6:51-54). The '011 patent specification further states: "Textile element 40 is a single material element that is formed to exhibit a unitary (i.e., one-piece) construction." (*Id.*, 5:38-39; *see also* 11:10-12). As such, a broadest reasonable interpretation of "a single type of textile" is a single material element that may include one or more yarns.

C. Clarification of "Weft-Knitted Textile Element" and "Flat-Knitted Textile Element"

Claims 1, 7-9, 14-16, 19-21, 23, 32, and 33 recite that the textile element is "weft-knitted" or has a "weft knitted" construction. Claim 44 states that the textile element is "flat-knitted." In the Office Action dated September 12, 2006, during prosecution of the

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[2]Other forums, such as U.S. district courts, require different standards of proof and claim interpretation that are not applied by the PTO for *inter partes* review. Accordingly, any interpretation or construction of the challenged claims in this IPR, either implicitly or explicitly, is not binding on Petitioner in any future litigation related to the '011 patent. *See In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).

application that led to the '011 patent, the Examiner noted that numerous types of knitting recited in the claims (*e.g.*, weft-knitted and flat-knitted) were well-known in the art. Thus, the Examiner did not deem particular claimed knitting techniques to distinguish the claimed invention from the prior art. The specification also explains that various knitting processes may be used to manufacture the textile element, including without limitation weft-knitting, warp-knitting, circular knitting, and flat knitting. (*See* '011 patent (Ex. 1002), 6:66-7:10; 11:4-7; 11:19-41). The specification describes tricot, raschel, and double needle-bar raschel as specific sub-types of warp knitting. (*Id.*, 7:2-5). Similarly, circular knitting and flat knitting are described as sub-types of weft knitting. (*Id.*, 7:-10). The specification states that the textile element that forms the shoe upper may be formed through any of these knitting processes and does not express a preference or advantage for any one process over the others. (*Id.*, 7:11-14). Thus, it is reasonable to interpret these claim limitations as consistent with their ordinary meaning and as conventional, known knitting techniques.

D. Clarification of "Unitary Construction"

Claim 16 recites that the textile element has a first area and a second area with a "unitary construction." Claim 44 originally recited the same language. The specification states: "As defined for purposes of the present invention, unitary construction is intended to express a configuration wherein portions of a textile element are not joined together by seams or other connections, as depicted with textile element 40 in FIG. 8." ('011 patent (Ex. 1002), 6:41-46).

The Applicants later amended claim 44 to recite that the textile element has a first area with a first "unitary construction" and a second area with a second "unitary construction" different from the first "unitary construction." ('011 file history (Ex. 1003), 01/12/2007 Response, p. 8). In making this amendment, Applicants attempted to overcome a prior art rejection based on Throneburg and stated in the remarks that "[a]lthough Throneburg teaches that the ball portion and heel portion of the footbed are 'thickened,' ***the construction of that knitting is not of a different construction than other areas of the upper.***" (*Id.*, p. 10, emphasis added).

Thus, according to the specification and claim 16, a broadest reasonable interpretation of "unitary construction" is a one-piece construction. The amendments to claim 44 and related arguments focused on the differences between the two different constructions, rather than the existence of two different ***unitary*** constructions, as different ***unitary*** constructions is inconsistent with the invention as described in the specification and claim 16. Based on the intrinsic evidence, a broadest reasonable interpretation of a "first area with a first unitary construction and a second area with a second unitary construction different from the first unitary construction," consistent with the teachings of the specification and arguments made during prosecution, is a unitary construction with two areas, each area having a different construction and set of properties in accordance with the additional language of claim 44.

VI. THERE IS A REASONABLE LIKELIHOOD THAT AT LEAST ONE CLAIM OF THE '011 PATENT IS UNPATENTABLE

As detailed in the claim charts below, through the various identified prior art references or arguments some of which were not before the Examiner during prosecution of the '011 patent and none of which were expressly considered by the Examiner, all limitations of claims 1-46 of the '011 patent were well-known in the prior art. Regarding various combinations of prior art, the '011 patent claims merely recite the combination of "prior art elements according to known methods to yield predictable results" and/or the "[u]se of known technique[s] to improve similar devices (methods, or products) in the same way." MPEP § 2143 (A, C).

As a preliminary matter, during the prosecution of the '011 patent, the Examiner pointed out – and the Applicant failed to argue otherwise – that certain recited features common to of all of the claims were well-known. For example, the prior art establishes that an upper incorporating a textile element, as well as knitted uppers generally, were well-known. The prior art also teaches that securing a sole structure to the upper was well-known. Likewise, as stated by the Examiner, numerous types of knitting (e.g., weft-knitted, flat-knitted, warp-knitted, or formed with a knitting machine) were well-known in the art. ('011 file history (Ex. 1003), at 09/12/2006 Office Action, pp. 2-3). Applicants did not challenge this assertion.

In addition, during the prosecution of the '011 patent, the Examiner pointed out – and the Applicant failed to argue otherwise – that other recited features of independent claims 1,

24, and 36 were well-known. For example, it was well-known that textile elements have edges joined together to define at least a portion of a void for receiving a foot (claims 1, 24), as was the idea of joining the edges together to form seams, the seams including a first seam and a second seam, the first seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper, and the second seam extending vertically in the heel area (claim 24). Removing the textile element from a textile structure that includes an outline of the textile element was also a well-known technique. (claim 36).

A. "A Single Type of Textile Having a Plurality of Knit Constructions" in Claims 1-15 and 24-43

As discussed above, the Applicants amended independent claims 1, 24, and 36 to require that the textile element incorporate "a single type of textile having a plurality of knit constructions." ('011 file history (Ex. 1003), at 01/12/2007 Response, pp. 2, 5, and 7). The Applicants further relied on this element as the sole basis for distinguishing claims 1, 24, and 36 over the prior art of record. ('011 file history (Ex. 1003), at 01/12/2007 Response, pp. 9-12). Because the next action from the PTO was a Notice of Allowance, it appears that the Examiner relied on this ground as the reason for allowance of claims 1, 24, and 36.

Yet, several prior art references, which either were not before the Examiner or were not applied by the Examiner for this feature during prosecution, teach textile elements incorporating a single type of textile having a plurality of knit constructions as required by claims 1, 24, and 36. For example, Nishida (Ex. 1005) and Glidden (Ex. 1007) each disclose textile elements incorporating a single type of textile having a plurality of knit

constructions. (Frederick Dec. (Ex. 1001), ¶¶ 67-72, 79-84). Specifically, Nishida states:

> In FIGS. 1 and 2, a web of material is identified by 1, and is produced by a conventional textile process, [for] example, by weaving and/or knitting and/or embroidering. The web of material 1 can be provided with a single or with a plurality of layouts 2 of the shape of a shoe upper 3, as it is represented from the side, for example, in FIG. 3. The web of material has a backing 4 that can be a conventionally used material formed, for example, of a warp and filling or a knitted fabric. ***Layout 2 is divided into different individual parts or areas, which differ from one another, such as by being of another material style and/or by being of different fibers or yarns,*** for example, from wool, wool with metal yarns, silk, silk with metal yarns, wool with plastic fibers or the like and/or by being formed of different colors, such as from fibers or yarns of different colors, including those of metals, or by different color prints, ***and/or by being differently designed fiber extrudates or fiber extrudate compositions, such as twisted, processed parallel or the like.***

(Nishida (Ex. 1005), 3:6-26 (emphasis added)).

Glidden, which dates to 1939, describes:

> In fabricating the unitary upper, as by knitting, areas thereof which are normally subjected to greater wear and ***in which a lower degree of elasticity is desired, such as the toe 11 and the heel portion 12, may be more densely fabricated to provide therein heavier weight and less extensibility than in the other parts of the upper, as by changing the type of stitch or amount [of] thickness of the yarn in the knitting.*** Other areas, such as the ankle portion 13, are preferably made so as to provide softness and elasticity, as by making them of ribbed construction, as shown.

(Glidden (Ex. 1007), p. 1, 2:33-44 (emphasis added)).

At least a third prior art reference, Osamu (Ex. 1006), teaches this same concept for a woven textile element: "For each shoe location, the appropriate weave structure is used. For example, ***toe cap 10 is formed of a weave structure of high yarn count and density, and upper surface 11 is formed of a weave structure with high breathability***." (Osamu (Ex. 1006), [0009] (emphasis added)).

As demonstrated by the foregoing exemplary excerpts from selected references, the use of textile elements incorporating a single type of textile having a plurality of knit constructions was well-known in the art at the time of the priority date of the '011 patent. These references also show that the use of a single type of textile having a plurality of knit constructions was well-known as a way to provide different properties to a knitted textile for decades. (Frederick Dec. (Ex. 1001), ¶¶ 72, 84).

As set forth in the grounds and the claim charts below, Nishida, Glidden, and Osamu anticipate or, at the very least, render obvious claims 1-15 and 24-43 of the '011 patent, alone or in combination with other prior art. Specifically, grounds 1 and 15 set forth how these claims are anticipated by Nishida or Glidden, as further referenced in the charts below. Furthermore, the '011 patent claims merely recite the combination of prior art elements according to known methods to yield predictable results and/or the use of known technique[s] to improve similar devices (methods, or products) in the same way. *See KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 417-422 (2007).

For example, a person of ordinary skill in the art would have understood that using a single type of textile having a plurality of knit constructions was well-known in the textile industry. (Frederick Dec. (Ex. 1001), ¶¶ 37-65, 67-72, 79-84). This concept is clearly shown in the prior art. With regard to the other recited elements in claims 1, 24, and 36, it is undisputed the prior art discloses the combination of these features in uppers for an article of footwear.

Moreover, one of ordinary skill in the art would have understood and expected the benefits of using a single type of textile having a plurality of knit constructions for an upper – that is, that a single type of textile having a plurality of knit constructions would provide the advantages of different properties in the shoe upper, such as breathability and elasticity, while increasing the efficiency of the manufacturing process. ('011 patent (Ex. 1002), 2:62-3:16; 11:12-18). Specifically, each of Nishida, Glidden, McDonald, Whiting, and Shiomura teach the construction of and/or process for constructing a knitted shoe upper. These references explicitly show that since at least the late 1930's it was desirable and known to "provide comfort, stretchability, light weight, breathability and absorption properties in an article of footwear and to provide for economy of materials and convenience of procedure in the manufacture of the same." (Glidden (Ex. 1007), p. 1, 1:25-30). *See also:*

- "My invention is a shoe comprising a circular-knit fabric sock having a stretchable elastic welt..." (McDonald (Ex. 1008), p. 1, 1:1-2);
- "the production of such a shoe upper is nevertheless possible in an efficient

and economical way" (Nishida (Ex. 1005), 1:45-47); "designed to be relatively deformably soft or elastic....has a good air exchange capability" (*Id.*, 3:43-51);

- "[Objective] To develop uppers material for shoes indispensable to manufacturing methods that increase the economic efficiency of production by reducing the quantity of uppers materials for shoes as much as possible thus simplifying the stitching process" (Osamu (Ex. 1006), p. 1); "[f]or each shoe location, the appropriate weave structure is used... and upper structure 11 is formed of a weave structure with high breathability" (*Id.*, p. 4);
- "...the resultant uppers are form-retaining and yet are elastic..." (Whiting (Ex. 1009), 1:40-41).
- "An object of the present invention is to provide a shoe... of which the shoe upper has a combination of suitable elasticity with high air permeability." (Shiomura (Ex. 1011), 1:38-41).

The common teachings of these prior art references show that it would have been obvious for a person of ordinary skill in the art to combine their teachings in designing a knitted shoe upper to achieve the claimed features of the '011 patent. Thus, claims 1-15 and 24-43 of the '011 patent are not patentable in view of the above-noted references considered individually or in combination.

With respect to claims 1-15 and 24-43, the specific grounds of rejection are set forth

in Section III.B above, and the specific citations to the teachings of the cited art are in the chart below.

As stated in ground 1, Nishida anticipates all of claims 1-15 and 24-43, except for dependent claims 35, 37, and 38. With respect to claims 1, 14, 15, and 32-34, a person of ordinary skill in the art ("POSITA") at the time of the priority date of the '011 patent would have understood Nishida's teaching of "conventional" knitting processes to include weft knitting, including both circular and flat knitting, and warp knitting, which features are recited in claims 1, 14, 15, and 32-34. (*See* cites in chart; Frederick Dec. at ¶ 72). In addition, it would have in any event been obvious at the time of the priority date of the '011 patent to incorporate weft-knitted textile elements as disclosed by McDonald, Whiting, or Curley – including the circular-knitted elements of McDonald or Whiting or flat-knitted element of Whiting, or warp-knitted textile elements as disclosed by Curley or Shiomura – into Nishida's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 72).

With respect to Nishida and claim 8, a POSITA at the time of the priority date of the '011 patent would have understood Nishida's use of two or more layers to include three layers, and that the knit textile element and/or knitted backing layer of the textile element forms a portion of the interior layer. (*See* cites in chart; Frederick Dec. at ¶ 72). In addition, it would have been obvious at the time of the priority date of the '011 patent to incorporate three layers, wherein a knit textile element forms a portion of an inner layer and an outer

layer -- as disclosed by Curley or Shiomura – into Nishida's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 72).

With respect to Nishida and claims 9 and 30, a POSITA at the time of the priority date of the '011 patent would have understood that Nishida's knit textile element and/or knit backing layer may form at least a portion of the interior and exterior surfaces of the upper. (*See* cites in chart; Frederick Dec. at ¶ 72). In addition, it would have been obvious at the time of the priority date of the '011 patent to incorporate a knitted upper where the knitted material forms a portion of both interior and exterior surfaces of the upper – as disclosed by Curley, Shiomura, or Glidden – into Nishida's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 72).

With respect to Nishida and claims 13, 31 and 43, a POSITA at the time of the priority date of the '011 patent would have understood Nishida's knit textile element and/or knitted backing layer may form an interior surface of the upper, and one additional layer may form an exterior surface (required by claim 31 only). (*See* cites in chart; Frederick Dec. at ¶ 72). In addition, it would have been obvious at the time of the priority date of the '011 patent to incorporate a knit textile element that forms an interior surface of the upper, along with an additional layer forming an exterior surface – as disclosed by Curley, Shiomura, or Glidden -- into Nishida's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 72).

With respect to Nishida and claims 35, 37, and 38, Nishida discloses the use of

"conventional" knitting processes to form the textile element of the upper, and it would have been obvious to a POSITA at the time of the priority date of the '011 patent to use jacquard double needle-bar raschel knitting machines or wide-tube circular knitting machines, for reasons such as those identified in *KSR*, 550 U.S. at 417-422, which were also taught by Shiomura or McDonald. (*See* Frederick Dec. at ¶ 72).

As stated in ground 15, Glidden anticipates claims 1, 2, and 7-14. A POSITA at the time of the priority date of the '011 patent would have understood from Glidden that it describes circular knitting, which has been used for making socks for many decades. (*See* cites in chart; Frederick Dec. at ¶ 84). In addition, it would have in any event been obvious at the time of the priority date of the '011 patent to incorporate weft-knitted (circular) textile elements – as disclosed by McDonald or Whiting – into Glidden's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 84).

As stated in the grounds, Osamu alone or in combination with other art renders claims 1-15 and 24-43 obvious. For example, Osamu describes every element of independent claims 1, 24, and 36, except that Osamu discloses using a woven textile element rather than a weft-knitted or knitted textile element. A POSITA at the time of the priority date of the '011 patent would have understood that woven and knitted textiles are both suitable for use in uppers and the selection of one versus the other is an obvious design choice, as described by Nishida and Curley for example. (*See* Frederick Dec. at ¶ 91). In addition, it would have been obvious at the time of the priority date of the '011 patent

to incorporate a weft-knitted textile -- as disclosed by Nishida, Curley, Glidden, McDonald, or Whiting -- into Osamu's upper for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 91).

With respect to Osamu and dependent claims 14, 15, and 32-34, a POSITA at the time of the priority date of the '011 patent would have understood that the selection of circular knitting or flat knitting, each a sub-type of weft knitting, or warp knitting is an obvious design choice or a selection from among a finite number of knitting (weft or warp) techniques. (*See* Frederick Dec. at ¶ 91). In addition, it would have in any event been obvious at the time of the priority date of the '011 patent to incorporate the circular-knitted elements of McDonald or Whiting or flat-knitted element of Whiting, or warp-knitted textile elements as disclosed by Curley or Shiomura into Osamu's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 91). Similarly, for dependent claims 35, 37, and 38, a POSITA would have understood that the selection of jacquard double needle-bar raschel, a sub-type of warp knitting, machines or wide-tube circular knitting machines (such as those taught by Shiomura or McDonald) is an obvious design choice or a selection from among a finite number of warp knitting techniques. (*See* Frederick Dec. at ¶ 91).

With respect to Osamu and claim 8, a POSITA at the time of the priority date of the '011 patent would have understood Osamu's use of two or more layers to include three layers, and that the textile element forms a portion of the interior layer. (*See* cites in chart;

Frederick Dec. at ¶ 91). In addition, it would have been obvious at the time of the priority date of the '011 patent to incorporate three layers, wherein a knit textile element forms a portion of an inner layer and an outer layer -- as disclosed by Curley or Shiomura -- into Osamu's upper for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 91).

With respect to Osamu and claims 11 and 12, a POSITA at the time of the priority date of the '011 patent would have understood that such additional elements may be secured to a forefoot area and/or a heel area of the upper from Osamu's disclosure. (*See* cites in chart; Frederick Dec. at ¶ 91). In addition, it would have been obvious at the time of the priority date of the '011 patent to incorporate an additional element secured to a forefoot area and/or a heel area of the upper -- as disclosed by Nishida or Glidden -- into Osamu's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 91).

'011 Patent Claims	Description of Prior Art
1. An article of footwear comprising:	Grounds 1-3; 7; 12: **Nishida** discloses an article of footwear. Frederick Dec. at ¶ 72; Nishida at Abstract; FIG. 3. Grounds 15-17: **Glidden** discloses an article of footwear. Frederick Dec. at ¶ 84; Glidden at Title; p. 1, 1:1-4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses an article of footwear. Frederick Dec. at ¶ 91; Osamu at Title; [0001]; [0007].
an upper incorporating a weft-knitted textile element having edges that are joined together	Grounds 1-2: **Nishida** discloses an upper incorporating a knit textile element made by "conventional" knitting processes and having edges that are joined together to define at least a portion of a void for

'011 Patent Claims	Description of Prior Art
to define at least a portion of a void for receiving a foot,	receiving a foot. Frederick Dec. at ¶ 72; Nishida at 3:6-12; 3:31-42; FIGS. 2-3. Grounds 3; 7; 12: **Nishida + other art** Uppers incorporating weft-knitted textile elements were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-39; Whiting at 2:39-56; Curley at p. 7, line 32-p. 8, line 25. Ground 15: **Glidden** discloses an upper incorporating a knit textile element that defines at least a portion of a void for receiving a foot. Frederick Dec. at ¶ 84; Glidden at p. 1, 2:3-10, 2:45-48; FIGS. 1, 6, 8. Grounds 16-17: **Glidden + other art** Uppers incorporating weft-knitted textile elements were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-39; Whiting at 2:39-56. Ground 18: **Osamu** discloses an upper incorporating a textile element having edges that are joined together to define at least a portion of a void for receiving a foot. Frederick Dec. at ¶ 91; Osamu at [0007]; [0009]; [0010]; [0011]; FIGS. 1, 3. Osamu describes a woven textile element, rather than a weft-knitted textile element. Grounds 19; 24; 29; 35; 38: **Osamu + other art** Woven and knitted textiles are both suitable for use in uppers and were well-known in the art at the time of the priority date of the '011 patent. *See* Nishida at 1:61-62; 1:67-68; 2:42-45; 3:6-10; 3:45-52; 3;66-68; 5:63-6:2; 6:23-25; Curley at p. 7, lines 32-33; p. 8, lines 7-9; p. 16, lines 5-8. Additionally, Glidden, McDonald, Whiting, and Curley each disclose an upper incorporating a weft-knitted textile element. *See* Glidden at p. 1, 2:45-48; FIGS. 1, 6, 8; McDonald at p. 1, 2:26-39; Whiting at 2:39-56; Curley at p. 7, line 32-p. 8, line 25.
wherein the weft-knitted textile element incorporates a single type of textile having a	Grounds 1-3; 7; 12: **Nishida** discloses that the knit textile element may be a single textile element having a plurality of knit constructions. Frederick Dec. at ¶ 72; Nishida at 3:15-4:18; 4:47-60; 5:41-45; 5:63-6:2;

'011 Patent Claims	Description of Prior Art
plurality of knit constructions; and	6:4-41. Grounds 15-17: **Glidden** discloses that the knit textile element may be a single textile element having a plurality of knit constructions. Frederick Dec. at ¶ 84; Glidden at p. 1, 2:33-44; FIG. 1. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element may be a single textile element having a plurality of constructions. Frederick Dec. at ¶ 91; Osamu at [0005]; [0007]; [0009]; [0012]; claim 1.
a sole structure secured to the upper.	Grounds 1-3; 7; 12: **Nishida** discloses that a sole structure may be secured to the upper. Frederick Dec. at ¶ 72; Nishida at Abstract; FIG. 3. Grounds 15-17: **Glidden** discloses that a sole structure may be secured to the upper. Frederick Dec. at ¶ 84; Glidden at p. 2, 1:9-19, 2:8-15, 2:23-30; FIGS. 1, 6. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that a sole structure may be secured to the upper. Frederick Dec. at ¶ 91; Osamu at [0001], [0007], [0013], [0015].
2. The article of footwear recited in claim 1, wherein the weft-knitted textile element forms at least a portion of a lateral side, a medial side, and an instep region of the upper.	Grounds 1-3; 7; 12: **Nishida** discloses that the knit textile element may form at least a portion of a lateral side, a medial side, and an instep region of the upper. Frederick Dec. at ¶ 72; Nishida at 3:15-4:46; FIGS. 1-5. Grounds 15-17: **Glidden** discloses that the knit textile element may form at least a portion of a lateral side, a medial side, and an instep region of the upper. Frederick Dec. at ¶ 84; Glidden at p. 1, 2:3-10; FIGS. 1-3. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element may form at least a portion of a lateral side, a medial side, and an instep region of the upper. Frederick Dec. at ¶ 91; Osamu at [0007]-[0010]; FIGS. 1, 3.
3. The article of footwear recited in claim 1, wherein the edges include a pair of first	Grounds 1-3; 7; 12: **Nishida** discloses that edges of the knit textile element may include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper.

'011 Patent Claims	Description of Prior Art
edges that are joined to form a first seam extending longitudinally along a lower region of the upper.	Frederick Dec. at ¶ 72; Nishida at 5:3-13; FIG. 4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that edges of the textile element may include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper. Frederick Dec. at ¶ 91; Osamu at [0007]; FIG. 1.
4. The article of footwear recited in claim 3, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper.	Grounds 1-3; 7; 12: **Nishida** discloses that edges of the knit textile element may also include a pair of second edges that are joined to form a second seam extending along a heel region of the upper. Frederick Dec. at ¶ 72; Nishida at 3:31-36; 4:9-11; FIGS. 2, 4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that edges of the textile element may also include a pair of second edges that are joined to form a second seam extending along a heel region of the upper. Frederick Dec. at ¶ 91; Osamu at [0010]; FIGS. 1, 3.
5. The article of footwear recited in claim 4, wherein the second seam extends vertically.	Grounds 1-3; 7; 12: **Nishida** discloses that the second seam extends vertically. Frederick Dec. at ¶ 72; Nishida at 3:31-36; 4:9-11; FIGS. 2-4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the second seam extends vertically. Frederick Dec. at ¶ 91; Osamu at [0010]; FIGS. 1, 3.
6. The article of footwear recited in claim 4, wherein the edges include at least a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper.	Grounds 1-3; 7; 12: **Nishida** discloses that edges of the knit textile element may also include a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper. Frederick Dec. at ¶ 72; Nishida at 4:19-30; FIG. 4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that edges of the textile element may also include a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper. Frederick Dec. at ¶ 91; Osamu at FIG. 1.
7. The article of footwear recited in claim 1, wherein the weft-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the	Grounds 1-3; 7; 12: **Nishida** discloses that the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-9; 3:66-4:1; FIG. 3. Grounds 15-17: **Glidden** discloses that the knit textile element may at least be an exterior layer of the upper (*see* FIG. 1) and/or an interior

'011 Patent Claims	Description of Prior Art
upper.	layer of the upper. Frederick Dec. at ¶ 84; Glidden at p. 1, 2:3-23; p. 2, 1:68-74; FIGS. 1-3, 6-8. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. Frederick Dec. at ¶ 91; Osamu at [0001]; [0005]; [0010]; claim 1.
8. The article of footwear recited in claim 1, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the weft-knitted textile element forms at least a portion of the interior layer.	Grounds 1-2: **Nishida** discloses that the upper may include two or more layers, and the knit textile element may form at least a portion of the interior layer. Frederick Dec. at ¶ 72; Nishida at 3:6-9; 3:62-4:1. Grounds 4-5; 8-9; 12-13: **Nishida + other art** Uppers incorporating three layers, wherein a knit textile element forms a portion of an inner layer and an outer layer were well-known in the art at the time of the priority date of the '011 patent. *See* Curley at p. 6, lines 30-32; p. 30, claim 34; p. 7, line 32-p. 8, line 5; Shiomura at 2:26-45. Grounds 15-17: **Glidden** discloses that the knit textile element may at least be an exterior layer of the upper and/or an interior layer of the upper. Frederick Dec. at ¶ 84; Glidden at p. 1, 2:3-23; p. 2, 1:9-19; p. 2, 1:68-74; FIGS. 1-2. Ground 18: **Osamu** discloses that the upper may include two or more layers, and the textile element may form at least a portion of the interior layer. Frederick Dec. at ¶ 91; Osamu at [0001]; [0005]; [0006]; [0010]; claim 1. Grounds 20-21; 25-26; 30-31; 36-38: **Osamu + other art** Uppers incorporating three layers, wherein a knit textile element forms a portion of an inner layer and an outer layer were well-known in the art at the time of the priority date of the '011 patent. *See* Curley at p. 6, lines 30-32; p. 30, claim 34; p. 7, line 32-p. 8, line 5; Shiomura at 2:26-45.
9. The article of footwear recited in claim 1, wherein the weft-knitted textile element forms at	Grounds 1-2: **Nishida** discloses that the knit textile element may form at least a portion of an interior surface and an exterior surface of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-4:46; FIG. 3.

'011 Patent Claims	Description of Prior Art
least a portion of both an interior surface and an exterior surface of the upper.	Grounds 4-6; 8-10; 12-14: **Nishida + other art** Uppers having a knit textile element that forms a portion of an interior surface and an exterior surface were well-known in the art at the time of the priority date of the '011 patent. *See* Curley at p. 6, lines 30-32; p. 30, claim 34; p. 7, line 32-p. 8, line 5; Shiomura at 2:26-45; Glidden at FIGS. 1-2, p. 1, 2:3-32. Grounds 15-17: **Glidden** discloses that the knit textile element forms at least a portion of an interior surface and an exterior surface of the upper. Frederick Dec. at ¶ 84; Glidden at p. 1, 2:3-23; p. 2, 1:68-74; FIGS. 1-3, 6-8. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element may form at least a portion of an interior surface and an exterior surface of the upper. Frederick Dec. at ¶ 91; Osamu at [0001]; [0005]; [0010]; claim 1.
10. The article of footwear recited in claim 9, wherein at least one additional element is secured to the exterior surface and forms a portion of the exterior surface.	Grounds 1-3; 7; 12: **Nishida** discloses that elements such as toe caps or heel counters may be secured to the exterior surface of the upper and may form a portion of the exterior surface of the upper. Frederick Dec. at ¶ 72; Nishida at 2:37-47; 3:37-42; 3:53-58; 4:9-11; FIG. 3. Grounds 15-17: **Glidden** discloses that counters, heel reinforcements, blucher saddle, toe caps, and heel straps may be secured to the exterior surface of the upper and may form a portion of the exterior surface of the upper. Frederick Dec. at ¶ 84; Glidden at p. 2, 1:9-19, 1:50-55, 1:64-74, 2:24-26; FIGS. 1-8. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that other elements may be secured to the exterior surface of the upper and may form a portion of the exterior surface of the upper. Frederick Dec. at ¶ 91; Osamu at [0006].
11. The article of footwear recited in claim 10, wherein the additional element is secured to a forefoot	Grounds 1-3; 7; 11: **Nishida** discloses that a toe cap may be secured to a forefoot area of the upper. Frederick Dec. at ¶ 72; Nishida at 3:37-42. Grounds 15-17: **Glidden** discloses that a toe cap may be secured to a forefoot

'011 Patent Claims	Description of Prior Art
area of the upper.	area of the upper. Frederick Dec. at ¶ 84; Glidden at p. 2, 2:24-26; FIGS. 6, 8. Ground 18: **Osamu** discloses that other elements may be secured to the exterior surface of the upper. Frederick Dec. at ¶ 91; Osamu at [0006]. Grounds 22-23; 27-29; 35: **Osamu + other art** The incorporation of additional features onto a forefoot area of an upper were well-known in the art at the time of the priority date of the '011 patent. *See* Nishida at 3:37-42; Glidden at p. 2, 2:24-26; FIGS. 6, 8.
12. The article of footwear recited in claim 10, wherein the additional element is secured to a heel area of the upper.	Grounds 1-3; 7; 11: **Nishida** discloses that a heel counter may be secured to the heel area of the upper. Frederick Dec. at ¶ 72; Nishida at 4:9-11. Grounds 15-17: **Glidden** discloses that a heel counter or heel reinforcement may be secured to the heel area of the upper. Frederick Dec. at ¶ 84; Glidden at p. 2, 1:9-19, 2:24-26; FIGS. 1-6. Ground 18: **Osamu** discloses that other elements may be secured to the exterior surface of the upper. Frederick Dec. at ¶ 91; Osamu at [0006]. Grounds 22-23; 27-29; 35: **Osamu + other art** The incorporation of additional features onto a heel area of an upper were well-known in the art at the time of the priority date of the '011 patent. *See* Nishida at 4:9-11; FIG. 3; Glidden at p. 2, 1:9-19, 2:24-26; FIGS. 1-6.
13. The article of footwear recited in claim 1, wherein the textile element forms an interior surface of the upper.	Grounds 1-2: **Nishida** discloses that the knit textile element may form an interior surface of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-46. Grounds 4-6; 8-10; 12-14: **Nishida + other art** Uppers incorporating knit textile elements that form an interior surface of the upper were well-known in the art at the time of the priority date of the '011 patent. *See* Curley at p. 6, lines 30-32; p. 30, claim 34; Shiomura at 2:26-45; Glidden at FIGS. 1-2, p. 1,

'011 Patent Claims	Description of Prior Art
	2:3-32. Grounds 15-17: **Glidden** discloses that the knit textile element forms an interior surface of the upper. Frederick Dec. at ¶ 84; Glidden at p. 1, 2:3-23; p. 2, 1:68-74; FIGS. 1-3, 6-8. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element forms an interior surface of the upper. Frederick Dec. at ¶ 91; Osamu at [0001]; [0005]; [0010]; claim 1.
14. The article of footwear recited in claim 1, wherein the weft-knitted textile element is created by circular knitting.	Grounds 1-2: **Nishida** discloses the use of "conventional" knitting processes to form the textile element of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-12. Grounds 3; 7: **Nishida + other art** Uppers incorporating textile elements formed by circular knitting were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-39; Whiting at 2:39-56. Ground 15: **Glidden** describes fabricating a unitary knitted upper as a shaped, "sock-like" article. Frederick Dec. at ¶ 84; Glidden at p. 1, 2:3-10, 2:45-48; FIGS. 1, 6, 8. Grounds 16-17: **Glidden + other art** Uppers incorporating textile elements formed by circular knitting were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-39; Whiting at 2:39-56. Ground 18: **Osamu** See claim 1 Grounds 19; 24; 33; 34: **Osamu + other art** Uppers incorporating textile elements formed by circular knitting, a sub-type of weft knitting, were well-known in the art at the time of the priority date of the '011 patent. *See* Whiting at 2:39-56; McDonald, at p. 1, 2:26-39.
15. The article of footwear recited in claim 1, wherein the weft-	Grounds 1-2: **Nishida** discloses the use of "conventional" knitting processes to form the textile element of the upper. Frederick Dec. at ¶ 72;

'011 Patent Claims	Description of Prior Art
knitted textile element is created by flat knitting.	Nishida at 3:6-12. Ground 7: **Nishida + other art** Uppers incorporating textile elements formed by flat knitting were well-known in the art at the time of the priority date of the '011 patent. *See* Whiting at 2:39-56. Ground 18: **Osamu** See claim 1 Ground 24; 34: **Osamu + other art** Uppers incorporating textile elements formed by flat knitting, a sub-type of weft knitting, were well-known in the art at the time of the priority date of the '011 patent. *See* Whiting at 2:39-56.
24. An article of footwear comprising:	Grounds 1-2: **Nishida** discloses an article of footwear. Frederick Dec. at ¶ 72; Nishida at Abstract; FIG. 3. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses an article of footwear. Frederick Dec. at ¶ 91; Osamu at Title; [0001]; [0007].
an upper incorporating a textile element having edges that are joined together to form seams and define at least a portion of a void for receiving a foot,	Grounds 1-2: **Nishida** discloses an upper incorporating a textile element having edges that are joined together to form seams and define at least a portion of a void for receiving a foot Frederick Dec. at ¶ 72; Nishida at Abstract; 3:6-12; 3:31-42; FIGS. 2-3. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses an upper incorporating a textile element having edges that are joined together to define at least a portion of a void for receiving a foot. Frederick Dec. at ¶ 91; Osamu at [0007]; [0009]; [0010]; FIGS. 1, 3.
the seams including a first seam and a second seam, the first seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper, and the second seam extending	Grounds 1-2: **Nishida** discloses that the seams include a first seam that extends from a heel area to a forefoot area of the footwear along a lower surface of the upper and a second seam that extends vertically in the heel area. Frederick Dec. at ¶ 72; Nishida at 3:31-36; 4:9-11; 5:3-13; FIGS. 2, 4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the seams include a first seam that extends from a heel area to a forefoot area of the footwear along

'011 Patent Claims	Description of Prior Art
vertically in the heel area,	a lower surface of the upper and a second seam that extends vertically in the heel area. Frederick Dec. at ¶ 91; Osamu at [0007]; [0010]; FIGS. 1, 3.
wherein the textile element incorporates a single type of textile having a plurality of knit constructions; and	Grounds 1-2: **Nishida** discloses that the textile element may be a single textile element having a plurality of knit constructions. Frederick Dec. at ¶ 72; Nishida at 3:15-4:18; 4:47-60; 5:41-45; 5:63-6:2; 6:4-41. Ground 18: **Osamu** discloses that the textile element may be a single textile element having a plurality of constructions. Frederick Dec. at ¶ 91; Osamu at [0005]; [0007]; [0009]; [0012]; claim 1. Osamu describes a woven textile element with a plurality of weave structures, rather than a knitted textile element with a plurality of knit constructions. Grounds 19; 24; 29; 35; 38: **Osamu + other art** Woven and knitted textiles are both suitable for use in uppers and were well-known in the art at the time of the priority date of the '011 patent. *See* Nishida at 1:61-62; 1:67-68; 2:42-45; 3:6-10; 3:45-52; 3;66-68; 5:63-6:2; 6:23-25; Curley at p. 7, lines 32-33; p. 8, lines 7-9; p. 16, lines 5-8. Additionally, McDonald, Whiting, and Curley each disclose an upper incorporating a weft-knitted textile element. *See* McDonald at p. 1, 2:26-39; Whiting at 2:39-56; Curley at p. 7, line 32-p. 8, line 25.
a sole structure secured to the upper.	Grounds 1-2: **Nishida** discloses that a sole structure may be secured to the upper Frederick Dec. at ¶ 72; Nishida at Abstract; FIG. 3. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that a sole structure may be secured to the upper. Frederick Dec. at ¶ 91; Osamu at [0001], [0007], [0013], [0015].
25. The article of footwear recited in claim 24, wherein the footwear includes a third seam extending through the forefoot area of the upper.	Grounds 1-2: **Nishida** discloses that the footwear includes a third seam that extends through a forefoot area of the upper. Frederick Dec. at ¶ 72; Nishida at 4:19-30; FIG. 4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the footwear includes a third seam that extends through a forefoot area of the upper. Frederick Dec. at ¶ 91; Osamu at FIG. 1.

'011 Patent Claims	Description of Prior Art
26. The article of footwear recited in claim 24, wherein at least one of the knit constructions forms an aperture in the textile element.	Grounds 1-2: **Nishida** discloses that at least one knit construction may form a net-like structure (i.e. having apertures) in the textile element. Frederick Dec. at ¶ 72; Nishida at 3:43-52. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses at least one configuration may form a weave structure with high breathability (i.e. having apertures) in the textile element. Frederick Dec. at ¶ 91; Osamu at [0009].
27. The article of footwear recited in claim 24, wherein the knit constructions produce varying properties in the textile element including a varying elasticity of the textile element.	Grounds 1-2: **Nishida** discloses that the knit constructions may produce varying elasticity of the textile element. Frederick Dec. at ¶ 72; Nishida at 2:26-37; 3:43-52; 6:16-31. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the knit constructions may produce varying elasticity of the textile element. Frederick Dec. at ¶ 91; Osamu at [0008]; [0009].
28. The article of footwear recited in claim 24, wherein the knit constructions produce varying properties in the textile element including a varying air permeability of the textile element.	Grounds 1-2: **Nishida** discloses that the knit constructions may produce a varying air permeability of the textile element. Frederick Dec. at ¶ 72; Nishida at 3:43-52; 6:16-31. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the constructions may produce a varying air permeability of the textile element. Frederick Dec. at ¶ 91; Osamu at [0009].
29. The article of footwear recited in claim 24, wherein the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.	Grounds 1-2: **Nishida** discloses that the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-9; 3:66-4:1; FIG. 3. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. Frederick Dec. at ¶ 91; Osamu at [0001]; [0005]; [0010]; claim 1.
30. The article of footwear recited in claim 24, wherein the textile element forms at least a portion of both an interior surface and an exterior surface of the upper.	Grounds 1-2: **Nishida** discloses that the knit textile element may form at least a portion of an interior surface and an exterior surface of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-4:46; FIG. 3. Grounds 12-14: **Nishida + other art** Uppers having a knit textile element that forms a portion of an

'011 Patent Claims	Description of Prior Art
	interior surface and an exterior surface were well-known in the art at the time of the priority date of the '011 patent. *See* Curley at p. 6, lines 30-32; p. 30, claim 34; p. 7, line 32-p. 8, line 5; Shiomura at 2:26-45; Glidden at FIGS. 1-2, p. 1, 2:3-32. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element may form at least a portion of an interior surface and an exterior surface of the upper. Frederick Dec. at ¶ 91; Osamu at [0001]; [0005]; [0010]; claim 1.
31. The article of footwear recited in claim 24, wherein the textile element forms an interior surface of the footwear, and at least one additional layer forms an exterior surface of the footwear.	Grounds 1-2: **Nishida** discloses that the upper may include two or more layers, and that the knit textile element may form an interior surface of the upper. Frederick Dec. at ¶ 72; Nishida at 2:37-39; 3:6-46; 4:9-11. Grounds 12-14: **Nishida + other art** Uppers incorporating knit textile elements that form an interior surface of the footwear and have at least one additional layer forming an exterior surface were well-known in the art at the time of the priority date of the '011 patent. *See* Curley at p. 6, lines 30-32; p. 30, claim 34; Shiomura at 2:20-35; FIG. 1; Glidden at p. 2, 1:9-19, 1:68-74; FIGS. 1, 6, 8. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element forms an interior surface of the footwear and at least one additional layer forms an exterior surface of the footwear. Frederick Dec. at ¶ 91; Osamu at [0001]; [0005]; [0006]; [0010]; claim 1.
32. The article of footwear recited in claim 24, wherein at least a portion of the textile element has a weft knitted construction.	Grounds 1-2: **Nishida** discloses the use of "conventional" knitting processes to form the textile element of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-12. Grounds 3, 7, 12: **Nishida + other art** Uppers incorporating weft-knitted textile elements were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-39; Whiting at 2:39-56; Curley at p. 7, line 32-p. 8, line 25. Ground 18: **Osamu**

'011 Patent Claims	Description of Prior Art
	See claim 24 Grounds 19; 24; 29; 35; 38: **Osamu +other art** Woven and knitted textiles are both suitable for use in uppers and were well-known in the art at the time of the priority date of the '011 patent. *See* Nishida at 1:61-62; 1:67-68; 2:42-45; 3:6-10; 3:45-52; 3;66-68; 5:63-6:2; 6:23-25; Curley at p. 7, lines 32-33; p. 8, lines 7-9; p. 16, lines 5-8. Additionally, Glidden, McDonald, Whiting, and Curley discloses an upper incorporating a weft-knitted textile element. *See* Glidden at p. 1, 2:3-10; p. 1, 2:45-48; FIGS. 1, 6, 8; McDonald at p. 1, 2:26-39; Whiting at 2:39-56; Curley at p. 7, line 32-p. 8, line 25.
33. The article of footwear recited in claim 32, wherein the weft knitted construction is produced by one of circular knitting and flat knitting.	Ground 1-2: **Nishida** discloses the use of "conventional" knitting processes to form the textile element of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-12. Grounds 3; 7: **Nishida** discloses the use of "conventional" knitting processes to form the textile element of the upper. Frederick Dec. at ¶ 72. Uppers incorporating textile elements formed by circular knitting and/or flat knitting, both sub-types of weft knitting, were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-39; Whiting at 2:39-56. It would have been obvious at the time of the priority date of the '011 patent to incorporate circular knitted and/or flat knitted textile elements as disclosed by McDonald or Whiting into Nishida's upper. Frederick Dec. at ¶ 72. *See* MPEP § 2143(A), (C). Ground 18: **Osamu** See claim 24 Grounds 19; 24; 33-34: **Osamu +other art** Uppers incorporating textile elements formed by circular knitting and/or flat knitting, both sub-types of weft knitting, were well-known in the art at the time of the priority date of the '011 patent. *See* Whiting at 2:39-56; McDonald, at p. 1, 2:26-39.
34. The article of footwear recited in claim 24, wherein the textile	Grounds 1-2: **Nishida** discloses the use of "conventional" knitting processes to form the textile element of the upper. Frederick Dec. at ¶ 72;

'011 Patent Claims	Description of Prior Art
element has a warp knitted construction.	Nishida at 3:6-12. Grounds 12-13: **Nishida + other art** Uppers incorporating textile elements formed by warp knitting were well-known in the art at the time of the priority date of the '011 patent. *See* Curley at p. 7, lines 31-32; Shiomura at 3:4-43. Ground 18: **Osamu** See claim 24 Grounds 20-21; 23; 25-26; 28-29; 36-38: **Osamu + other art** Uppers incorporating textile elements formed by warp knitting were well-known in the art at the time of the priority date of the '011 patent. *See* Curley at p. 7, lines 31-32; Shiomura at 3:4-43.
35. The article of footwear recited in claim 34, wherein the warp knitted construction is produced by a jacquard double needle-bar raschel.	Ground 2: **Nishida** discloses the use of "conventional" knitting processes to form the textile element of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-12. Ground 13: **Nishida + other art** Uppers incorporating textile elements formed by warp knitted construction and produced by a jacquard double needle-bar raschel were well-known in the art at the time of the priority date of the '011 patent. *See* Shiomura at 3:4-43; FIG. 5. Ground 18: **Osamu** describes a Jacquard woven textile element, which may be formed by a weaving machine. Frederick Dec. at ¶ 91; Osamu at [0005]; [0012]; [0014]. Grounds 21; 26; 31; 37; 39: **Osamu + other art** Uppers incorporating textile elements formed by warp knitted construction and produced by a jacquard double needle-bar raschel were well-known in the art at the time of the priority date of the '011 patent. *See* Shiomura at 3:4-43.
36. An article of footwear comprising:	Grounds 1-2: **Nishida** discloses an article of footwear. Frederick Dec. at ¶ 72; Nishida at Abstract; FIG. 3. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses an article of footwear. Frederick Dec. at ¶ 91;

'011 Patent Claims	Description of Prior Art
	Osamu at Title; [0001]; [0007].
an upper incorporating a knitted textile element formed with a knitting machine, the textile element being removed from a textile structure that includes an outline of the textile element, and	Grounds 1-2: **Nishida** discloses an upper incorporating a knitted textile element that may be formed with a knitting machine, where the textile element is removed from a textile structure that includes an outline of the textile element. Frederick Dec. at ¶ 72; Nishida at Abstract; 1:48-2:47; 3:6-12; 4:12-18; 4:31-42; 4:47-55; 5:63-6:2; 6:32-35; FIG. 2. Ground 18: **Osamu** discloses an upper incorporating a textile element that may be formed with a weaving machine, where the textile element is removed from a textile structure that includes an outline of the textile element. Frederick Dec. at ¶ 91; Osamu at [0005]; [0007]-[0009]; [0012]; [0014]; FIG. 1. Osamu describes a woven textile element, rather than a knitted textile element. Grounds 18-19; 24; 29; 35; 38: **Osamu + other art** Woven and knitted textiles are both suitable for use in uppers and were well-known in the art at the time of the priority date of the '011 patent. *See* Nishida at 1:61-62; 1:67-68; 2:42-45; 3:6-10; 3:45-52; 3;66-68; 5:63-6:2; 6:23-25; Curley at p. 7, lines 32-33; p. 8, lines 7-9; p. 16, lines 5-8. Additionally, Glidden, McDonald, Whiting, and Curley each disclose an upper incorporating a weft-knitted textile element. *See* Glidden at p. 1, 2:45-48; FIGS. 1, 6, 8; McDonald at p. 1, 2:26-39; Whiting at 2:39-56; Curley at p. 7, line 32-p. 8, line 25.
the textile element having edges that are joined together to define at least a portion of a void for receiving a foot,	Grounds 1-2: **Nishida** discloses that the knitted textile element may have edges that are joined together to define at least a portion of a void for receiving a foot. Frederick Dec. at ¶ 72; Nishida at Abstract; 3:6-12; 3:31-42; FIGS. 2-3. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element may have edges that are joined together to define at least a portion of a void for receiving a foot. Frederick Dec. at ¶ 91; Osamu at [0009]; [0010]; FIGS. 1, 3.
wherein the textile element incorporates a single type of textile	Grounds 1-2: **Nishida** discloses that the knitted textile element may be a single textile element having a plurality of knit constructions

'011 Patent Claims	Description of Prior Art
having a plurality of knit constructions; and	Frederick Dec. at ¶ 72; Nishida at 3:15-4:18; 4:47-60; 5:41-45; 5:63-6:2; 6:4-41. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element may be a single textile element having a plurality of constructions. Frederick Dec. at ¶ 91; Osamu at [0005]; [0007]; [0009]; [0012]; claim 1.
a sole structure secured to the upper.	Grounds 1-2: **Nishida** discloses that a sole structure may be secured to the upper Frederick Dec. at ¶ 72; Nishida at Abstract; FIG. 3. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that a sole structure may be secured to the upper. Frederick Dec. at ¶ 91; Osamu at [0001], [0007], [0013], [0015].
37. The article of footwear recited in claim 36, wherein the knitted textile element has a structure formed by a wide-tube circular knitting machine.	Ground 2: **Nishida** discloses the use of "conventional" knitting processes to form the textile element of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-12. Ground 3: **Nishida + other art** Uppers incorporating textile elements formed by a wide-tube circular knitting machine were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-30. Ground 18: **Osamu** discloses that a woven textile element may be formed by a weaving machine. Frederick Dec. at ¶ 91; Osamu at [0012]; [0014]. Ground 19; 33: **Osamu + other art** Uppers incorporating textile elements formed by a wide-tube circular knitting machine were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-30.
38. The article of footwear recited in claim 36, wherein the knitted textile element has a structure formed by a jacquard double needle-	Ground 2: **Nishida** discloses the use of "conventional" knitting processes to form the textile element of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-12. Ground 13: **Nishida + other art**

'011 Patent Claims	Description of Prior Art
bar raschel knitting machine.	Uppers incorporating textile elements formed by warp knitted construction and produced by a jacquard double needle-bar raschel knitting machine were well-known in the art at the time of the priority date of the '011 patent. *See* Shiomura at 3:4-43. Ground 18: **Osamu** describes a Jacquard woven textile element, which may be formed by a weaving machine. Frederick Dec. at ¶ 91; *see also* Osamu at [0005]; [0012]; [0014]. Grounds 21; 26; 31; 37; 39: **Osamu + other art** Uppers incorporating textile elements formed by warp knitted construction and produced by a jacquard double needle-bar raschel knitting machine were well-known in the art at the time of the priority date of the '011 patent. *See* Shiomura at 3:4-43.
39. The article of footwear recited in claim 36, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper.	Grounds 1-2: **Nishida** discloses that edges of the knit textile element may include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper. Frederick Dec. at ¶ 72; Nishida at 5:3-13; FIG. 4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that edges of the textile element may include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper. Frederick Dec. at ¶ 91; Osamu at [0007]; FIG. 1.
40. The article of footwear recited in claim 39, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper.	Grounds 1-2: **Nishida** discloses that edges of the knit textile element may also include a pair of second edges that are joined to form a second seam extending along a heel region of the upper. Frederick Dec. at ¶ 72; Nishida at 3:31-36; 4:9-11; FIGS. 2, 4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that edges of the textile element may also include a pair of second edges that are joined to form a second seam extending along a heel region of the upper. Frederick Dec. at ¶ 91; Osamu at [0010]; FIGS. 1, 3.
41. The article of footwear recited in claim 40, wherein the edges include at least a pair of third edges that are	Grounds 1-2: **Nishida** discloses that edges of the knit textile element may also include a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper. Frederick Dec. at ¶ 72; Nishida at 4:19-30; FIG. 4.

'011 Patent Claims	Description of Prior Art
joined to form a second seam extending through a forefoot area of the upper.	Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that edges of the textile element may also include a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper. Frederick Dec. at ¶ 91; Osamu at FIG. 1.
42. The article of footwear recited in claim 36, wherein the knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.	Grounds 1-2: **Nishida** discloses that the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-9; 3:66-4:1; FIG. 3. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. Frederick Dec. at ¶ 91; Osamu at [0001]; [0005]; [0010]; claim 1.
43. The article of footwear recited in claim 36, wherein the knitted textile element forms an interior surface of the upper.	Grounds 1-2: **Nishida** discloses that the knit textile element may form an interior surface of the upper. Frederick Dec. at ¶ 72; Nishida at 3:6-46. Grounds 12-14: **Nishida + other art** Uppers incorporating knit textile elements that form an interior surface of the upper were well-known in the art at the time of the priority date of the '011 patent. *See* Curley at p. 6, lines 30-32; p. 30, claim 34; Shiomura at 2:26-45; Glidden at FIGS. 1-2, p. 1, 2:3-32. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses that the knit textile element forms an interior surface of the upper. Frederick Dec. at ¶ 91; Osamu at [0001]; [0005]; [0010]; claim 1.

B. "Textile Element 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" in Claims 16-23

As discussed above, the Applicants argued that the prior art of record did not teach a textile element having first and second areas that each has a different stitch configuration to

impart varying properties to each area of the textile element as the sole basis for distinguishing claim 16 over the prior art of record. ('011 file history (Ex. 1003), at 01/12/2007 Response, pp. 10-12). Because the next action from the PTO was a Notice of Allowance, the Examiner appears to have relied on this ground as the reason for allowance of claim 16.

Yet, several prior art references, which were not before the Examiner or apparently were not applied by the Examiner for this feature during prosecution, teach textile elements having first and second areas that each has a different stitch configuration to impart varying properties to each area of the textile element as required by claim 16. For example, Nishida, Glidden, and Osamu all disclose textile elements having first and second areas that each has a different stitch configuration to impart varying properties to each area of the textile element. (Frederick Dec. (Ex. 1001), ¶¶ 68, 72, 81, 84, 88-89, 91). For example, Glidden states:

> In fabricating the unitary upper, as by knitting, areas thereof which are normally subjected to greater wear and in which a lower degree of elasticity is desired, such as the toe 11 and the heel portion 12, may be more densely fabricated to provide therein heavier weight and less extensibility than in the other parts of the upper, as by changing the type of stitch or amount [of] thickness of the yarn in the knitting. Other areas, such as the ankle portion 13, are preferably made so as to provide softness and elasticity, as by making them of ribbed construction, as shown.

(Glidden (Ex. 1007), p. 1, col. 2, ll. 33-44).

The use of textile elements 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 was well-known in the art at the time of the priority date of the '011 patent.

As set forth in the claim charts below, Nishida, Glidden, and Osamu anticipate or, at the very least, render obvious claims 16-23 of the '011 patent, alone or in combination. Specifically, grounds 1 and 15 set forth how these claims are anticipated by Nishida or Glidden, as further referenced in the charts below. Regarding various combinations of prior art, the '011 patent claims merely recite the combination of "prior art elements according to known methods to yield predictable results" and/or the "[u]se of known technique[s] to improve similar devices (methods, or products) in the same way." *See* MPEP § 2143 (A, C). For example, a person of ordinary skill in the art would have understood that using a knitted textile element having first and second areas that each has a different stitch configuration to impart varying properties to each area of the textile element was a well-known endeavor among those in the textile industry. (Frederick Dec. (Ex. 1001), ¶¶ 72, 84, 91). With regard to the other recited elements in claim 16, it is undisputed the prior art discloses the combination of these features in uppers for an article of footwear.

Moreover, one of ordinary skill in the art would have understood and expected the benefits of using a knitted textile element having first and second areas that each has a

different stitch configuration to impart varying properties to each area of the textile element with such an upper – that is, that a knitted textile element having first and second areas that each has a different stitch configuration to impart varying properties to each area of the textile element would provide the advantages of different properties in the shoe upper, such as breathability and elasticity, while increasing the efficiency of the manufacturing process. ('011 patent (Ex. 1002), 2:62-3:16; 11:12-18). Specifically, the prior art references cited in Section VI.A above teach the construction of and/or process for constructing a knitted shoe upper. The common teachings of these prior art references show that it would have been obvious for a person of ordinary skill in the art to combine their teachings in designing a knitted shoe upper to achieve the claimed features of the '011 patent. Thus, claims 16-23 of the '011 patent are not patentable in view of the above-noted references considered individually or in combination.

With respect to claims 16-23, the specific grounds of rejection are set forth in Section III.B above, and the specific citations to the teachings of the cited art are in the chart below.

As stated in the grounds, Nishida anticipates claims 16 and 19-23, and claims 16-23 are also obvious in view of Nishida alone or Nishida and other prior art. With respect to claim 16, a POSITA at the time of the priority date of the '011 patent would have understood Nishida's teaching of "conventional" knitting processes to include weft knitting. (*See* cites in chart; Frederick Dec. at ¶ 72). Likewise, a POSITA at the time of the priority date of the '011 patent would have understood that Nishida describes varying stitch configurations to

impart different properties to two different areas. (*See* cites in chart; Frederick Dec. at ¶ 72). In addition, it would have been obvious at the time of the priority date of the '011 patent to incorporate weft-knitted textile elements -- as disclosed by McDonald, Whiting, or Curley -- or different stitch configurations -- as disclosed by Glidden or McDonald -- into Nishida's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 72). A POSITA at the time of the priority date of the '011 patent would have understood that is an obvious design choice or a selection from among a finite number of techniques to do so. (*See* Frederick Dec. at ¶ 72)

With respect to Nishida and claims 17-18, it would have been obvious at the time of the priority date of the '011 patent to incorporate the stitch configurations as disclosed by Glidden or McDonald into Nishida's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 72).

With respect to Nishida and claim 21, see the discussion of dependent claim 8 in Section VI.A above. With respect to Nishida and claim 22, see the discussion of dependent claim 9 in Section VI.A above. With respect to Nishida and claim 23, see the discussion of dependent claim 13 in Section VI.A above.

As stated in the grounds, Glidden anticipates claims 16-23. A POSITA at the time of the priority date of the '011 patent would have understood from Glidden that it describes circular knitting, a form of weft knitting, which has been used for making socks for many decades. (*See* cites in chart; Frederick Dec. at ¶ 84). In addition, it would have in any

event been obvious at the time of the priority date of the '011 patent to incorporate weft-knitted (circular) textile elements as disclosed by McDonald or Whiting into Glidden's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 84).

As stated in the grounds, Osamu alone or in combination with other art renders claims 16-23 obvious. For example, Osamu describes every element of independent claim 16, except that Osamu discloses using a woven textile element rather a weft-knitted textile element. A POSITA at the time of the priority date of the '011 patent would have understood that woven and knitted textiles are both suitable for use in uppers and the selection of one versus the other is an obvious design choice, as described by Nishida and Curley for example. (*See* Frederick Dec. at ¶ 91). In addition, it would have been obvious at the time of the priority date of the '011 patent to incorporate a weft-knitted textile -- as disclosed by Nishida, Curley, Glidden, McDonald, or Whiting -- into Osamu's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 91).

With respect to Osamu and claims 17-18, it would have been obvious at the time of the priority date of the '011 patent to incorporate the stitch configurations as disclosed by Glidden, McDonald, or Nishida into Osamu's upper, for reasons such as those identified in *KSR*, 550 U.S. at 417-422. (*See* Frederick Dec. at ¶ 91). A POSITA at the time of the priority date of the '011 patent would have understood that varying stitch configurations to

impart different properties to two different areas is an obvious design choice or a selection from among a finite number of techniques to do so. (*See* Frederick Dec. at ¶ 91).

With respect to Osamu and claim 21, see the discussion of dependent claim 8 in Section VI.A above.

'011 Patent Claims	Description of Prior Art
16. An article of footwear comprising:	Grounds 1-3; 7; 12: **Nishida** discloses an article of footwear. Frederick Dec. at ¶ 72; Nishida at Abstract; FIG. 3. Grounds 15-17: **Glidden** discloses an article of footwear. Frederick Dec. at ¶ 84; Glidden at Title; p. 1, 1:1-4. Grounds 18-19; 24; 29; 35; 38: **Osamu** discloses an article of footwear. Frederick Dec. at ¶ 91; Osamu at Title; [0001]; [0007].
an upper incorporating a weft-knitted textile element, the textile element having a first area and a second area with a unitary construction,	Grounds 1-2: **Nishida** discloses an upper incorporating a knit textile element having first and second areas with a unitary construction. Frederick Dec. at ¶ 72; Nishida at Abstract; 3:6-12; 3:15-26; 4:12-18; FIGS. 2-3. Grounds 3; 7; 12: **Nishida + other art** Uppers incorporating weft-knitted textile elements were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-39; Whiting at 2:39-56; Curley at p. 7, line 32-p. 8, line 25. Ground 15: **Glidden** discloses an upper incorporating a weft-knitted textile element having first and second areas with a unitary construction. Frederick Dec. at ¶ 84; Glidden at p. 1, 2:3-10; p. 1, 2:33-44; p. 1, 2:45-48; FIGS. 1, 6, 8. Grounds 16-17: **Glidden + other art** Uppers incorporating weft-knitted textile elements were well-known in the art at the time of the priority date of the '011 patent. *See* McDonald at p. 1, 2:26-39; Whiting at 2:39-56. Ground 18:

MR. KADABA: Objection to form.

A. I doubt it. Yeah, I doubt it very much. If they -- if 4 is made correctly and it's constructed in a way that it's reinforced along that edge, that shouldn't be a problem. It's a potential problem, but not a likely problem.

Q. And just to clarify your last testimony, you mentioned 4. Do you mean 40. You meant 40?

A. I meant 40, yeah.

Q. Have you ever seen an upper cut from a circularly knitted textile structure?

A. Well, I guess on video I have, yeah.

Q. You've not seen it in person.

A. No.

Q. When did you see this on video?

A. On -- on the Internet.

Q. When was this?

A. I think it was when the first Primeknit shoes were being introduced to the market right around the time of the Olympics in London, maybe after that, but I don't recall the exact date.

Q. And that's the Primeknit shoe, the adidas shoe?

A. That's correct.

Q. And when you saw this on the Internet this

was on a publicly accessible website?

A. Yes, it was. It was advertising, basically.

Q. And you believe that showed -- let me take a step back. My understanding is that what you saw was an adidas upper being cut from a circularly knit textile structure?

A. It may have been from a flat knitting machine. It was either flat or circular knitting piece that was then cut out with what looked like a laser or -- that's my recollection.

Q. Were you able to see on the Internet image that you viewed exactly what the edge looked like?

A. No.

Q. Did you -- why did you view that video on the Internet of the adidas Primeknit shoe being created?

A. Because it was wicked cool. It was really amazing.

Q. What did you do after you looked at that video on the Internet?

A. I tried to order a pair of the shoes, but no luck. They weren't available in the U.S., I guess, at that time, so...

Q. Let me take a step back. What caused you

is knitted on a circular knit machine, right?

A. That's the way it's described, yes.

Q. And I want to direct your attention now to Figure 8. I'll ask you some questions about Figure 8.

Now, Figure 8 is an example of an upper made on a flat knitting machine, right?

A. I don't think it specifies that it has to be a flat knitting machine, but -- I don't think the patent limits it that way, does it?

Q. Well, I guess I'm not asking you what it's -- the patent teaches you that what's shown in Figure 8 could be made on a flat knitting machine, right?

A. It could be, yes.

Q. And if the structure shown in Figure 8 was made by a flat knitting machine, then the edges that are shown in Figure 8 would be flat knitted, correct?

A. That's right.

Q. And edges that are flat knitted, would they require further processing before the edges were joined to form various seams?

MR. KADABA: Objection to form.

A. I don't know.

MR. VAN ES: I retract that. I think this is a good time for a break.

MR. KADABA: Okay.

THE VIDEOGRAPHER: The time is 2:14 p.m. and we are now off the record.

(Recess)

THE VIDEOGRAPHER: The time is 2:27 p.m. and we are now back on the record.

BY MR. VAN ES:

Q. Mr. Frederick, I want to direct your attention back to Nishida and ask you, does Nishida teach anything about forming apertures in the layout?

A. Hmm. I don't recall anything specifically teaching apertures, but there's certainly a lot of mention of breathability and the need to improve breathability.

Q. Okay. Let me direct your attention to a new exhibit, it's Exhibit 1007, Glidden US patent 2,147,197.

A. Okay.

Q. First, do you know whether Glidden was considered by the examiner in the original examination of the '011 patent?

A. It's a reference cited. It's a reference

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

adidas AG
Petitioner

v.

NIKE, Inc.
Patent Owner

Case IPR2013-00067
Patent 7,347,011 B2

DECLARATION OF RAYMOND F. TONKEL

I. BACKGROUND INFORMATION

A. Qualifications and Experience

1. My professional background and qualifications are set forth in my Curriculum Vitae, a copy of which is attached. I provide a summary of my background and qualifications below.

2. I have over thirty years of experience in the athletic and casual footwear industries. I have been directly involved with the conception, design and development of more than 500 new footwear products and have supervised the design and development of upwards of a thousand new footwear products. My experience includes direct participation in all aspects of the shoemaking process, including coming up with new product concepts, design, development, commercialization and manufacturing. My experience also includes the choice of materials, constructions and processes.

3. I am currently a partner in U-Turn Sports, Co., LLC, a company I helped establish to conceptualize and develop proprietary inventions for the footwear and related sports industries. I am also currently President of LEXZ9, Inc., a company that provides creative footwear solutions through innovative product design, research and development. Our clients have included numerous well-known companies who design and develop footwear, including Reebok, Keds, Teva, K-Swiss Clarks, Columbia Sportswear and Timberland.

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4. I previously worked as the Managing Director of Footwear Design at Reebok International from 1993-1998. My work at Reebok included supervising the design process for the complete range of Reebok footwear. I managed a group of over 45 designers, color and trend specialists as well as design support groups. I personally designed Reebok's first DMX technology footwear, and this footwear was Reebok's number one volume technology product in 1995 and 1996. In 1996, I received the Reebok Presidential Achievement Award.

5. I also worked at Rockport Corporation from 1991-1993, where I was Vice President, Design and Advanced Concepts. I was responsible for managing line direction, design and development of the complete range of Rockport footwear from conceptual design to final product. I also worked at Adidas USA from 1988-1990, where I was Vice President of Footwear Design and Development, and I was responsible for the complete range of Adidas USA footwear. My work at Adidas included global design and development responsibility for Adidas basketball, fitness, cross training and hard court tennis categories. I also worked at Kangaroos USA from 1984-1987, where I was Vice President of Research and Design. My work at Kangaroos included responsibility for all design of performance athletic products and technology including the patented Dynacoil. I also worked at NIKE, Inc. from 1980-1984, where I was a footwear designer and Advanced Concepts Product Manager. My work at NIKE included designing and developing advance

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concept performance and style components, systems and processes for casual, court and cleated shoe lines. I also directed the development and handled upper and sole design for various categories of footwear. My work also included designing some of the first AIR casual and running products for the NIKE brand.

6. I hold over 40 U.S. utility and design patents (alone or as co-inventor) relating to footwear and I have other applications pending relating to footwear. A list of those patents is included in my Curriculum Vitae.

7. I have been retained on behalf of the Patent Owner of U.S. Patent Number 7,347,011 ("the '011 Patent"), NIKE, Inc. ("NIKE") in connection with the Petition for *Inter Partes Review* of the '011 Patent ("Petition").

8. I understand that at the same time NIKE is submitting this Declaration, it is also filing a Motion to Amend the '011 Patent in which it is cancelling issued claims 1-46, and proposing substitute claims 47-50. I have been asked to offer an opinion regarding whether proposed substitute claims 47-50 are supported by the disclosure of the patent application that led to the issuance of the '011 Patent.

9. I have also been asked to offer my opinion regarding whether substitute claims 47-50 would have been anticipated by or rendered obvious to a person of ordinary skill in the art at the time of the invention of the '011 Patent in light of the prior art references relied on by Petitioner in the Petition ("Petition

> even greater number of textile elements 40 may be outlined on textile structure 60.
>
> … The types of stitches that form textile structure 60 may be varied to form an outline of one or more textile elements 40 on textile structure 60. That is, the wide-tube circular knitting machine may be programmed to form different types of stitches in textile structure 60 so as to outline one or more textile elements 40. Each textile element 40 is then removed from textile structure 60 with a die-cutting, laser-cutting, or other conventional cutting operation. Once textile element 40 is removed from textile structure 60, seams 51-54 may be formed and textile element 40 may be incorporated into footwear 10.

(Ex. 1002 at 7:41 – 8:14); (Ex. 1003 at 169-70 ¶¶45-47).

36. As Figure 9 and the above-quoted discussion illustrate, this embodiment is made using a circular knitting process and requires that the textile element [40] be formed as part of a larger textile structure [60]. Because this embodiment is formed as part of a larger textile structure, it requires additional processing to remove the textile element [40] from the textile structure [60]. (*E.g.*, (Ex. 1002 at 8:8-10); (Ex. 1003 at 170, ¶47) ("Each textile element 40 is then removed from textile structure 60 with a die-cutting, laser-cutting, or other conventional cutting operation."). One of the five independent claims in the '011 Patent is directed specifically to this embodiment. For example, claim 36 requires:

> 36. An article of footwear comprising: an upper incorporating a knitted textile element formed with a knitting machine, *the textile element being removed from a textile structure that includes an outline of the textile element*, and the textile element having edges that are joined together to define at least a portion of a void for receiving a foot, wherein the textile element incorporates a single type of textile

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having a plurality of knit constructions; and a sole structure secured to the upper.

(Ex. 1002 at 13:47 – 14:6) (emphasis added).

37. The '011 Patent makes it clear that the invention described in the specification also covers textile elements that are **not** formed as part of a larger textile structure from which they must be removed. For example, the '011 patent states that the "[t]extile element **may be** formed as a part of larger textile element [from which it is removed]." (Ex. 1002 at 5:43-45); (Ex. 1003 at 166, ¶35) (emphasis added). Moreover, the '011 Patent 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. Such examples are shown in Figures 8, 10 and 11. Figure 8 is reproduced below.

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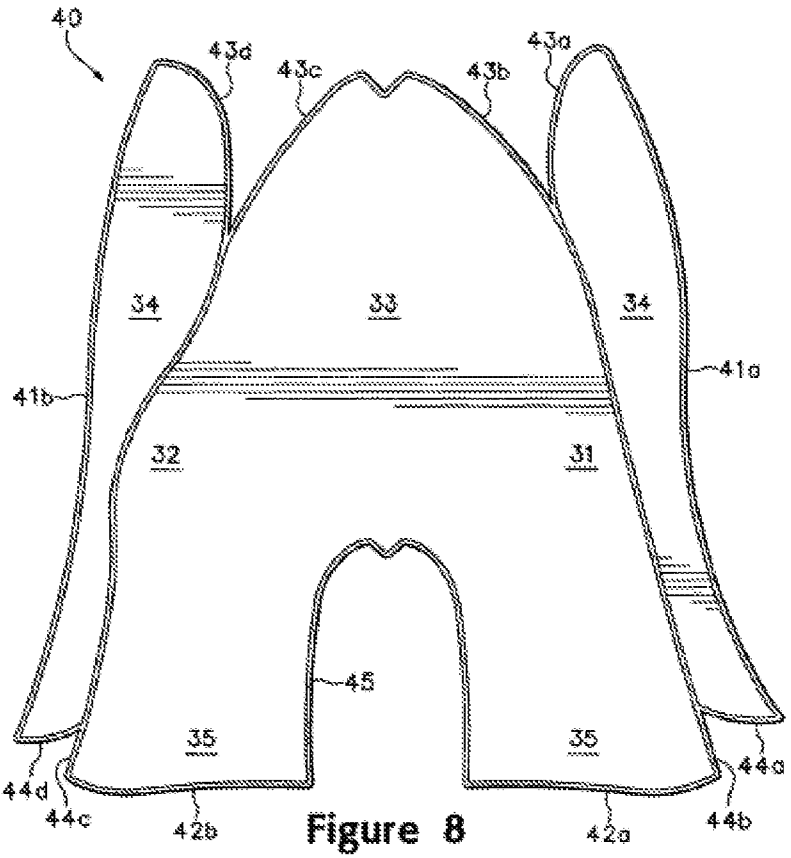


Figure 8

(Ex. 1002 at Fig. 8); (Ex. 1003 at 192).

38. The '011 Patent repeatedly discloses flat knitting as one way of making the textile element. (*E.g.*, Ex. 1002 at 7:5-8; Ex. 1003 at 168-69, ¶42 "With regard to weft knitting, various specific sub-types that may be utilized to manufacture a textile include circular knitting and flat knitting."; (Ex. 1002 at 10:8-14; Ex. 1003 at 173, ¶54 "The types of knitting that may be utilized to form different zones with different properties (e.g., yarn characteristics, textures, etc.) may vary significantly to include . . . flat knitting …"); (Ex. 1002 at 11:38-41, Ex. 1003 at 175-76, ¶59 "Similarly, other types of knitting, such as [] flat knitting, may be utilized within the scope of the present invention to impart various textures,

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different properties, or different yarn types to the textile element."); (Ex. 1002 at 12:32-33, Claim 15, "… the weft-knitted textile element is created by flat knitting."); (Ex. 1002 at 14:32-42, Claim 44, "… an upper incorporating a flat-knitted textile element, the flat-knitted textile element having …").

39. The '011 Patent thus makes it clear that the textile elements in Figures 8, 10 and 11 can be made using flat knitting. During his deposition, Petitioner's declarant (Mr. Frederick), agreed that the '011 Patent teaches that what is shown in Figure 8 can be made on a flat knitting machine. (Frederic Dep. Tr., Ex. 2009 at 116). The 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.

40. Moreover, one of ordinary skill in the art would understand that such textile elements knit to the shape of Figures 8, 10 and 11 using flat knitting would have flat knit edges because the edges, rather than being formed by cutting from a larger textile structure, are formed directly by the flat knitting machine. Such flat knit embodiments shown in Figures 8, 10 and 11 are consistent with independent claims in the '011 Patent such as issued independent claims 1, 16, 24 and 44, which can be made using flat knitting and (unlike issued claim 36) do not require removal of the textile element from a larger textile structure.

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41. Moreover, one of ordinary skill in the art would understand from the '011 Patent that if the textile element is cut from a surrounding textile structure, it would have cut edges (not knit edges) that would require further processing to finish the edges. (*See, e.g.*, '011 Patent, Ex. 1002 at 8:8-10; "Each textile element 40 is then removed from textile structure 60 with a die-cutting, laser-cutting, or other conventional cutting operation."); (Glidden, Ex. 1007 p. 2, ll. 43-63; "Where the cutting of the textile upper … leaves a raw textile edge which might ravel or fray, the edges may be protected, as by an overcast stitch …"); (Whiting, Ex. 1009 at 3:68 – 4:16; "[T]he last 16 may be provided with a guide groove 20 along which a cutter effects severance of portion 13 from the ultimate upper 11. … The shoe is now complete except for providing a finish for the contour edge of the upper. … [S]aid edge may be seared with a heated tool to fuse the fibers of the yarn along the severance line to coagulate the same and form a finishing bead 21. … Fig. 5 shows another edge-finishing method, the same entailing the application of a binding 22 by stitching, cementing or pasting the same in place.").

42. After a flat knit textile element such as that shown in Figure 8 is knit to shape, various flat knit edges of the element are joined together to form an upper. An example of the upper that is formed is shown in Figures 2-7 of the '011 Patent and '011 application. (Ex. 1002 at Figs. 2-7); (Ex. 1003 at 188-91). As shown in Figures 2 and 4 (which are reproduced below), the specification describes

the upper as having a lateral region [31], an opposite medial region [32], an instep region [33], a lower region [34], and a heel region [35], and an ankle opening [36]. (Ex. 1002 at 5:18-20, 6:22-24); (Ex. 1003 at 166, ¶ 34).

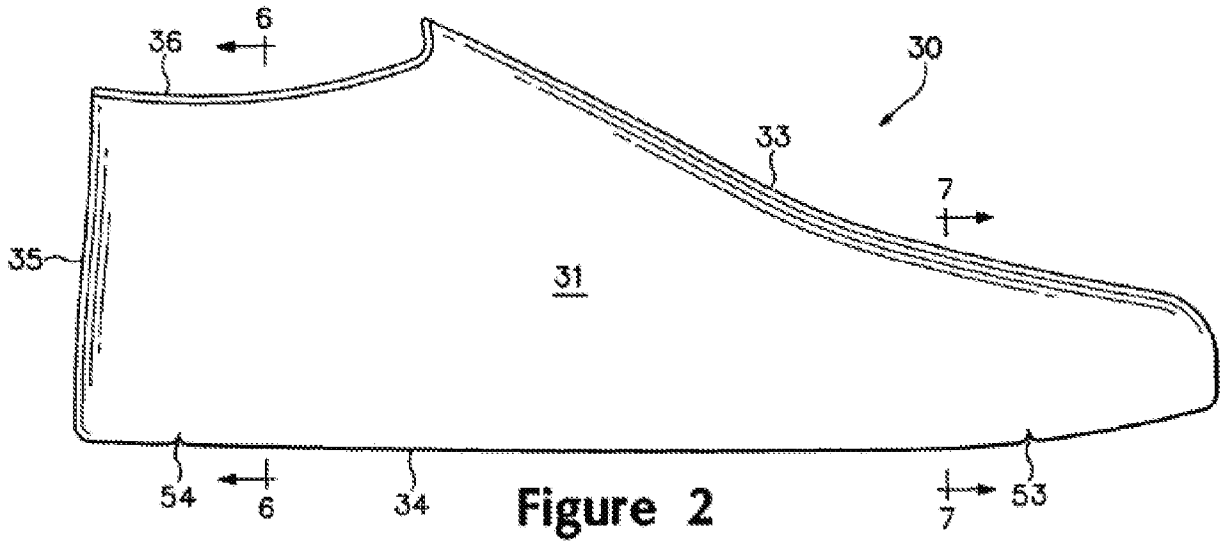


Figure 2

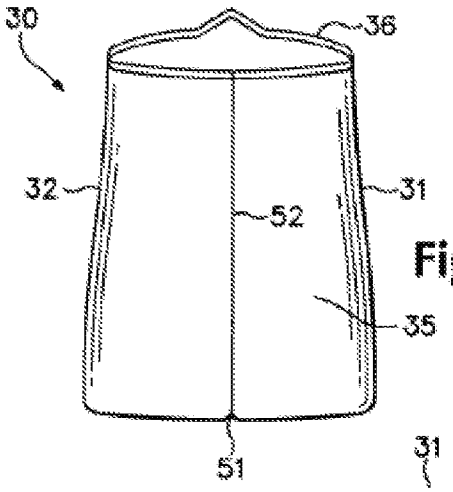


Figure 4

43. The '011 Patent describes how the generally planar textile element is formed into an upper as follows:

> Textile element 40 exhibits the general shape depicted in FIG. 8 prior to the formation of seams 51-54. Following formation of seams 51-54,

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discussed above, the embodiment described in Figure 9 (and claimed in issued claim 36) requires that "[e]ach textile element 40 [be] removed from textile structure 60 with a die-cutting, laser-cutting, or other conventional cutting operation." (Ex. 1002 at 8:8-10). In contrast, the embodiments shown in Figures 8, 10 and 11 are formed without a surrounding textile structure from which the textile element must be removed. Such embodiments are more efficient from a manufacturing perspective because they eliminate the additional "cutting operation" after knitting associated with the embodiment shown in Figure 9.

46. In addition, such embodiments are efficient because they also eliminate the extra processing steps associated with stabilizing the cut edges. (*E.g.*, Glidden, Ex. 1007 p. 2, ll. 43-63; "Where the cutting of the textile upper … leaves a raw textile edge which might ravel or fray, the edges may be protected, as by an overcast stitch …"); (Whiting, Ex. 1009 at 3:68 – 4:16; "[T]he last 16 may be provided with a guide groove 20 along which a cutter effects severance of portion 13 from the ultimate upper 11. … The shoe is now complete except for providing a finish for the contour edge of the upper. … [S]aid edge may be seared with a heated tool to fuse the fibers of the yarn along the severance line to coagulate the same and form a finishing bead 21. … Fig. 5 shows another edge-finishing method, the same entailing the application of a binding 22 by stitching, cementing or pasting the same in place."). Furthermore, such embodiments are

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environmentally beneficial because they reduce the expense and waste associated with the extra material that must be removed from the textile element.

47. As explained above, the '011 Patent describes that the textile element can be made using various different processes for mechanically manipulating yarns, including knitting. Knitting is commonly defined as a method of creating fabric by interlocking loops of one or more yarns. (*E.g.*, Ex. 2011 at 8). The '011 Patent uses the term "knitting" in a manner consistent with its common and ordinary meaning. For example, the '011 Patent states that "[i]nterlooping involves the formation of a plurality of columns of intermeshed loops, with knitting being the most common method of interlooping." (Ex. 1002 at 6:61-63; Ex. 1003 at 168, ¶ 41).

48. Knitting techniques can be divided into two main types: warp knitting and weft knitting. (*E.g.*, Ex. 2011 at 8). Warp knitting is a type of knitting in which multiple yarns with interlocking loops generally run lengthwise. (*Id.*). "Lengthwise" in this context refers to a machine direction, *i.e.*, a direction in which the warp knitted fabric grows as it is being knitted. This definition is consistent with the definition of warp knitting cited in the Board's decision, *i.e.*, "'[a] knitting process in which a group of yarns form rows running lengthwise by an interlocking process.'" (Decision at 14).

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intermeshed yarn loops. (*See, e.g.*, Ex. 1012 at 69). The '011 Patent uses the term "stitch" in a manner consistent with this common meaning. For example, the '011 Patent refers in several places to varying types of stitches within an element. (*E.g.*, Ex. 1002 at 9:7-12; Ex. 1003 at 172, ¶ 51). Normally, this refers to varying the manner in which loops are intermeshed.

IV. PERSON HAVING ORDINARY SKILL IN THE ART AT THE TIME OF THE INVENTION

52. It is my opinion that a person of ordinary skill in the art (POSITA) at the time of the invention for the '011 Patent would have a few years of experience with design and development of footwear and knowledge of textiles used in such footwear. For purposes of this proceeding, I have assumed that the invention date is around the filing date of the '011 application, *i.e.*, March 2004.

53. I have been informed that my comments and opinions regarding what is shown in the prior art should be from the perspective of one of ordinary skill in the art at the time of the invention.

V. SUPPORT IN ORIGINAL APPLICATION, AND CLAIM CONSTRUCTIONS, FOR PROPOSED SUBSTITUTE CLAIMS

54. I have been informed that NIKE is cancelling issued claims 1-46 in the '011 Patent, submitting one amended independent claim as a substitute for issued independent claim 16, submitting two amended dependent claims as substitutes for issued dependent claim 19, and submitting one amended dependent

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seams or other connections, as depicted with textile element 40 in Figure 8." (*Id.* at 15). I agree that the '011 Patent expressly defines the term "unitary construction" as set forth in the preceding sentence.

57. The PTAB further construed the complete phrase "the textile element having a first area and a second area with a unitary construction" to "require a textile element having a unitary construction and having a first area and a second area." (Decision at pp. 14-15). For purposes of this IPR proceeding, I agree with the Board's construction of this phrase.

2. "flat knit textile element"

58. Substitute claim 47 recites an article of footwear that comprises "an upper incorporating a flat knit textile element." This amended claim element is supported by the express language of the original '011 application. Paragraph [31] in the '011 application describes footwear 10 (a shoe) having a sole structure 20 and an upper 30, with "[u]pper 30 at least partially formed from a textile element 40. . ." (Ex. 1003 at 165, ¶ 31). The '011 application further describes an upper as incorporating a *flat knit* textile element. For example,

- originally filed claim 19 recites "[t]he article of footwear recited in claim 1 [i.e., "[a]n article of footwear comprising . . . an upper incorporating a textile element formed through a weft knitting process"], wherein the weft knitting process is flat knitting" (*Id.* at 179);

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- originally filed claim 38 recites that "the weft knitting process is one of circular knitting and flat knitting" (*Id.* at 181), and
- originally filed claim 65 recites "an upper incorporating a textile element formed through a flat knitting process." (*Id.* at 184).

59. Additional portions of the '011 application show that embodiments of the invention include uppers incorporating flat-knit textile elements. For example, paragraphs [42] and [43] describe element 40 being a flat knit element. (Ex. 1003 at 168-69; "With regard to weft knitting, various specific sub-types that may be utilized to manufacture a textile include circular knitting and flat knitting. . . . Textile element 40 may be formed through any of the mechanical processes discussed above."). In addition, paragraph [59] states that "other types of knitting, such as [] flat knitting, may be utilized within the scope of the present invention to impart various textures, different properties, or different yarn types to the textile element." (*Id.* at 175-76). Accordingly, the '011 application supports this amended claim element.

60. With regard to the proper construction of "flat knit textile element," these are commonly understood terms that should be given their ordinary and customary meaning. As I discussed above, in flat knitting a fabric is produced on a machine in generally flat form, with yarn alternating back and forth across the fabric. (*E.g.*, Ex. 2011 at 8). Moreover, a flat knit fabric is a fabric that has been

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knit on a flat knitting machine. (*E.g.*, Ex. 2011 at 6). Consequently, the term "flat knit textile element" should be construed as a textile element that has been flat knit. This construction is consistent with the support in the '011 application that I cited above.

3. "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"

61. Substitute claim 47 further recites a "flat knit textile (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". This amended claim element is also supported in the '011 application because, as discussed below, the '011 application describes embodiments in which a textile element has flat knit edges free of surrounding textile structure from which the flat knit textile element must be removed.

62. As previously discussed, the '011 application includes multiple different embodiments of the invention. One embodiment is shown in Figure 9 of the '011 application. (Ex. 1003 at 193). The '011 application explains that this embodiment is made using a circular knitting process and requires that the textile element [40] be formed as part of larger textile structure [60]. (Ex. 1003 at 169-70, ¶¶ 45-47). Because this embodiment is formed as part of a larger textile structure, it requires additional processing to remove the textile element [40] from the textile

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structure [60]. (*E.g.*, Ex. 1003 at 170, ¶ 47 ("Each textile element 40 is then removed from textile structure 60 with a die-cutting, laser-cutting, or other conventional cutting operation.")). One of the original independent claims in the '011 application is directed to this embodiment. In particular, original claim 41 required:

> 41. An article of footwear comprising:
> an upper incorporating a textile element formed with a knitting machine, the textile element being removed from a textile structure that includes an outline of the textile element, and the textile element having edges that are joined together to define at least a portion of a void for receiving a foot; and
> a sole structure secured to the upper.

(Ex. 1003, p. 181).

63. The '011 application makes it clear that the invention also includes embodiments in which uppers include textile elements that are not formed as part of larger textile structures from which they must be removed. For example, the '011 application states that the "[t]extile element *may be* formed as a part of larger textile element [from which it is removed]." (Ex. 1003 at 166, ¶ 35) (emphasis added). Moreover, the '011 application 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. Such examples are shown in Figures 8, 10 and 11. (Ex. 1003 at 192-95).

64. As described above, the '011 application repeatedly discloses flat knitting as one of the ways for making the textile element. The '011 application

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thus makes it clear that the textile elements in Figures 8, 10 and 11 can be made using flat knitting. During his deposition, Petitioner's declarant (Mr. Frederick), agreed that the '011 Patent teaches that what is shown in Figure 8 can be made on a flat knitting machine. (Ex. 2009 at 116). The disclosure in the '011 application 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 the figures (i.e., without surrounding textile structure) using flat knitting.

65. Moreover, one of ordinary skill in the art would understand that such textile elements knit to the shape of Figures 8, 10 and 11 using flat knitting would have flat knit edges because the edges, rather than being formed by cutting from a larger textile structure, are formed directly by the flat knitting machine. (*E.g.*, Ex. 2009 at 116). Such flat knit embodiments shown in Figures 8, 10 and 11 are consistent with independent claims submitted with the original application. For example, as-filed independent claims 19, 38 and 65, cover articles of footwear in which uppers include textile elements made using flat knitting. (Ex. 1003 at 179-84). Unlike as-filed claim 41, however, these as-filed claims do not require removal of those textile elements from larger textile structures. As I understand patent claims, this means that these original claims had scopes that include footwear with uppers that incorporate flat knit textile elements that are not

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removed from larger textile structures. This indicates to me that the inventors thus contemplated such footwear as part of their invention.

66. Moreover, one of ordinary skill in the art would understand from the '011 application that if the textile element is cut from a surrounding textile structure, it would have cut edges (not knit edges) that would require further processing to finish the edges. (*See*, *e.g.*, Ex. 1003 at 170, ¶ 47; "Each textile element 40 is then removed from textile structure 60 with a die-cutting, laser-cutting, or other conventional cutting operation."); (*see also* Glidden, Ex. 1007 p. 2, ll. 43-63; "Where the cutting of the textile upper … leaves a raw textile edge which might ravel or fray, the edges may be protected, as by an overcast stitch …"); (Whiting, Ex. 1009 at 3:68 – 4:16; "[T]he last 16 may be provided with a guide groove 20 along which a cutter effects severance of portion 13 from the ultimate upper 11. … The shoe is now complete except for providing a finish for the contour edge of the upper. … [S]aid edge may be seared with a heated tool to fuse the fibers of the yarn along the severance line to coagulate the same and form a finishing bead 21. … Fig. 5 shows another edge-finishing method, the same entailing the application of a binding 22 by stitching, cementing or pasting the same in place.")).

67. Thus, the '011 application describes an embodiment in which an article of footwear includes an upper incorporating a flat knit textile element, with

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the flat knit textile element 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.

68. Finally, with regard to the proper construction of the phrase "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", this phrase should be construed as requiring that edges of the textile element have flat knit edges without surrounding textile structure such that the flat knit edges are not surrounded by textile structure from which the textile element must be removed. This construction is consistent with the support in the '011 application that I discuss in the preceding paragraphs.

4. "flat knit textile element (1) having… some of the flat knit edges joined together to form an ankle opening in the upper for receiving a foot"

69. Substitute claim 47 further recites a "flat knit textile element (1) having … some of the flat knit edges joined together to form an ankle opening in the upper for receiving a foot." This amended claim element is also supported in the '011 application. For example, the '011 application states:

> Textile element 40 exhibits the general shape depicted in FIG. 8 prior to the formation of seams 51-54. Following formation of seams 51-54, however, textile element 40 exhibits the shape of upper 30 depicted in FIGS. 2-7. Seams 51-54 are formed by securing various edges of textile element 40 together. …

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> Textile element 40, as depicted in FIG. 8, has a generally planar configuration. Upon the formation of seam 51, however, one portion of textile element 40 overlaps the other portion of textile element 40. The volume between the overlapping portions effectively forms a portion of the void within upper 30 for receiving the foot.
>
> The folding or overlapping of textile element 40 to form seam 51 places edge 42a adjacent to edge 42b, which facilitates the formation of seam 52. With reference to FIG. 8, an edge 45 forms a generally u-shaped area in textile element 40. Upon the joining of edges 42a and 42b to form seam 52, the u-shaped area becomes an aperture in textile element 40 and effectively forms ankle opening 36.

(Ex. 1003 at 167-68, ¶¶36-39).

70. The ankle opening 36 and the seam 52 (formed by joining edges 42a and 42b) are illustrated below in Figure 4 of the '011 application:

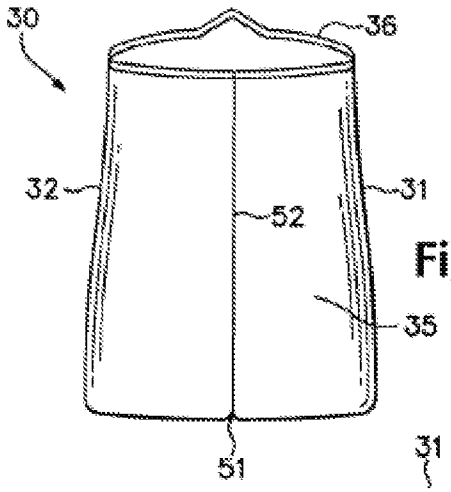


Figure 4

(Ex. 1003 at 190).

71. With regard to the proper construction of the phrase "flat knit textile element (1) having… some of the flat knit edges joined together to form an ankle opening in the upper for receiving a foot", the phrase uses words commonly

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understood that are neither unfamiliar nor confusing. Such words do not need clarification and should be given their ordinary and customary meaning. Therefore, the phrase should be construed as follows: "flat knit textile element having (1)… some of the flat knit edges joined together to form an ankle opening in the upper for receiving a foot." This construction is consistent with the support in the '011 application that I discuss in the preceding paragraphs.

5. "the ankle opening having an edge comprised of one of the flat knit edges"

72. Substitute claim 47 further recites "the ankle opening having an edge comprised of one of the flat knit edges." This amended claim element is also supported in the '011 application. For example, as I described above in connection with the limitation reciting "… flat knit edges …", one of ordinary skill in the art would understand that textile elements knit to the shape of Figures 8, 10 and 11 using flat knitting would have flat knit edges. Referring to Figure 8, one of the flat knit edges formed by the flat knitting machine is the edge [45] that forms a generally u-shaped area. As explained by the '011 application:

> With reference to Fig. 8, an edge 45 forms a generally u-shaped area in textile element 40. Upon the joining of edges 42a and 42b to form seam 52, the u-shaped area becomes an aperture in textile element 40 and effectively forms ankle opening 36.

(Ex. 1003 at 167, ¶ 38).

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73. Thus, the '011 application teaches an ankle opening having an edge comprised of one of the flat knit edges.

74. With regard to the proper construction of the phrase "the ankle opening having an edge comprised of one of the flat knit edges," the phrase uses words commonly understood that are neither unfamiliar nor confusing. Such words do not need clarification and should be given their ordinary and customary meaning. Therefore, the phrase should be construed as follows: "the ankle opening having an edge comprised of one of the flat knit edges, i.e., one of the previously recited edges that is not surrounded by textile structure from which the textile element must be removed." This construction is consistent with the support in the '011 application that I discuss in the preceding paragraphs.

6. The '011 application Supports Substitute Claim 47 As a Whole

75. As explained above, the '011 application provides support for features of substitute claim 47 that represent amendments to issued claim 16. The '011 application also supports claim 47 as a whole. Figures 1-7 and the corresponding description discussed above contemplate incorporation into an upper a textile element in the form shown in one of Figures 8, 10 or 11. As indicated above, the '011 application discloses that such textile elements can, in some embodiments, be flat knit as recited in claim 47. Incorporating a flat knit textile element having the shape shown in any of Figures 8, 10 and 11 into an article of footwear as shown in

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Figures 1-7 results in an article of footwear having the features of substitute claim 47.

B. Support and Claim Construction For Proposed Substitute Dependent Claim 48

76. Substitute claim 48 amends issued claim 19 as follows:

> **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 configuration 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.

77. The amended claim element in this substitute dependent claim is supported in the '011 application. For example, the '011 application includes the following passages that describe the amended features recited in this substitute claim: "[u]pper 30 is depicted . . . as having a lateral region 31, an opposite medial region 32, an instep region 33, a lower region 34, and a heel region 35." (Ex. 1003 at 166, ¶ 34); "Upper 30 is at least partially formed from textile element 40, which forms regions 31-35." (*Id.* at 166, ¶ 35); "Textile element 40 exhibits the general shape depicted in Figure 8 prior to the formation of seams 51-54. Following formation of seams 51-54, however, textile element 40 exhibits the shape of upper 30 depicted in Figures 2-7. Seams 51-54 are formed by securing various edges of textile element 40 together." (*Id.* at 167, ¶ 36)

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78. With regard to the proper construction of the amended language, the phrase "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" uses words commonly understood that are neither unfamiliar nor confusing. Such words do not need clarification and should be given their ordinary and customary meaning. Therefore, the phrase should be construed as follows: "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." This construction is consistent with the support in the '011 application that I discuss in the preceding paragraphs.

79. As explained above, the '011 application provides support for features of substitute claim 48 that represent amendments to issued claim 19. The '011 application also supports claim 48 as a whole. Incorporating a flat knit textile element having the shape shown in any of Figures 8, 10 and 11 into an article of footwear as shown in Figures 1-7 results in an article of footwear having the features of substitute claim 48.

C. Support and Claim Construction For Proposed Substitute Dependent Claim 49

80. Substitute claim 49 amends issued claim 19 as follows:

> **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

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> apertures formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces.

81. The amended claim language is supported in the '011 application. For example, the '011 application describes a textile element like element 40 that includes apertures as recited in substitute claim 49:

> An article of footwear 110 is depicted in Fig. 12 and includes a sole structure 120 and an upper 130. Upper 130 includes a textile element 140 having the general configuration of textile element 40. . . . In addition, upper 130 includes a lace 131 and a plurality of elements 132-135 that also form a portion of the exterior surface. Lace 131 extends through a plurality of apertures formed in textile element 140. The apertures may be formed by omitting stitches at specific locations.

(Ex. 1003 at 173-74, ¶ 55).

82. Figure 12, which is referenced in the preceding paragraph, is reproduced below.

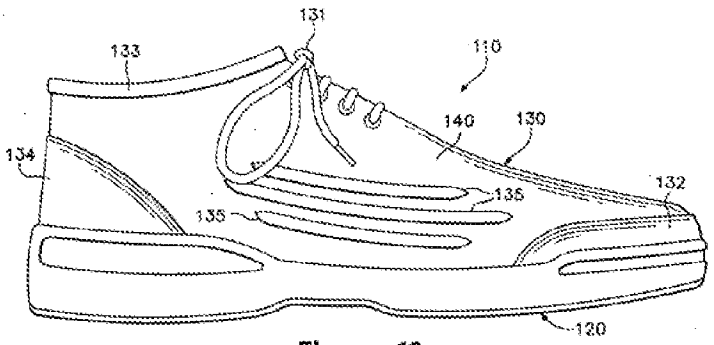


Figure 12

(Ex. 1003 at 196).

83. With regard to the proper construction of the amended language, the phrase "a plurality of apertures in the flat knit textile element, the apertures formed

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by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces" uses words commonly understood that are neither unfamiliar nor confusing. For example, the term "aperture" is a commonly understood word that means "an opening, as a hole, slit, crack, gap, etc." (Ex. 2012 at 3; *Random House Webster's Unabridged Dictionary*, p. 97 (2nd Ed. 2001)). Such words do not need clarification and should be given their ordinary and customary meaning. Therefore, the phrase should be construed as follows: "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". This construction is consistent with the support in the '011 application that I discuss in the preceding paragraphs.

84. As explained above, the '011 application provides support for features of substitute claim 49 that represent amendments to issued claim 19. The '011 application also supports claim 49 as a whole. Incorporating a flat knit textile element having the shape shown in any of Figures 8, 10 and 11 into an article of footwear as shown in Figures 1-7 results in an article of footwear having the features of substitute claim 49.

D. Support and Claim Construction For Proposed Substitute Dependent Claim 50

85. Substitute claim 50 amends issued claim 20 as follows:

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> **Claim 50.** (Substitute for dependent claim 20) The article of footwear recited in claim 16, wherein the [weft-knitted] 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.

86. The amended claim element in this substitute dependent claim is similar to the amended claim element in substitute dependent claim 48. Consequently, the amended claim element in substitute claim 50 is supported in the '011 application for the same reasons discussed above in connection with substitute claim 48.

87. With regard to the proper construction of the amended language, the phrase "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" should be given the same construction discussed above in connection with the same phrase that appears in substitute claim 48. In particular, the words do not need clarification and should be given their ordinary and customary meaning, *i.e.*, "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."

88. As explained above, the '011 application provides support for features of substitute claim 50 that represent amendments to issued claim 20. The '011 application also supports claim 50 as a whole. Incorporating a flat knit textile element having the shape shown in any of Figures 8, 10 and 11 into an article of

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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 …"

101. While Nishida has general references to knitting, Nishida does not specify either warp knitting or weft knitting. (*E.g.*, Ex. 1005 at 3:6-12). Nishida also does not specifically refer to flat knitting. (*Id.*). In addition, as the Board acknowledges, "Nishida is directed to the production of a shoe upper by (1) cutting out a layout in the form of the shoe upper from a web of material …" (Decision at 17-18). Because Nishida's "layout" is made as part of a larger textile structure or web and must be cut out of the web, Nishida's "layout" has a structure that is distinct from that of the textile element recited by substitute claim 47. In particular, the textile yarns forming the edges of Nishida's layout, even if formed by knitting, must be individually broken as the layout is cut out of the web that completely surrounds the layout. Nishida does not actually describe how this cutting operation is conducted. However, as noted in the '011 patent, a textile element can be removed from a surrounding textile structure with a die-cutting, laser-cutting, or other conventional cutting operation. (Ex 1002, 8:8-10).

102. Nishida also does not expressly describe how the cut edges are processed prior to the step in which the as-cut layout is shaped in the form of a shoe upper by connecting certain edges to form seams. However, in the absence of any processing, the prior art recognizes that such edges would be prone to fraying

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and, in a weft knit structure, would even be susceptible to unraveling. For example, Glidden explains:

> [T]he upper may be slit as at 22, preferably after vulcanization, to provide a vent extending from the top of the shoe to the instep in a forward direction … Where the cutting of the textile upper, to provide the slit 22, or for any other purpose, leaves a raw textile edge which might ravel or fray, the edges may be protected, as by an overcast stitch 26, as illustrated in Fig. 5, where the stitch is shown as extending not only along the margins of the slit, but also along the top margin of the upper at the leg opening.

(Ex. 1007 p. 2, ll. 43-63).

103. Similarly, Whiting explains that:

> As shown in Fig. 1, the last 16 may be provided with a guide groove 20 along which a cutter effects severance of portion 13 from the ultimate upper 11. If desired, the last may terminate along the line of groove 20, in which case, the top of the last will serve to guide a severing cutter. … The shoe is now complete except for providing a finish for the contour edge of the upper. As shown in Fig. 4, said edge may be seared with a heated tool to fuse the fibers of the yarn along the severance line to coagulate the same and form a finishing bead 21. … Fig. 5 shows another edge-finishing method, the same entailing the application of a binding 22 by stitching, cementing or pasting the same in place. Since binding-applying machines are available, the latter edge-finishing step can be effectively accomplished.

(Ex. 1009 at 3:68 – 4:16).

104. Consequently, a person of ordinary skill in the art would readily have understood that the cut edges of the Nishida layouts would need to be treated to stabilize and secure the edges before any additional processing.

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105. Regardless of how Nishida's overall web and associated layouts are constructed, however, edges of a layout (or textile element) that are first cut and then stabilized such as required by Nishida, have a significantly distinct structure from flat knit edges formed directly as a consequence of knitting the textile element in its final shape. Flat knit edges inherently have a stable configuration where the stitches of yarn at the edges of the textile element are unbroken and joined from one row to the next row. Segments of yarn forming edges of the textile element retain their integrity. Examples of this are shown in several Figures of the Spencer textbook relied on by Petitioner as Exhibit 1012:

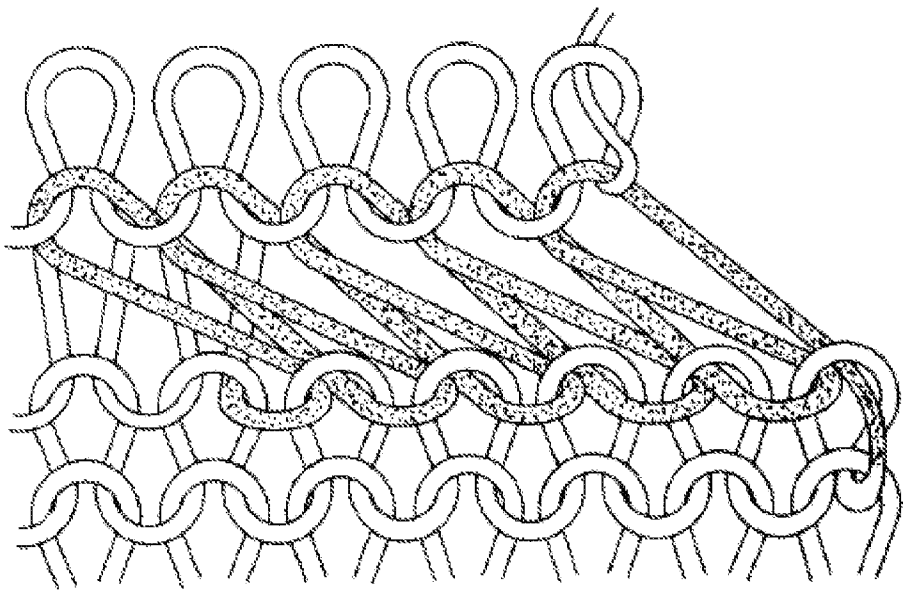


Fig. 16.7 Wale fashioning (narrowing).

(Ex. 1012 at 211)

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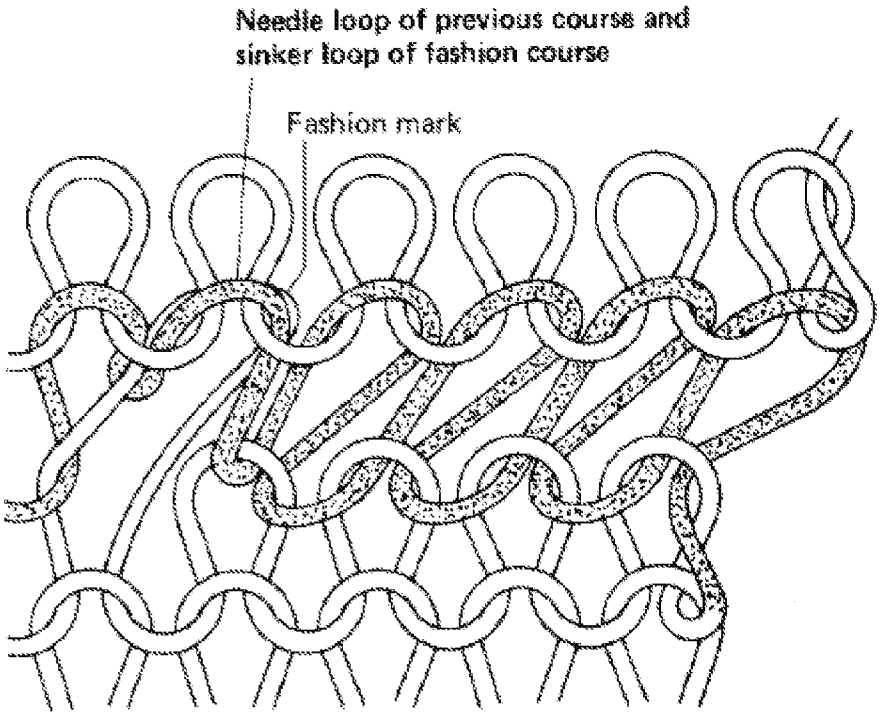
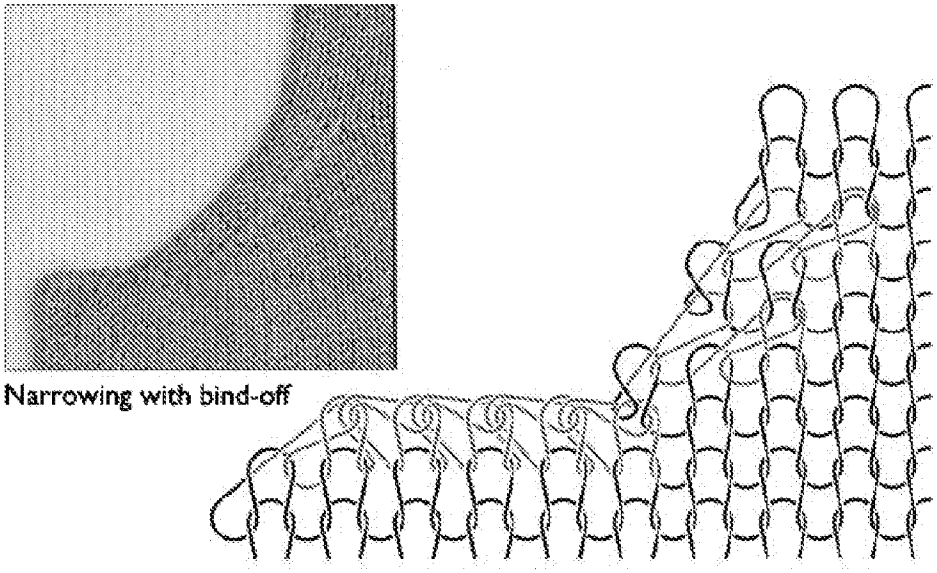


Fig. 16.8 Wale fashioning (widening).

(Ex. 1012 at 212)



(Ex. 1012 at 214) (top portion of figure 16.10)

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106. As a result, the footwear article defined by substitute claim 47, and the substitute claims dependent on substitute claim 47, are novel over Nishida (*i.e.*, claims 47-50 are not anticipated by Nishida).

107. With regard to substitute claim 49, 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. Accordingly, because Nishida does not describe the additional requirements recited in substitute claim 49, this substitute claim is not anticipated by Nishida for these additional reasons.

2. Substitute Claims 47-50 Would Not Have Been Obvious In View of Nishida Alone Or Combined With McDonald, Whiting or Curley

108. It is also my opinion that the substitute claims would not have been obvious based on Nishida alone. In its decision, the Board found as follows with respect to Nishida:

> Petitioner contends that claims 1-16 and 19-46 are rendered obvious by Nishida.

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particular, Nishida indicates the German patent formed its textile web by weaving strips having different properties completely across its cross-section. According to Nishida, patterns in the shape of upper elements were then printed on the web and were subsequently cut-out from the web. Nishida asserted that with this approach textile material in the area between the individual upper elements was wasted. Nishida further observed that, according to the German patent, this wasted textile material constituted the same valuable textile material used to form the uppers. Nishida attempted to avoid this waste by using "simple, lightweight and inexpensive material" to form those portions of the web not constituting the layouts for the uppers. According to Nishida, this approach minimizes the waste of valuable textile material. However, Nishida's solution also is imperfect.

111. First, Nishida does nothing to eliminate the added processing also required by the cited German patent that is associated with the steps of cutting the layout from a web of material, and then finishing the cut edges. In addition, Nishida only partially addresses the problem of material waste. Just like the German prior art, Nishida's article is made by a subtractive process. The portion of the textile web not constituting a layout is wasted, just as it was wasted in the prior art. While Nishida contends that there is a cost savings because the material wasted is not as valuable as the material retained, there nonetheless remain the problems of additional processing and wasted material associated with the article.

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112. In contrast, the flat knit upper described in the substitute claims is made by an additive process. Such an additive process avoids the added processing steps associated with cutting and then finishing the cut edges, as well as the wasting of textile material. The article of the substitute claims accomplishes these improvements by virtue of its textile element having flat knit edges – an entirely different structure than the cut edges in Nishida that must be finished and result in wasting of material. In sum, there was no teaching, suggestion, 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 achieve the inventions described in substitute claims 47-50.

113. As discussed above, dependent substitute claim 49 includes additional limitations that are not disclosed in Nishida, *i.e.*, "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." Nishida contains no description or suggestion of forming such openings by omitting stitches in the upper and positioning them in the upper for receiving laces. Moreover, there was 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 that has been added to substitute dependent claim 49. Consequently, the additional feature added to this substitute dependent claim provides further

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D. Substitute Dependent Claims 48 and 49 Are Patentably Distinct From One Another

169. I have been informed that when a patent owner proposes more than one substitute claim for any one 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. As explained above, I understand that NIKE is proposing two substitute dependent claims (*i.e.*, substitute dependent claims 48-49) for issued claim 19. For reasons that include the reasons set forth below, it is my opinion that substitute claims 48 and 49 are patentably distinct relative to one another.

170. It is my understanding that, when evaluating the patentable distinctiveness of two claims, I should consider whether the recitations of one claim anticipate or render obvious the recitations of the other claim. The recitations of a dependent claim include what is recited by that dependent claim, as well as what is recited in claims from which that dependent claim depends. Because substitute claim 48 and substitute claim 49 both depend from substitute claim 47, each of substitute claims 48 and 49 includes the recitations of substitute claim 47.

171. It is also my understanding that, when evaluating the obviousness of substitute claim 48 relative to substitute claim 49, I should (solely for purposes of this analysis) treat substitute claim 49 as prior art and consider the teachings of

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substitute claim 49 in view of the teachings of other prior art. It is my further understanding that, when evaluating the obviousness of substitute claim 49 relative to substitute claim 48, I should (solely for purposes of this analysis) treat substitute claim 48 as prior art and consider the teachings of substitute claim 48 in view of the teachings of other prior art.

172. I understand that, when evaluating the patentable distinctiveness of substitute claims 48 and 49 relative to one another, I should use the same claim constructions that I used in my previous analyses described above.

173. With regard to substitute dependent claim 48, this claim recites "[t]he article of footwear recited in claim 47, wherein . . . 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."

174. Substitute claim 48 is not anticipated by substitute claim 49. Neither substitute claim 49 nor its parent substitute claim 47 recites "joined edges [that] shape the flat knit textile element to form a lateral region, a medial region, an instep region and a heel region of the upper," and this feature is not inherent in claim 47 or claim 49. Moreover, substitute claim 48 is not obvious over substitute claim 49. Claim 49 does not recite additional features relating to joined edges of the textile element. Substitute claim 47, from which claim 49 depends, recites "some of the flat knit edges joined together to form an ankle opening in the upper

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for receiving a foot." However, a textile element having flat knit edges joined together to form an ankle opening does not teach an element in which joined edges shape the element in multiple regions as recited in substitute claim 48. This is true even when substitute claim 49 is considered in view of Nishida or Osamu. Nishida shows a "layout of a shoe upper" having edges that are sewn together to create an upper, but that layout is part of a surrounding textile structure from which it must be removed. Osamu shows a "main uppers material," but shows it as part of a "foundation cloth" from which it must be removed. A layout (or main uppers material) that that must be removed from a larger textile element does not suggest modifying a flat knit textile element to have the shape of that removed layout.

175. With regard to substitute dependent claim 49, this claim recites "[t]he 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."

176. Substitute claim 49 is not anticipated by substitute claim 48. Neither substitute claim 48 nor its parent substitute claim 47 recites "apertures formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces," and this feature is not inherent in substitute claim 47 or substitute claim 48. Moreover, substitute claim 49 is not obvious over substitute claim 48.

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Substitute claim 48 recites "wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture." Even in view of the Petitioner Prior Art and other prior art of record cited during prosecution of the '011 Patent, however, this fails to teach or suggest apertures that are "formed by omitting stitches" and that are also "positioned in the upper for receiving laces."

E. Secondary Considerations

177. I understand that objective or secondary consideration factors can be considered when assessing whether an invention would have been obvious. I understand that one of those factors supporting non-obviousness is a long felt need for the invention. It is my opinion that there was a long felt need for the invention described in substitute claim 47.

178. Nishida shows that reducing material waste during manufacture of textile footwear uppers was a long-felt need. Nishida asserted that "with the known material [as described in German Patent No. 627878] that has crosswise strips, the entire cutting waste . . . consists of an expensive tubular material, multilayer material or the like." (Ex. 1005, 2:22-25). Over thirty years after that German Patent, Nishida's response to this problem was to make the "cutting waste" a simpler, lighter or cheaper material. (*Id.* at 2:15-18). Even if one assumes that Nishida teaches flat knitting of his "web" with multiple "layouts", however, this underlying problem remained. In particular, manufacturing uppers

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from flat textile elements still resulted in material that must be wasted when a flat textile element is cut from a "web of material." Over ten years then elapsed between Nishida and the filing of the '011 patent application. 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.

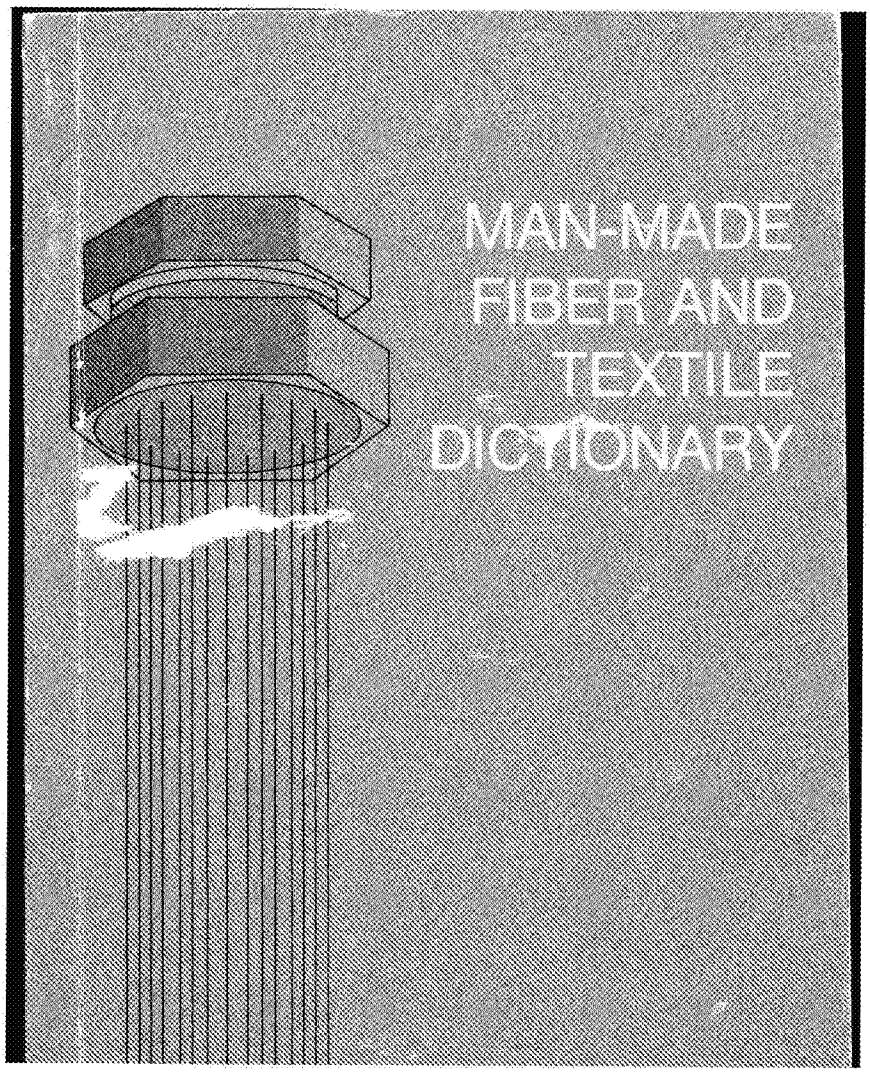
179. Therefore, for at least these reasons, the objective factor of long felt need for the invention supports the non-obviousness of the inventions described in substitute claim 47, and the claims dependent thereon, *i.e.*, substitute claims 48-50.

VII. THE PROPOSED SUBSTITUTE CLAIMS ARE PATENTABLY DISTINCT FROM THE OTHER PRIOR ART CITED DURING PROSECUTION OF THE '011 PATENT

180. During prosecution of the '011 Patent, the PTO cited numerous prior art references in connection with its consideration of the patentability of the issued claims. The references cited by the PTO are listed on the first and second pages of the '011 Patent in the section entitled "References Cited." (Ex. 1002 at 1-2).

181. In its Petition, the Petitioner relies on four of the prior art references cited on pages 1 and 2 of the '011 Patent; namely, Nishida, Glidden, Curley and Shiomura. I reviewed the other prior art references cited on pages 1 and 2 of the

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MAN-MADE
FIBER AND
TEXTILE
DICTIONARY

KNITTING: A method of constructing fabric by interlocking series of loops of one or more yarns. The two major classes of knitting are warp knitting and weft knitting, as follows:

1. Warp Knitting: A type of knitting in which the yarns generally run lengthwise in the fabric. The yarns are prepared as warps on beams with one or more yarns for each needle. Examples of this type of knitting are tricot, milanese, and raschel knitting.

Milanese Knitting: A type of run-resistant warp knitting with a diagonal rib effect using several sets of yarns.

Raschel Knitting: A versatile type of warp knitting made in plain and Jacquard patterns; the latter can be made with intricate eyelet and lacy patterns and is often used for underwear fabrics. Raschel fabrics are coarser than other warp-knit fabrics, but a wide range of fabrics can be made. Raschel knitting machines have one or two sets of latch needles and up to thirty sets of guides.

Tricot Knitting: A run-resistant type of warp knitting in which either single or double sets of yarn are used. (Also see TRICOT.)

2. Weft Knitting: A common type of knitting, in which one continuous thread runs crosswise in the fabric making all of the loops in one course. Weft knitting types are circular and flat knitting.

Circular Knitting: The fabric is produced on the knitting machine in the form of a tube, the threads running continuously around the fabric.

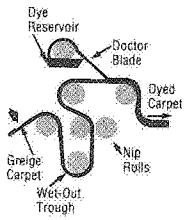
Flat Knitting: The fabric is produced on the knitting machine in flat form, the threads alternating back and forth across the fabric. The fabric can be given shape in the knitting process by increasing or decreasing loops. Full-fashioned garments are made on a flat-knitting machine. (Also see FLAT-KNIT FABRIC.)

KRAFTCORD: This yarn produced by tightly twisting plant fiber is sometimes used in carpet backings.

KRAFT PULPS: Pulps prepared in the alkaline liquor consisting of sodium hydroxide, sodium carbonate, and sodium sulfide. Also called sulfate pulp.

KRAFT YARN: A yarn made by twisting a strip of paper manufactured from kraft pulp.

KÜSTERS DYEING RANGE: Continuous dye range for carpets. The unit wets the carpet, applies dyes and auxiliary chemicals by means of a doctor blade, fixes the dyes in a festoon steamer, and washes and dries the carpet in one pass through the range. An optional auxiliary unit may be installed to randomly drip selected dyes onto the background shade for special styling effects. This process is called TAK dyeing.



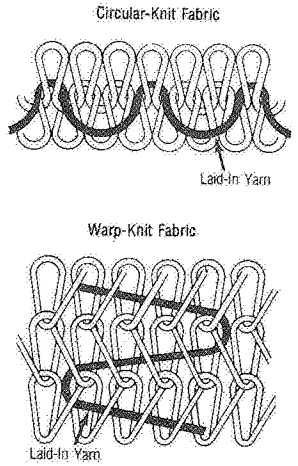
Küster Carpet Dyeing Range

L

LACE: Ornamental openwork fabric, made in a variety of designs by intricate manipulation of the fiber by machine or by hand.

LACE STITCH: In this knitting stitch structure, loops are transferred from the needles on which they are made to adjacent needles to create a fabric with an open or a raised effect.

LAID-IN FABRIC: A knit fabric in which an effect yarn is tucked in, not knitted in, the fabric structure. The laid-in yarns are held in position by the knitted yarns.



Laid-In Constructions

LAMÉ: A fabric woven with flat metal threads, usually silver or gold, which form either the background or the pattern.

LAMINAR FLOW: Streamline flow in a viscous fluid, such as molten polymer, near a solid boundary.

LAMINATED FABRIC: See BONDED FABRIC, 1.

LAP: A continuous, considerably compressed sheet of fibers which is rolled under pressure into a cylindrical package, usually weighing between 40 and 50 pounds. The lap is used to supply the card.

LAPPING: A term describing the movement of yarn guides between needles, at right angles to the needle bar, or laterally in relation to the needle bar during warp knitting.

LAP SPLITTING: A condition caused by a lap which will not unwind in carding in the same thickness as it was wound in picking. This splitting of the sheet of fiber can result in either a thicker or thinner sheet being fed into the card.

LASE: An acronym for load at specified elongation: the load required to produce a given elongation of a yarn or cord.

LASER: A device for producing an intense beam of coherent light. It is used for cutting, spectroscopy, photography, biomedical investigations, etc.

LASHED-IN FILLING: See PULLED-IN FILLING.

LASTRILE FIBER: A manufactured fiber in which the fiber-forming substance is a copolymer of acrylonitrile and a diene composed of at least 10% by weight but not more than 50% by weight of acrylonitrile (—CH_2—CHCN—) units (FTC definition).

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Case: 14-1719 Document: 41 Page: 349 Filed: 06/08/2015

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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adidas AG
Petitioner

v.

Nike, Inc.
Patent Owner

Patent No. 7,347,011
Filing Date: March 3, 2004
Issue Date: March 25, 2008
Title: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

Inter Partes Review No. 2013-00067

PETITIONER'S OPPOSITION TO PATENT OWNER'S MOTION TO AMEND

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I. The Proposed Substitute Claims Improperly Enlarge the Scope of the Original Claims.

Nike's proposed amendments include the substitution of the term "flat knit textile element" in claim 47 in place of "weft-knitted textile element" in original claim 16, and Nike asserts that the use of "flat knit" is a narrowing amendment because the specification describes flat knitting as a sub-type of weft knitting. (Paper 31, pp. 3-4; Ex. 2010, ¶¶ 38-39, 58-59.) However, Nike fails to provide a specific claim construction for this term.

Petitioner submits, for the purposes of the IPR only, that the claim terms are presumed to take on their broadest reasonable interpretation in view of the specification of the '011 patent.[1] While the specification describes flat-knitting as a sub-type of weft knitting, the specification does not define "flat knit," "flat knit textile," or "flat knitting," or otherwise state that flat knitting is *exclusively* a sub-type of weft knitting. (Ex. 1015, pp. 34-36.) Indeed, a person of ordinary skill in the art ("POSITA") at the time of the priority date of the '011 patent would understand that, under the broadest reasonable interpretation, a flat knit textile element refers to a knitted textile that is knit in flat form, which necessarily covers other

[1] Other forums, such as U.S. district courts, required different standards of proof and claim interpretation that are not applied by the PTO for *inter partes* review. Accordingly, any interpretation or construction of the challenged claims in this IPR, either implicitly or explicitly, is not binding on Petitioner in any future litigation related to the '011 patent. *See In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).

types of knitted textiles, in addition to *weft knitted textiles*, that are knit in flat form. (Ex. 1016, ¶¶ 36-37.) The Board has yet to provide a construction of "flat knitting," and the Board's construction of "weft knitting" and "warp knitting" does not indicate that "flat knit" is exclusively a sub-type of "weft knitting." As such, a broadest reasonable interpretation of "flat knit" encompasses "a knitted textile that is knit in flat form," which is entirely consistent with Nike's own statement that "[t]he proposed substitute claim language uses commonly understood terms that should be given their ordinary and customary meaning." (Paper 31, p. 3; Ex. 2010, ¶¶ 60, 68, 71, 74, 78, 83, 87; Ex. 1016, ¶¶ 36-37.)

Because claim 47, if allowed, would cover other types of knitted textiles, in addition to *weft knitted textiles*, that are knit in flat form under the broadest reasonable interpretation of "flat knit textile element," claim 47 would cover an article of footwear that is not covered by claim 16. Therefore, Nike's substitute claim 47 improperly enlarges the scope of the original claim. *See* 37 C.F.R. § 42.221(a)(2)(ii); 35 U.S.C. § 132(a); *Quantum Corp. v. Rodime, PLC*, 65 F.3d 1577, 1580 (Fed. Cir. 1995) (amended or new claim is enlarged if it includes any subject matter that would not have infringed original patent; claim is broader than original claims if it is broader in *any* respect, even if narrower in other respects). The Board recently provided the following guidance:

> Specifically, with regard to 37 C.F.R. § 42.121(a)(2)(i), a proposed substitute claim is not responsive to an alleged ground of unpatentability of a challenged claim if it does not either include or narrow each feature of the challenged claim being replaced. A patent owner may not seek to broaden a challenged

> claim in any respect, in the name of responding to an alleged ground of unpatentability. A proper substitute claim under 37 C.F.R. § 42.121(a)(2)(i) must only narrow the scope of the challenged claim it replaces. Similarly, under 37 C.F.R. § 42.121(a)(2)(ii), a substitute claim may not enlarge the scope of the challenged claim it replaces by eliminating any feature.

Idle Free Systems, Inc. v. Bergstrom, Inc., Case IPR2012-00027, at 5 (P.T.A.B. June 11, 2013). Because the proposed substitute claims 47-50 impermissibly broaden the scope of the original claims, and Nike has not addressed the construction of the new, proposed claims to argue otherwise, the Board should reject the substituted claims.

II. The Proposed Substitute Claims Introduce New Matter.

Nike's proposed substitute claim 47 recites that the textile element has "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." (Paper 31, p. 1.) Nike's argument to show that this limitation is sufficiently described in the '011 patent hinges on a single phrase that the textile element 40 "may be formed as a part of a larger textile element," from which Nike argues must necessarily mean that the textile element 40 may also not be formed as part of a larger textile structure. (Paper 31, p. 4; Ex. 2010, ¶ 63.)

In support of this proposed claim term, Nike assembles (1) a few original claims in the application that do not positively recite removing a flat knitted textile element from a larger textile structure, (2) Figures 8, 10, and 11 showing the textile element 40, 40', 40" in a final form, and (3) a statement that flat knitting generally could be used to form the textile

element in an attempt to show that the "inventors thus contemplated such footwear as part of their invention." (Paper 31, p. 4; Ex. 2010, ¶¶ 62-67.)

For a proposed claim to have sufficient written description support, the disclosure must reasonably convey to skilled artisans that an applicant possessed the claimed invention as of the filing date. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). "Negative claim limitations are adequately supported when the specification describes a *reason* to exclude the relevant limitation." *Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344, 1351 (Fed. Cir. 2012) (emphasis added). However, "*the mere absence of a positive recitation* in the original disclosure is not [a] basis to exclude the limitation." *Ex parte Lazaridis*, No. 2010-005137, at 5 (P.T.A.B. Mar. 1, 2013) (emphasis added); *see also Ex parte Miyashita*, No. 2010-010626, at 6 (P.T.A.B. Apr. 2, 2013) (holding that a specification that neither explicitly describes the negative limitation of excluding a feature, nor indicates possession of the feature by describing any advantage of excluding the feature or any disadvantage of including the feature lacks sufficient written description).

First, Nike's reliance on the as-filed claims 19, 38, and 65 in the original '011 application is misplaced because the mere absence of a positive recitation that the textile element is removed from a larger textile structure is not adequate to conclude that the specification teaches that this feature should be excluded. (Ex. 2010, ¶ 65.)

Second, the '011 patent explains that each of Figures 8, 10, and 11 represents a "*general shape*" of textile element 40, 40', 40" following its formation with "a wide-tube

circular knitting machine" or "other types of knitting machines" as part of a larger textile structure 60, as shown in Figure 9. (Ex. 1002, 5:58-60, 6:66-8:14, 9:7-14, 9:35-48, 11:19-41 (emphasis added).) During his deposition, Nike's expert, Mr. Tonkel, admitted that the textile element 40 shown in Figures 8, 10, and 11 could just as easily represent a textile element 40 formed by the process taught in Figure 9. (Ex. 1015, p. 90.)

The '011 patent fails to describe any *disadvantages* associated with removing the textile element from the larger textile structure, nor any *advantages* of not having to do so. The only reference to the '011 specification (other than Figures 8, 10, and 11) that Mr. Tonkel provided in support of the proposed claim element describes the advantage of using a single textile element, rather than numerous joined elements, to form an article of footwear. (Ex. 1015, pp. 91-92; Ex. 1002, 11:12-18.)

Third, the mere fact that these textile elements could be formed from flat knitting in no way indicates that the inventors of the '011 patent intended the textile element to be formed directly on a flat knitting machine *without being cut from a larger textile structure*. Rather, textile elements are typically flat knit as part of a larger textile structure and removed therefrom to form the final textile element. (Ex. 1005, 1:10-18.) Thus, the bare recitation of a textile element that is flat knitted – without a more specific description of how it was knit – does not rise to the level of providing sufficient written description for proposed substitute claims 47-50. Because claims 47-50 constitute new matter, the Board should reject these claims.

III. The Proposed Substitute Claims are Indefinite.

During prosecution of a patent application, a claim is properly rejected as indefinite if it is "amenable to two or more plausible claim constructions." *Ex parte Miyazaki*, 89 U.S.P.Q.2d 1207, 1211, 2008 WL 5105055, at *5 (B.P.A.I. Nov. 19, 2008) (precedential opinion). Proposed claims 47-50 are indefinite because the phrases "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," as well as "flat knit edge," are each amenable to at least two plausible claim constructions.

A first plausible construction for the phrase "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" – and one that is entirely consistent with the specification of the '011 patent – is "edges of a knitted textile that are knit in flat form, which have been removed from a surrounding textile structure so that the edges are free of surrounding textile structure." In fact, as described above, this is the only construction that has sufficient written description within the '011 patent. (*See* Ex. 1002, 5:58-60, 6:66-8:14, 9:7-14, 9:35-48, 11:19-41.)

Mr. Tonkel insists that the claim language is limited to textile elements that are not removed from a surrounding textile structure, which he generally refers to as a "knit to shape" textile. (Ex. 1015, pp. 68-98.) During his deposition, Mr. Tonkel repeatedly stated that "flat knit edges" means that the claim language is limited to textile elements that are

"knit to shape." (Ex. 1015, pp. 68-98.) However, when asked to provide support for his understanding of "flat knit edges," Mr. Tonkel stated that his understanding was limited to his own industry knowledge, and he acknowledged that he does not qualify as a textile expert. (Ex. 1015, pp. 9, 11, 94-95.) Nevertheless, Mr. Tonkel offers a second plausible construction of this term, despite its lack of written description support.

Nike's proposed construction of this term as "requiring that edges of the textile element have flat knit edges without surrounding textile structure such that the flat knit edges are not surrounded by textile structure from which the textile element must be removed" does not clarify or otherwise state that the term is limited to flat "knit to shape" textiles. (Ex. 2010, ¶ 68.) For example, once a flat knit textile element is removed from a surrounding textile structure, it thereafter meets this construction. Thus, there is nothing in the language of claim 47 (or Nike's proposed construction) that would suggest to a POSITA at the time of the priority date of the '011 patent that the claim scope is limited to "knit to shape" textiles.

The phrase "flat knit edges" is also indefinite because it is amenable to at least two plausible claim constructions. As described above, although Nike did not propose a construction of this term at all, Mr. Tonkel suggested that the phrase refers to edges of "knit to shape" textiles. (Ex. 1015, pp. 89, 94-96.) In contrast, Dr. Adanur, a knitting professor from Auburn University, explains that a POSITA at the time of the priority date of the '011 patent would understand that, under the broadest reasonable interpretation, "flat knit edges"

means "edges of a knitted textile that are knit in flat form," whether knit to shape or not. (Ex. 1016, ¶ 38.) Because claims 47-50 are indefinite, the Board should reject these claims.

IV. The Proposed Substitute Claims are Anticipated by Nishida.

Assuming *arguendo* that the Board determines that claims 47-50 are not invalid for any of the reasons stated above, the Board should adopt the broadest reasonable interpretation of the phrase "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" to mean "edges of a knitted textile that are knit in flat form, which has been removed from a surrounding textile structure so that the edges are free of surrounding textile structure," which is consistent with the '011 patent specification and the ordinary meaning of the claimed phrase.

Under this construction, there is no distinction between claims 47-50 and the disclosure of Nishida because the only distinction that Mr. Tonkel identified between claim 47 and Nishida is that "Nishida's 'layout' is made as part of a larger textile structure or web and must be cut out of the web." (Ex. 2010, ¶ 101; Ex. 1015, p. 87.) As described in the claim charts below, claims 47-50 are anticipated under 35 U.S.C. § 102(b) by Nishida.

V. The Proposed Substitute Claims are Obvious Over Nishida Alone.

Assuming *arguendo* that the Board determines that claims 47-50 are not invalid for any of the reasons stated above and determines that Nike's proposed construction is in fact limited to "knit to shape" textiles, claims 47-50 are nevertheless obvious over Nishida.

For example, as Mr. Tonkel acknowledges, Nishida is directed to improving efficiency of manufacturing flat knitted, unitary uppers by reducing the costs of materials needed to produce the uppers. (Ex. 2010, ¶¶ 177-179; Ex. 1015, pp. 79-80; Ex. 1023, ¶ 11.) However, Nishida also recognizes that there are advantages to reducing the amount of cutting waste, such as by having "individual patterns or partial patterns already [] produced directly in the production of the web of material in the desired shoe size, *by which the cutting waste can be still further limited*, since the individual patterns or partial patterns in the provided size can directly adjoin one another." (Ex. 1023, ¶ 11.)

To the extent that a POSITA would find that the statements in the '011 patent regarding the advantages of manufacturing an upper as a single textile element (Ex. 1002, 11:12-18) to suggest forming a "knit to shape" textile element, a POSITA would find the statements in Nishida regarding the advantages of reducing cutting and material waste to be equally, if not more, suggestive of forming a "knit to shape" textile element. (Ex. 1023, ¶ 12-13.)

Furthermore, as to Mr. Tonkel's statements regarding a long-felt need for a "knit to shape" flat knit textile upper, in many cases, the stated efficiencies of (1) eliminating separate cutting and finishing steps, and (2) eliminating material wastes are more than offset by losses in production speed, increased machine set-up time to accommodate different shoe sizes, amortization of the expensive machinery, and the need for expensive labor to program and maintain the number of machines needed to keep up with demand.

(Ex. 1023, ¶¶ 17-20, 23-26, 28-29, 31-34, 36-45.) Mr. Tonkel admitted that he had no knowledge of any of these additional cost considerations that could undercut any purported gains in efficiency by eliminating additional processing steps and material waste. (Ex. 1015, pp. 101-109.) Therefore, Nike has failed to produce sufficient evidence to demonstrate that claim 47 is not obvious over Nishida. As described in the claim charts below, claims 47-50 are obvious under 35 U.S.C. § 103(a) in view of Nishida alone.

VI. The Proposed Substitute Claims are Obvious Over Nishida in View of Schuessler I and Schuessler II.

Claims 47-50 are also obvious over Nishida in view of Schuessler I and Schuessler II. It would have been obvious at the time of the priority date of the '011 patent to modify Nishida to incorporate a "knit to shape" textile element – as disclosed by Schuessler I and Schuessler II – into Nishida's upper. The opponent of a motion to amend "may respond to new issues arising from proposed substitute claims including evidence responsive to the amendment." Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48767 (Aug. 14, 2012). Schuessler I and Schuessler II are both prior art under 35 U.S.C. § 102(b).

For example, Schuessler I dates to 1938 and describes a method of producing a knitted helmet (i.e., cap) on a flat knitting machine "in accordance with the disclosure in U.S. Patent No. 2,150,730 issued to Carl F. Schuessler on March 14, 1939 for Knitting machine" (Ex. 1021), wherein the helmets are "completed from the swatches as knitted without requiring cutting, and requiring the joining of only a few edges." (Ex. 1020, 1:22-27, 1:48-2:2.) Schuessler I teaches that the two-dimensional swatch is formed with selvage edges,

so that the swatch is converted to a three dimensional helmet solely by joining some of the edges. (Ex. 1020, 2:41-45.)

Schuessler I and Nishida are in similar fields: the use of knitted two-dimensional textile elements having edges that are stitched together to form three-dimensional wearable items, and Schuessler II confirms that a flat knitting machine may be used to produce the two-dimensional textile elements of Schuessler I, which would be equally applicable to Nishida. (Ex. 1023, ¶ 14.) Because the textile elements of Schuessler I serve the same purpose when combined with Nishida's textile elements, namely to form a three-dimensional wearable item in an efficient and economical way from a knitted two-dimensional textile element, a POSITA would have been motivated to combine Schuessler I's flat knitted textile elements having selvage edges that are sewn together with Nishida's knitted textile elements also having edges that are sewn together to create a wearable item. (Ex. 1023, ¶ 15.) As described in the claim charts below, claims 47-50 are obvious under 35 U.S.C. § 103(a) in view of Nishida in combination with Schuessler I and Schuessler II.

VII. Element-by-Element Comparison of the Proposed Substitute Claims to Nishida Alone and/or Nishida in view of Schuessler I and Schuessler II.

The claim charts below set forth an element-by-element comparison of proposed substitute claims 47-50 to the disclosure of Nishida alone and/or in combination with Schuessler I and Schuessler II. The proposed substitute claims 47-50 are shown in marked-up form relative to the issued claims for which they are substituted.

With respect to claim 47, a POSITA at the time of the priority date of the '011 patent

would have known and understood that "conventional" knitting processes include both warp and weft knitting (and further include both circular and flat knitting), since these knitting processes existed for many decades before 1992 and had been used in the making of shoe uppers for many decades as well. This understanding is not rebutted by Nike, as the Board acknowledges. (Paper 18, p. 19.)

Likewise, once the layout 2 has been cut out of the web of material 1, the edges of the layout 2 are not surrounded by textile structure from which the textile element must be removed. Nishida fully discloses this element based on a broadest reasonable construction of this limitation as "edges of a knitted textile that are knit in flat form, which has been removed from a surrounding textile structure so that the edges are free of surrounding textile structure." In addition, the understanding that some of Nishida's edges of the flat knit textile are joined together to form an ankle opening in the upper for receiving a foot is supported by Dr. Frederick's deposition testimony. (Ex. 1005, 3:31-42, Fig. 3; Ex. 2009, 103:18-105:6.) It is inherent that such a flat knit textile element would also have flat knit edges based on a broadest reasonable construction of "flat knit edges" to mean "edges of a knitted textile that are knit in flat form." (Ex. 1016, ¶ 38.)

Furthermore, a POSITA at the time of the priority date of the '011 patent would have understood that varying stitch configurations to impart different properties to two different areas is an obvious design choice or a selection from among a finite number of techniques to do so. (Ex. 1001, ¶ 72.)

With respect to claim 48, the '011 Patent describes that "apertures" are formed by omitting stitches to provide air permeability in the knitted textile element. (Ex. 1002, 9:57-62.) The "net-like" knitted structure described by Nishida has apertures for the same reason, air permeability. (Ex. 1001, ¶ 72.)

With respect to claim 49, Nishida further describes that during or after "the production of web of material 1," the "layout(s) 2 can be provided with an embroidery by which a hole pattern is welded." (Ex. 1005, 4:31-38.) In order to create a hole pattern, stitches must necessarily be omitted in the area in which the hole is formed. In addition, Nishida illustrates the presence of such "hole patterns" positioned in the shoe upper 3 in a location for receiving laces. (Ex. 1005, 3:43-52, 6:25-31, Fig. 3.)

With respect to claim 50, a POSITA at the time of the priority date of the '011 patent would have understood Nishida's use of two or more layers to include three layers, and that the knit textile element and/or knitted backing layer of the textile element forms a portion of the interior layer. (Ex. 1001, ¶ 72.)

'011 Patent Claims	Description of Prior Art
47. An article of footwear comprising:	**Nishida** discloses an article of footwear. (Ex. 1001, ¶ 72 (same element in claim 16); Ex. 1005, Abstract, Fig. 3.)
an upper incorporating a [weft-knitted] flat-knit textile element,	**Nishida** discloses an upper incorporating a flat knit textile element. (Ex. 1001, ¶ 72 (similar element in claim 16); Ex. 1005, Abstract, 3:6-12.)
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	**Nishida** discloses that the textile element has 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. Specifically, Nishida states that "[a]fter cutting out layout 2 from the web of material 1, the edges 7 and 8 are

'011 Patent Claims	Description of Prior Art
must be removed,	stitched together and a heel seam thus is formed." (Ex. 1005, 3:31-33.) **Nishida + Schuessler I and Schuessler II** Textile elements that are "knit to shape" so that the textile element has 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 were well-known in the art at the time of the priority date of the '011 patent. *See* Ex. 1020, 1:22-27, 1:48-2:2, 2:41-45; Ex. 1021 generally.)
some of the flat knit edges joined together to form an ankle opening in the upper for receiving a foot,	**Nishida** discloses that some of the flat knit edges are joined together to form an ankle opening in the upper for receiving a foot. (Ex. 1001, ¶ 72 (a similar element in claim 1); Ex. 1005, Abstract, 3:6-12, 3:31-42, Fig. 3.)
the ankle opening having an edge comprised of one of the flat knit edges; and	**Nishida** discloses the ankle opening having an edge comprised of one of the flat knit edges. (Ex. 1001, ¶ 72 (a similar element in claim 1); Ex. 1005, Abstract, 3:6-12, 3:31-42, Figs. 2-3.)
(2) having a first area and a second area with a unitary construction,	**Nishida** discloses an upper incorporating a knit textile element having first and second areas with a unitary construction. (Ex. 1001, ¶ 72 (same element in claim 16); Ex. 1005, Abstract, 3:6-12, 3:15-26, 4:12-18, Figs. 2-3.)
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	**Nishida** discloses that the first and second areas may be formed of different stitch configurations to impart varying properties to the textile element. (Ex. 1001, ¶ 72 (same element in claim 16); Ex. 1005, 3:15-4:18, 4:47-60, 5:41-45, 5:63-6:2, 6:4-41.)
a sole structure secured to the upper.	**Nishida** discloses that a sole structure may be secured to the upper. (Ex. 1001, ¶ 72 (same element in claim 16); Ex. 1005, Abstract, 4:39-46, Fig. 3.)
48. 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	**Nishida** discloses that at one stitch configuration may form a net-like structure (i.e. having apertures) in the knit textile element. (Ex. 1001, ¶ 72 (a similar element in claim 19); Ex. 1005, 3:43-52, 6:25-31.)

'011 Patent Claims	Description of Prior Art
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.	**Nishida** discloses that 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. (Ex. 1005, Abstract, 3:15-4:46, Figs. 1-5.)
49. The article of footwear recited in claim [16] 47, wherein at least one of the first stitch configuration and the second stitch configuration form [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.	**Nishida** discloses that at least one of the first stitch configuration and the second stitch configuration form a plurality of apertures in the textile element, the apertures formed by omitting stitches in the flat knit textile element and positioned in the upper for receiving laces. (Ex. 1001, ¶ 72 (a similar element in claim 19); Ex. 1005, 3:43-52, 6:25-31, Fig. 3.)
50. The article of footwear recited in claim [16] 47, wherein the [weft-knitted] flat knit textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper, and	**Nishida** discloses that the upper may include two or more layers, and the knit textile element may form at least a portion of the interior layer. (Ex. 1001, ¶ 72 (a similar element in claim 20); Ex. 1005, 3:6-9, 3:62-4:1.)
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.	**Nishida** discloses that 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. (Ex. 1001, ¶ 72 (a similar element in claim 2); Ex. 1005, Abstract, 3:15-4:46, Figs. 1-5.)

VIII. Conclusion

In view of the above, adidas requests that the Board reject proposed substitute claims 47-50 and find them unpatentable.

Respectfully submitted,

Dated: November 12, 2013

By: Vaibhav P. Kadaba

RAYMOND TONKEL

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ADIDAS AG,	)	
PETITIONER,	)	Case No.
vs.	)	IPR 2013-00067
NIKE, INC.,	)	
Patent Owner.	)	

DEPOSITION OF RAYMOND TONKEL

Chicago, Illinois

November 5, 2013

JOB NO: 67597A

REPORTED BY: Tina Alfaro, RPR, CRR, RMR, CLR

Q. Okay.

Okay. So let me -- let me start by just saying in your own words, knowing the issues in this case, what is it that you're an expert in that you believe you can bring to bear that expertise as to the issues in the case?

A. I've been in the footwear industry for over 30 years, always in the product design and development side of the business. So this being a product -- footwear product construction matter, I think I'm well-qualifed to discuss the issues.

Q. How much manufacturing expertise do you have?

A. In the course of my career I've probably had a -- most manufacturing in the footwear industry is done overseas, and I've probably had a hundred trips at least overseas where I've been in manufacturing facilities in the Far East, in Europe, and Brazil.

Q. And when was your last trip overseas to a manufacturing facility?

A. Give or take, approximately three years to the Far East.

Q. Okay. And what is your expertise with

respect to warp versus weft knitting and sort of the details of the textile part of the shoe manufacturing process?

A. I guess the best way to put that is I have knitting expertise within footwear as I do expertise in other areas and other componentry and processes that make up a shoe.

Q. And I'm not sure I understand that. So sort of separate and apart from shoes, would you hold yourself out as a textile expert?

A. Outside of footwear?

Q. Yeah, outside of footwear.

A. No.

Q. Okay. Within the category of shoes, what is your expertise within the textile area?

A. In ordinary shoe making there's a lot of componentry that makes up footwear, rubber and leather and textiles. So within that context I've had experience with designing textiles, sourcing textiles, been involved in the costing process with textiles. So I have knowledge of textiles as they're applied to footwear and footwear construction.

Q. Okay. And when you say "designing

textiles," is that the appearance of the textile?

A. There could be a number of -- when I say design, I should clarify that. Design as it pertains to -- aesthetics is one consideration, performance factors. There's a host of performance factors that one might consider when designing a textile in terms of, you know, breathability, flexibility, strength, stretch, number of other factors, but those are some of them.

Q. And what is your -- so what I'm trying to -- let me see if I can distinguish between just the pure manufacturing process --

A. Okay.

Q. -- like this flat knitting versus some of the other techniques for making the textile.

A. Okay.

Q. As opposed to the broader specifying performance characteristics or the appearance.

A. Okay.

Q. With respect to the manufacturing of textiles, where -- what is your expertise there?

A. I'd say I understand manufacturing techniques for footwear, and I understand how some of those textiles might be manufactured for use in

footwear. So I think I have a good basic understanding and material knowledge. I wouldn't hold myself out as a pure textile expert, but as it relates to footwear, I think I have a good handle on footwear -- textile usage within footwear.

Q. Are the textiles that are used in footwear only used for those particular articles of clothing and no other articles?

A. I think you have to take that, honestly, on a case-by-case basis. Could be, but it could also be used in other industries possibly.

Q. So sometimes the fabrics and textiles from, you know, some other article of clothing can move over into footwear and vice versa?

A. I'll tell you, in my experience generally footwear materials are materials sourced specifically for footwear from specific suppliers, but I assume there's no reason to think that certain materials couldn't be somewhat interchangeable.

Q. I'll just give you an example. I'm wearing a pair of Johnston and Murphy shoes --

A. Okay.

Q. -- which are made out of leather --

A. Right.

Q. -- and I'm wearing a leather belt.

A. Okay.

Q. Is that what you mean sometimes these materials may interchange?

MR. PRATT: Objection to form.

BY MR. STOCKWELL:

Q. If you don't understand the question I can rephrase it.

A. Why don't you rephrase it, if you don't mind.

Q. I've got a pair of shoes made out of leather and I've got a leather belt.

A. Uh-huh.

Q. Is that an example of materials being used in different articles of clothing?

A. It could be, but let me just state that leather isn't the best example in terms of -- leather possibly, but not necessarily a textile, not necessarily a fabric. And even within those leathers you'd have different parameters, a leather used for footwear as opposed to a leather used for a belt.

Q. Okay. You may have different grades, you mean.

A. Different thicknesses --

Q. Right.

A. -- different grades, different finishes, those type of things.

Q. So is it your testimony that there is no transfer of textiles between footwear articles and other articles of clothing or applications of textile?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. I think it is -- it really needs to be handled on case-by-case basis. I can't make a blanket statement that there is absolutely none and it would happen in every case because I know it wouldn't.

Q. And what would you -- I'm not sure what you mean by a "case-by-case basis." What do you mean by that?

A. I'm not an apparel expert by any means, but there are different parameters that are needed for footwear, the actual end use product of those manufacturing as well as, I'm assuming with apparel.

Q. And when you say you would want to look at

it on a case-by-case basis, I take it you would want to look at the performance characteristics of the footwear textile and the performance characteristics of the, you know, piece of clothing textile; is that what you're referring to?

A. That's probably one -- one factor, but again, I have really no apparel expertise. So I don't really feel qualified to answer that that well. It's kind of theory when I'm talking about apparel.

Q. Are you aware, just from your general experience, of situations where you've either sourced for footwear components that are utilized in other textile applications or articles of clothing?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. No, I'm not.

Q. Before this case had you had any experience with flat knitting?

A. I've designed footwear that incorporated textiles that had been flat knit.

Q. Can you give me an example?

A. As example might be without thinking of --

I don't know if I recall a specific shoe, but generally shoes are made up of a number of components, and a quarter, which is a side piece of the -- side piece of a shoe, might be made out of a fabric and the rest of the shoe is leather. So when it came to that fabric-specific portion of the shoe, it's just determining what characteristics were needed in that piece of material esthetically and functionally, which I mentioned earlier, and how that would be incorporated into the shoe.

Q. And are you saying you selected that component because it was flat knitted or you selected that component given its performance characteristics and it happened to be flat knitted?

A. I'd say both depending on the circumstance.

Q. Okay. What about warp knitted, did you have experience with warp knitting before this case?

A. Could you just clarify "experience," if you wouldn't mind.

Q. Have you designed or sourced or manufactured shoes that used warp-knitted fabrics or textiles?

A. The fact that -- the fact that I've done so

many shoes over the course of 30 years, I'm sure I have at some point.

Q. You just can't recall anything specific today?

A. Not a specific instance.

Q. Was that -- and since you can't recall, I understand you may be going on sort of what your practice would have been, from your practice would you have specified components that were warp knitted because they were warp knitted or because they had performance characteristics and happened to be warp knitted?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. I'm not sure on that.

Q. You don't understand the question?

A. No, I understand what you're saying, but I can't recall.

Q. Okay. Fair enough.

Just generally when you're selecting textile materials for shoes, do you consider the type of knit in selecting those materials in all cases?

A. Not all cases.

Q. So let's just take that language. You said free of textile structure" -- and I'm going to paraphrase. So correct me if I'm wrong. I made a note to try to be accurate -- means free of structure in the textile knitting process, something along those lines. Is that -- is that fair?

A. Yes. So when that textile structure is removed from the knitting machine, there would be no further structure around that from which it would be -- need to be removed. So what I term too is it would be knit to shape. There would be no structure around what was necessary to form -- later on with the other steps form the shoe upper.

Q. Okay. Let's go to page 25 where your substitute claim is -- claim 47 is. The claim language says "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."

What about that claim language signals that you're talking about the textile structure at the point where you're knitting it and before it's removed from the machine?

A. I did not consider that. My consideration

was for specifically what the claims state, which was when the textile element was being removed specifically from the knitting machine, it would follow this form.

Q. And I understood that. I'm just saying where -- from the language in the claim, where are you getting that timing constraint that you're looking at, at the textile element, before it's removed from the machine?

MR. PRATT: Objection, form.

BY THE WITNESS:

A. I would say I hadn't thought of that because I was thinking of a final piece, but I would think when everything was complete, ready to be removed from the machine, when this figure 8 as an example would be flat knit to shape ready to be removed from the machine.

Q. So if you look at figure 9 --

A. Yes.

Q. -- so obviously there's a bigger piece and then you cut out the shape 40 from the bigger piece, right?

A. That is correct.

Q. Can you explain why the language in

claim 47 -- ignoring the flat knit edges point for a moment, but the other language that talks about the edges being not surrounded by textile structure from which the textile element must be removed, doesn't that language describe the item 40 after it's been cut out -- cut away from the bigger piece?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. I don't think I can -- that's speculation. I've always considered this as a flat knit, knit to shape item.

Q. Okay. Why? What about the claim language makes you feel this is always a flat knit to shape item?

A. Well, for one thing, it would be free of surrounding textile structure.

Q. Okay. So free of surrounding textile structure. Anything else?

A. Just -- please just ask me the specific question.

Q. Yeah. Why did you always view claim 47 as being focused on -- I think you called it a flat knit to shape item?

A. Yes.

Q. What is the specific -- what are the specific words you're focusing on there?

A. I think every word is important within -- every underlined word as part of this new claim that I was asked to look at is important in looking at the totality of the claim.

Q. Okay. So the totality of the claim. Any other specific words?

A. I mean, I could break this whole thing down for you as I interpreted what I think it to mean if you like if that would help.

Q. Okay. If that's helpful, but remember, the context here is my question, which is you said you view claim 47 as being limited to a knit to shape textile element sort of before you take it off the machine. Fair enough?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. No. I considered it after it's been removed from the machine.

Q. After it's been removed from the machine?

A. Yes.

Q. Okay. If it's after it's been removed from the machine, why doesn't that language read on

item 40 of figure 9?

A. Because item 40 of figure 9, the only way to get it out of that broader element, I think indicated by No. 60, is to cut it out of that element, in which case it no longer meets the criteria of having -- number one, this appears to me to be a circular knit object. Number two is that the only way to remove what's indicated as textile portion 60 from figure 9 is to cut it. So once it's cut, it doesn't match up with claim 47. Those are all cut edges.

Q. And they're no longer flat knit edges?

A. They're no -- well, it was never flat knit. I was circular knit.

Q. Okay. Let me -- that's a good point. Let me change this a little bit so we're -- let's just assume that the item in figure 9 was not circular knit but it was weft knitted as a single flat knit element and then you cut it out. Okay?

A. Okay. Although I do believe earlier I said I wasn't sure if -- okay. I misspoke. I misspoke. Go ahead.

Q. Okay. So with that in mind, what would be the difference between that process and structure

and substitute claim 47?

MR. PRATT: Object to form.

BY THE WITNESS:

A. So I just want to be clear. So if this object, No. 40, was sitting on this table today --

Q. Uh-huh.

A. -- and it was made through flat knitting and --

Q. Uh-huh.

A. -- was it flat knit to shape or removed?

Q. No. It was made as a big flat knit square panel.

A. Okay.

Q. And then you cut out the shape.

A. So once you've cut through those edges, if you're cutting through all those edges to remove it, it no longer meets the criteria as shown in -- in the claims.

Q. Okay. Which criteria?

A. In particular it would no longer have flat knit edges.

Q. Anything else?

A. No longer have -- let me just read through it.

RAYMOND TONKEL

(Witness viewing document.)

BY THE WITNESS:

A. Well, it's very hypothetical because once it's -- you've already -- forgetting the edges completely, you've removed it from the textile structure. So once you've removed it from the textile structure I can't analyze that in a vacuum. It cannot be removed from a broader, bigger textile structure.

And looking at it further, it's virtually everything I've underlined here. Some of the flat -- or everything that, was, excuse me, given to me in this claim that was underlined. Some of those -- excuse me one minute. Let me just make sure I get this right.

You couldn't join the flat knit edges together to form an ankle opening because they would no longer be flat knit.

Q. Okay.

A. It would be cut edges for an ankle opening and the upper for receiving the foot, the ankle opening having an edge comprised of one of the flat knit edges, and, again, you wouldn't have flat knit edges.

Q. Okay. So I want you to -- I want you to do something for me, and if you need a pen to keep up with this or something, I'm happy to give you that.

A. Okay.

Q. If you struck through the words "Flat knit," okay, that appear everywhere in that claim, what would be the difference between the hypothetical you flat knit a big square piece and then cut out the shape as in figure 9 and claim 47?

MR. PRATT: Object to form.

BY THE WITNESS:

A. So you're saying if figure 9 was flat knit, so not circular knit, but if you cut out that same item 40 from a flat knit piece of material, what the difference would be?

Q. Right. And claim 47 did not have the words "Flat knit," in it --

A. Okay.

Q. -- what is the difference?

A. That was an analysis I was never asked to -- to provide. I always looked at this specifically the claim and the prior art.

Q. So let me -- let me change the question. You're familiar with this Nishida patent which has

been previously marked as Petitioner's Exhibit 1005, correct?

A. Yes.

Q. So let's turn to figure 4. So I want you to assume that -- figure 4 shows that overall square piece of textile fabric. I want you to assume that it was flat knitted, okay?

A. Uh-huh.

Q. And I want you to assume that you then cut out all of that material.

A. Okay.

Q. Do you have that in mind?

A. Yes.

Q. Okay. What would be the difference between that structure and process for creating the structure and a claim 47 that did not have the words "Flat knit"?

A. Okay.

MR. PRATT: Objection to form.

BY THE WITNESS:

A. You know, I really don't think I can answer that because I don't -- I would need to better understand the teaching of what edges were put together to form the upper. Let me see if there's

anything else I can, you know.

(Witness viewing document.)

BY THE WITNESS:

A. I think with the words you're asking me to take out which is basically "Flat knit edges" or "Flat knit" anywhere in there and you're also asking me to take out "Free of surrounding textile structures" --

Q. Wait a minute. Let me make sure you understand the question. I was not asking you to take that out.

A. Okay.

Q. Let me limit the question a little bit --

A. Okay.

Q. -- so you're not having to do too much at once.

So this item 2 in the claim, so all this from item 2 to the end, let's ignore that part of the claim.

A. Okay.

Q. Okay?

A. Yes.

Q. So all I'm asking you to do is to strike the words "Flat knit" that appear in the first half

of claim 47 and tell me the difference between that claim without the words "Flat knit," that portion of the claim without the words "Flat knit," and cutting this shape out of figure 4, the broader textile fabric?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. I just think by doing that it changes the whole context of -- of the claim. I don't think we're comparing claim 47 in that case to the prior art that I was comparing it to, to try to make a ruling on whether claim 47 and these other claims were, in fact, patentable.

Q. So you can't answer the question as phrased?

A. Not as phrased.

Q. Okay. So let me -- let me change the question. Okay.

Focusing just of the first half of claim 47, let's ignore the part from "And" -- item 2 down to the "And." Okay?

Exactly as phrased, what's the difference between that portion of the claim and the Nishida patent, Exhibit 1005?

A. Okay. So just so I'm clear, so the Nishida patent as exists, not removed all the other things that you're --

Q. Whatever you want to say about it.

A. I think the main difference with Nishida is I think Nishida talks a conventional knitting, which I'm not sure. It doesn't say flat knitting. It doesn't say specifically the type of knitting process. I think a big difference is that the Nishida patent calls for the textile element I think indicated -- I don't know if it's No. 30, but the main body -- or 30 or 31, the main body of this textile element to be -- it has to -- it needs to be removed from a broader piece of material.

A big part of the Nishida patent had to do with -- Nishida was improvement over an earlier patent, I believe a German patent. The German patent talked about I think it was three strips of material, each with different properties. So what Nishida did 10 or 20 years later after that German patent was to try to do a similar process but use less expensive scrap material, so the material around the form of the Nishida upper would be less costly.

So Nishida, what they were trying to do was basically reduce costs comparatively to an earlier -- earlier patent, but you would still have the issue of cutting out of a larger web with Nishida. And once you cut the edges in Nishida or any upper, once you cut it out, a fabric upper, you need to stabilize those edges before you could then finish the shoe upper.

Q. Okay. Anything else?

A. Just give me a moment, if you would, please.

Q. Uh-huh.

(Witness viewing document.)

BY THE WITNESS:

A. No. So I think the main differences, just to summarize, are this is formed from a bigger, larger piece of textile material from which the upper would need to be removed. I don't know if it's -- it's conventional knit, whatever that specifically means, and then, of course, the joining process, I'm not sure how Nishida intended to join edges. One patent the amended claims are very specific in terms of how edges need to be joined together.

So Nishida doesn't -- doesn't cover quite a few of the claims, if any of the claims, in the '011. Amended claims, I should say.

Q. So let me -- let me kind of probe each one of those reasons.

A. Okay.

Q. The first one you gave me was conventional knitting. Does that correlate to the claim language in substitute 47 where the upper has to incorporate a flat knit textile element?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. I'm just saying that Nishida says conventional knitting. I don't know what that refers to, but if you're asking --

Q. Let me rephrase the question.

A. Okay.

Q. So you mentioned conventional knitting as a difference between claim 47 and Nishida, right?

A. Well, I'm saying claim 47 specifically calls for flat knitting. Nishida says conventional knitting. I don't know exactly what he was intending.

Q. Okay. So let me break that down. When you

say claim 47 calls for flat knitting, is that the language in upper incorporating a flat knit textile element?

A. Let me just get to that.

MR. PRATT: Object to the form.

BY THE WITNESS:

A. I think it's anywhere through those revised claims that calls for flat knitting.

Q. Okay. I understand that, sir, but let me -- let me try to be specific here. What I'm trying to understand is the claim language in 47 that differentiates over Nishida, not oh, well, Nishida's conventional knitting, blah-blah-blah. I want to know what words are different between claim 47 and Nishida. That's where this line --

A. Okay.

Q. -- of questioning is getting at. That's a comment, not to -- not a question.

A. Okay.

Q. So with that comment in mind, what are the words in claim 47 that relate to this conventional knitting point that you're using to distinguish Nishida?

MR. PRATT: Objection, form.

BY THE WITNESS:

A. Again, I'm just having a hard time trying to -- I see where you're going with the question. I have a hard time just saying flat knitting because flat knitting is essential for all four of these amended claims. At its simplest I could say the only thing that Nishida has in common with these -- that I could definitely state to with these four claims is the first four words here, which Nishida is an article of footwear.

Q. I'm not asking what it has in common. I'm actually focusing on the differences. So let's go with the flat knitting for a moment.

A. Okay.

Q. So you say Nishida does disclose conventional knitting --

A. Conventional knitting.

Q. -- and that's circa 1994 when Nishida issued it as a patent, correct?

A. Yes.

Q. Was flat knitting known in 1994?

A. Yes.

Q. Was it used in the footwear industry?

A. Yes.

Q. Okay.

So then the second point was this broader piece of material point, and I take it generally -- and you may come back and want to point out other claim language later --

A. Okay.

Q. -- and that's fine, but generally does that correlate to this language about the 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? Is that fair?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. I think it applies to anywhere you see "Flat knit" in the --

Q. Okay. But is it --

A. So that's one of the places, but there's many other places that it needs to be in order for the claim to be properly understood.

Q. Okay. So -- and I -- that's a -- that's a good point. So I get that. Let's just focus just for a moment on this removal language.

A. Okay.

Q. So once Nishida cuts the piece that you want out of the broader section of fabric --

A. Yes.

Q. -- so from that point in time forward, okay?

A. Okay.

Q. You have a piece in the shape you want and you're not going to have to make further cuts and remove further textile material, right?

MR. PRATT: Objection to the form.

BY THE WITNESS:

A. It depends how those edges are cut.

Q. I'm not sure I understand that.

A. Once you cut through the edges of the Nishida patent, you would need to stabilize those edges before shoe making because those edges could have numerous loose threads, which if you -- you know, dependent upon the knit fabric you use, those threads would need to be processed before shoe making. So they might need to be cemented or they might need to be bound, they might need to be stitched through. There's -- there's numerous processes that could take place in order for that to -- to come about, but the edges generally would

need to be stabilized.

Q. Okay. This is where I'm not tracking. How does stabilizing the edges relate to having edges free of surrounding textile structure such that the edges are not surrounded by textile structure from which the textile element must be removed?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. I'm only pointing out that you can't separate the two because, in my opinion, once you've cut through those edges, you need to stabilize those edges. So once this element is removed, the Nishida element is removed from the broader piece of textile, there's another step before you achieve an upper for shoe making.

Q. Okay. I understand there's another step, I get that, but is that step removing the piece you cut out from a broader textile piece?

A. Not the bigger piece, but it could remove a smaller edge as that needs to be removed as part of the edge cutting or sealing process.

Q. Okay. Okay. So let's assume just for a moment that the cut piece from Nishida was cut perfectly to size, there's no dangly threads, you

may come back and heat treat it or something --

A. Okay.

Q. -- but there's no other textile structure that in a second step you remove.

Would you agree that in that instance there's no difference between that later in time already cut piece from Nishida and this removal language?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. There's still a difference.

Q. And what's the difference?

A. Primarily the edges.

Q. That they're not flat knit?

A. They're cut.

Q. Right. Okay. Okay.

So let's go to flat knit for a minute. Where does the term "flat knit edges" appear within the '011 Patent?

A. The '011 Patent teaches flat knitting throughout the patent and refers to flat knitting throughout the patent. So it's understood by looking at figures 8, figures 10, figures 11, that if those representations or illustrations could be

flat knit, the edges would, in fact -- flat knit to shape, the edges would be flat knit.

Q. Does the term "flat knit edges" appear within the '011 Patent?

A. Just give me one moment, if you would, please.

(Witness viewing document.)

BY THE WITNESS:

A. I don't think the term "Flat knit edges" specifically appears, but "Flat knitting" appears numerous times through the patent, and one skilled in the art would understand that if figures 8, 10, and 11 were knit to shape, they would have flat knit edges.

Q. Where does the term "Knit to shape" appear in the '011 Patent?

A. It appears in the three drawings, 8, 10 and 11 as examples.

Q. It appears in the drawings? Can you give me an example?

A. In the patent I'm on page 8 of the '011 Patent, figure 8 is an example of a -- or can be an example of a knit to shape flat knit representation. Turning to figure 10 on page 10 is

another possible example of a flat knit to shape element to be formed into a shoe upper. And figure 11 is the same thing.

Q. Okay. I must have asked the question the wrong way. Where do the words "Flat knit to shape" appear in the '011 Patent?

A. Within the '011 Patent there are many references to flat knitting, and one skilled in the art -- I take that back. There are numerous references to flat knitting in the '011 Patent, which I could point some of those out if you like, and if one looked at the three drawings that I mentioned, one would understand that those edges would be flat knit edges and knit to shape specifically in this -- in this case.

Q. Does the phrase "Knit to shape" appear anywhere in the written part of the description of the '011 Patent?

A. The phrase itself I don't believe it does, but it's taught through the '011 Patent.

Q. Would you agree that one of skill in the art looking at figure 8, figure 10, or figure 11 would view those uppers as being produced either through what you call this knit to shape process or

through a cutting process; is that fair?

MR. PRATT: Object to form.

BY THE WITNESS:

A. They could be flat knit to shape or -- I don't want to say a cutting process, but what's shown in figure 9 could also be represented by figure 8 once it's removed. However, the edges would obviously be very different.

Q. Right. Okay. So what is it -- and this is where I want you to be specific and I want you to show me some language in the patent. What is it in the patent that suggests to you that figure 8, figure 10, or figure 11, any one of those figures, okay, was produced through this knit to shape process and not through the sort of cutting out, removal, and then it's being shown on its own? So show me the language you're relying on there.

MR. PRATT: Objection to form.

BY THE WITNESS:

A. I think the patent talks to -- in the verbiage of patent to manufacturing and -- I believe it was manufacturing. Let me get the exact words for you.

Q. And just to be clear, if you want to -- you

don't have to tell me what the language says. Just --

A. Just point it out?

Q. Just point it out. I mean, I'm interested in where this is in the patent.

(Witness viewing document.)

BY THE WITNESS:

A. Paragraph 11, line --

Q. I'm sorry. When you say paragraph 11, what are you -- okay. Column 11?

A. Column 11. I'm sorry about that. Column 11, page 20, we talk about -- or the patent talks about inefficient practice. It's line 14. Inefficient practice talks about -- or could be utili- -- they state right here "Utilizing multiple materials to impart different properties," and then it goes on to say "By forming a textile element to be a single unitary element of material increases -- efficiency is increased in that upper and may include a single textile element rather than numerous joined elements."

And to me that teaching to one skilled in the art reading this patent would mean the fewer materials you would have within making the upper,

the simpler the manufacturing process would be. So taking that to the -- what we just talked about which would be you'd eliminate that removal of materials. So I think that is talked through in here. That's one example.

Q. Anything else?

A. Just give me a minute, if you would, please. I think that's my main point.

Q. Once the upper has been cut free from surrounding material and ignoring for a moment your definition of flat knit edges, would claim 47 cover that embodiment of the '011 Patent?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. Please just restate it again so I get it exactly.

Q. Once the upper -- we were talking about figures 8, 10, and 11.

A. Okay.

Q. And you said those could be knit to shape, in your view, or they could be cut free from surrounding material, right?

A. As defined in illustration 9.

Q. Right. So I'm focusing on that latter

embodiment, they're cut free from surrounding material. Once they've been cut free, would they meet proposed substitute claim 47 except for the term "flat knit edges"?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. I don't think you could separate the two. I just can't separate because flat knit edges is so -- and flat knitting is integral to the claim that I can't answer that question hypothetically.

Q. Does the term "flat knit edges" have an ordinary and customary meaning to those of skill in the art?

A. It would -- they would be edges that were formed as part of the flat knitting process.

Q. Do you -- do you have any references or treatises or other materials that support that definition?

A. I would have to look through some -- you mean actually a written description?

Q. Yeah. Yeah. Let me state it a little differently. I mean, I looked in your declaration to see whether you cited anything like that.

A. Okay.

Q. I didn't see anything for, you know, the notion that the term "flat knit edges" means X, Y, and Z to people skilled in the art. Are you aware of anything, publications, articles, or whatnot that talk about flat knit edges and what they mean to people skilled in this field?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. Not specifically.

Q. Well, generally what -- what would you rely on, other than what's in your declaration? I mean, I have those materials obviously.

A. I would think --

MR. PRATT: Objection to form.

BY THE WITNESS:

A. Are you asking if it was me personally or one skilled in the art?

Q. Yeah. I mean, just what is it that you rely on for your understanding that flat knit edges are edges that have to be completely formed in the flat knitting process?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. In the context of this particular patent

and these four substitute claims, that is my understanding.

Q. Okay. So it's fair to say it's largely the context of the patent from which you derive that as well as your general experience?

A. My industry knowledge.

Q. Would you agree that the patent itself doesn't have an express definition of what flat knit edges are?

A. It might not specifically say what flat knit edges are, but I think one skilled in the art reading the patent references to flat knitting, the discussion about manufacturing deficiencies or inefficiencies would understand that if you knit to shape, you would have a superior upper with less waste than if you had to cut through those edges.

Q. And just in your view, if I flat knit something, you know, a big square piece and then I cut out a shape around that, those cut edges are not flat knit edges?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. They're cut edges.

Q. They're cut edges even though they're edges

of a piece of fabric that's been flat knit?

A. I would call the piece of fabric the flat knit piece of fabric with cut edges.

Q. Okay. But within the context of claim 47, the structure where you have a broader textile piece that's flat knit and you cut something out of it, that's not going to fit within the scope of claim 47?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. Well, I just can't remove it from all the other criteria within that claim. I need to look at everything within that claim. There's other things that talk about joining and forming an ankle opening.

Q. That's fair. I'm just focused on the flat knit edges part. Okay.

A. Well if you --

Q. So, again, if I have a structure and, you know, it's the embodiment in the '011 Patent, I have a flat knit fabric, I cut the upper out, okay, and then I go ahead and build the article of footwear just like the '011 Patent says. Okay? The resulting article of footwear, in your view, is not

going to be covered by claim 47 because there were no flat knit edges, there were only cut edges?

MR. PRATT: Objection to form.

BY THE WITNESS:

A. If every one of those edges were cut out in its entirety, every one in that shape you mentioned, then it would not meet this criteria.

Q. Okay. Fair enough.

Now, what if -- what if some is cut out and some is flat knit?

MR. PRATT: Objection to form.

BY MR. STOCKWELL:

Q. Same hypothetical.

A. If some are flat knit to shape?

Q. Yes, let's use your flat knit to shape.

A. So you had half an upper that was flat knit to shape as an example and half you cut through the edges?

Q. Correct.

A. It's all dependent on the specific edges we're talking about.

Q. Okay. So you'd have to make sure the edges matched up that were flat knit to shape, in your words, you'd have to make sure that they matched up