

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LULULEMON USA INC.,
Petitioner,

v.

NIKE, INC.,
Patent Owner.

Case IPR2024-00460
Patent 8,266,749

**DECLARATION OF DR. DAVID S. BROOKSTEIN IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT 8,266,749**

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I. INTRODUCTION

1. I, Dr. David S. Brookstein, submit this declaration on behalf of lululemon usa inc. (“Petitioner”). I understand that this declaration will be submitted as Exhibit 1003 in support of a Petition for *Inter Partes* Review (“IPR”) of U.S. Patent No. 8,266,749 (“the ’749 patent”) along with the exhibits listed in the table below.

Exhibit No.	Description
1001	U.S. Patent No. 8,266,749 to Dua, et al.
1002	Excerpts of Prosecution History for U.S. Patent No. 8,266,749
1004	International Patent Publication No. WO 92/22223 to Nishida (“Nishida”)
1005	English Translation of Nishida (Ex.1005)
1006	U.S. Patent No. 1,803,554 to Knilans (“Knilans”)
1007	U.S. Patent No. 2,147,197 to Glidden (“Glidden”)
1008	U.S. Patent No. 2,047,724 to Zuckerman (“Zuckerman”)
1009	Spencer, Knitting Technology: A Comprehensive Handbook and Practical Guide, Chapters 2-3, 6-9, 12-13, 16-18, 20, 24, and 28-29, Third Edition, 2001 (“Spencer”)
1010	Excerpts of Man-Made Fiber and Textile Dictionary, Fourth Edition, Issued 1978, Reprinted 1983
1011	JP 2002-65303A to Tani, et al. (“Tani”)
1012	English Translation of Tani (Ex.1011)
1013	U.S. Patent No. 5,345,638 to Nishida (“Nishida-US”)

Exhibit No.	Description
1014	Curriculum Vitae of Dr. David S. Brookstein
1015	Joint Disputed Claim Terms Chart, <i>Nike, Inc. v. lululemon usa inc.</i> , C.A. No. 1:23-cv-00771-AS (S.D.N.Y.)
1016	Lewis, et al., A Machine Knitter's Guide to Creating Fabrics, Part 1: Chapters 1-2 and Part 2: Chapters 1, 4, 6, and 13, 1986
1017	U.S. Patent No. 2,675,631 to Doughty ("Doughty")
1018	<i>Adidas AG v. Nike, Inc.</i> , IPR2016-00922, Paper 2 (Petition for <i>Inter Partes</i> Review) (P.T.A.B. Apr. 19, 2016)
1019	<i>Adidas AG v. Nike, Inc.</i> , IPR2016-00922, Paper 6 (Institution Decision) (P.T.A.B. Oct. 10, 2016)
1020	<i>Adidas AG v. Nike, Inc.</i> , IPR2016-00922, Paper 9 (Patent Owner Response) (P.T.A.B. Jan. 23, 2017)
1021	<i>Adidas AG v. Nike, Inc.</i> , IPR2016-00922, Paper 21 (Final Written Decision) (P.T.A.B. Oct. 19, 2017)
1022	<i>Adidas AG v. Nike, Inc.</i> , IPR2016-00922, Paper 31 (Decision on Remand) (P.T.A.B. Feb. 19, 2019)
1023	Wingate, Excerpts of Fairchild's Dictionary of Textiles, Sixth Edition, 1979

2. This declaration is provided after my review and analysis of the '749 patent, the prior art, relevant background technology, and is also based on my education and experience, as well as additional materials identified herein.

II. BACKGROUND AND QUALIFICATIONS

3. I am qualified to testify as an expert in this case. I was awarded a Bachelor of Textile Engineering degree from the Georgia Institute of Technology

(“Georgia Tech”) in 1971, a Master of Science degree in Textile Technology from the Massachusetts Institute of Technology (“MIT”) in 1973, and a Doctor of Science degree in the field of mechanical engineering from MIT in 1976.

4. I was a professor of Textile Engineering at Georgia Tech from 1975-1980. I was Associate Director of Albany International Research Co. (formerly Fabric Research Laboratories) from 1980-1994. I was Dean of the School of Engineering and Textiles and Executive Director of Research at Philadelphia University (formerly Philadelphia College of Textiles and Science) from 1994 to 2010. In 2010, I was appointed Executive Dean for University Research at Philadelphia University and served in that position through June 2012. In July 2012, I resigned from Philadelphia University to become Dean of the Science, Technology, Engineering, and Mathematics Division of Montgomery County Community College in Pennsylvania. In August 2014, I was appointed Professor of Mechanical Engineering and Director of Undergraduate Affairs at the Temple University College of Engineering, and in July 2017 I was promoted to Senior Associate Dean for Undergraduate Studies at the Temple University College of Engineering. I retain my rank of Professor of Mechanical Engineering and I am responsible for the capstone senior design course required of all engineering graduates. In 1995 I was elected by my peers as a Fellow of the American Society of Mechanical Engineers, which is an honorific awarded to only about 1% of its members. In 1992 I was

elected by my peers as a Fellow of The Textile Institute (United Kingdom). In 1998 I was awarded the ASTM Harold Dewitt Smith Award for textile fiber utilization. In 1993 I was awarded the Techtextil Innovation Prize (Germany). I have conducted research on knitting when I was employed at the Albany International Research Co. (formerly Fabric Research laboratories, Inc.). I taught courses in knitting technology during my period as an assistant professor of textile engineering at Georgia Tech and as Dean of Engineering and Textiles at Philadelphia University (formerly Philadelphia College of Textiles and Science).

5. I am the named inventor on 13 U.S. patents, all of which relate to the field of structures made using the principles of textile engineering and science.

6. I attended the 12th International Textile Machinery Exhibition (ITMA 95) in 1995 held in Milan, Italy, where I saw the Shima Seiki WHOLEGARMENT® flat weft knitting machine and learned about its capabilities.

7. A copy of my curriculum vitae, provided as Exhibit 1014, contains further details concerning my education, experience, publications, patents, and other qualifications to render an expert opinion in this matter.

8. I am being compensated for my work in this matter at my standard hourly rate for consulting services. My compensation in no way depends on the outcome of this proceeding. I have no personal or financial stake or interest in the outcome of this proceeding.

9. I understand that Petitioner will cite and rely on significant portions of my testimony and analysis set forth in this declaration in support of its Petition challenging the patentability of the '749 patent. I have not been provided or reviewed the Petition or any drafts of the Petition, and, thus, the Petition or drafts of the Petition have not influenced my testimony or analysis set forth in this declaration.

10. Between now and such time that I may be asked to testify, I expect to continue my review, evaluation, and analysis of evidence presented before and/or at the hearing. I expect to review the declarations and other evidence submitted by Nike's experts. I reserve the right to amend or supplement this declaration, as appropriate, after considering any opinions set forth by Nike's experts. In the event that additional relevant information becomes available to me, I also reserve the right to review and consider that information in further developing or refining my opinions.

III. LEGAL PRINCIPLES

11. I am not an attorney or patent agent. Therefore, in formulating my opinions and conclusions in this proceeding, I have been provided with an understanding of the relevant aspects of U.S. patent law that govern the issues of patent validity by counsel for the Petitioner.

A. Prior Art

12. I understand that, in this IPR proceeding, the prior art to the '749 patent includes patents and printed publications in the relevant field(s) that predate the '749 patent's priority date.

B. Anticipation

13. I understand that a person cannot obtain a patent if someone else already made an identical invention, which is referred to as "anticipation." I understand that to anticipate a claim, each and every element in the claim must be, as properly construed, present in a prior art reference either expressly and/or inherently.

C. Obviousness

14. I understand that a claim of a patent may be obvious to a person of ordinary skill in the art if the differences between the subject matter set forth in the patent claim and the prior art are such that the claimed subject matter as a whole would have been obvious at the time of the invention.

15. I understand that obviousness is a determination of law based on various underlying determinations of fact. In particular, these underlying factual determinations include (1) the scope and content of the prior art; (2) the level of ordinary skill in the art at the time the claimed invention was made; (3) the differences between the claimed invention and the prior art; and (4) the extent of any

proffered objective “indicia” of non-obviousness. I understand that the objective indicia, also known as secondary considerations, which may be considered in such an analysis include, among other factors: the commercial success of the patented invention (including evidence of industry recognition or awards), the existence of a long-felt but unmet need in the field satisfied by the invention, the failure of others to arrive at the invention, industry acquiescence and recognition of the invention, initial skepticism of the invention by others in the field, the extent to which the inventors proceeded in a direction contrary to the accepted wisdom of those of ordinary skill in the art, and licensing of the patent.

16. In determining the scope and content of the prior art, I understand a reference is considered prior art for the obviousness analysis if it falls within the inventors’ field of endeavor. Additionally, a reference is prior art for the obviousness analysis, even if from a different field of endeavor, if it is reasonably pertinent to the particular problem for which the invention was made. A reference is reasonably pertinent if it is something a person of ordinary skill in the art would have looked to when attempting to solve the problem addressed by the patent at issue.

17. While multiple prior art references or elements may be combined to render a patent claim obvious, I understand that a patent claim composed of several elements is not proven obvious merely by demonstrating that each of its elements

was, independently, known in the prior art. I understand that I should consider whether there is an “apparent reason” or motivation to combine the prior art references or elements in the way the patent claims. It is my further understanding that the law recognizes several rationales for combining references or modifying a reference to show obviousness of claimed subject matter. Some of these rationales include: combining prior art elements according to known methods to yield predictable results; simple substitution of one known element for another to obtain predictable results; a predictable use of prior art elements according to their established functions; applying a known technique to a known method or product ready for improvement; and choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success.

18. I understand the obviousness analysis must be performed from the perspective of a person of ordinary skill in the art at the time of the alleged invention. This is to avoid using impermissible hindsight in the analysis. The claims of the patent must not be used to provide a road map for obviousness; instead, the claims would have been obvious if a person of ordinary skill in the art would have been motivated to combine the teachings of the prior art to arrive at the claimed invention and had a reasonable expectation of success in doing so.

19. An obviousness analysis also must consider whether there are additional factors that would indicate that the invention would not have been

obvious. These factors include whether there was: (i) a long-felt need in the industry; (ii) any unexpected results; (iii) skepticism of the invention; (iv) a teaching away from the invention; (v) commercial success; (vi) praise by others for the invention; and (vii) copying by others. I am not aware of any evidence that would suggest that claims 1-21 (“challenged claims”) of the ’749 patent would have been non-obvious based on these additional factors.

IV. THE ’749 PATENT

A. Overview of the ’749 Patent

20. The ’749 patent provides that it discloses an article of footwear with an upper which incorporates a knitted textile element. Ex.1001, 3:27-39. According to the ’749 patent, the knitted textile element “may be formed as part of a larger textile element” (*id.*, 5:45-46), such as a textile element 60 with multiple knitted textile elements 40 (colored green) and a surrounding structure (colored purple) as shown in Figure 9 below. *Id.*, 7:53-60.

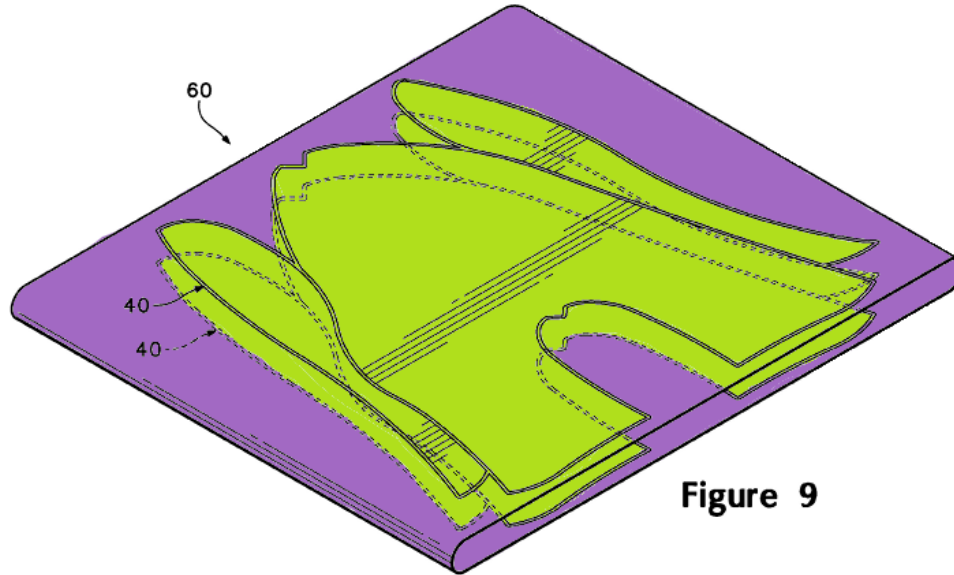


Figure 9

Id., Fig. 9 (annotated). Figure 9 shows textile structure 60 “exhibit[ing] a generally cylindrical configuration” because textile structure 60 was knit on a “wide-tube circular knitting machine.” *Id.*, 7:38-40, 11:15-18. A POSA would have known that this type of knitting machine produces a weft knit fabric.

21. The '749 patent discloses the following about a circular knitting machine:

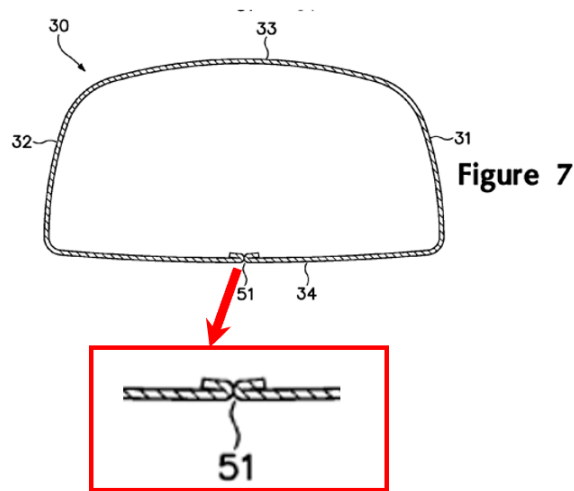
A wide-tube circular knitting machine, as produced by Santoni S.p.A., forms a generally cylindrical textile structure and is capable of forming various types of stitches within a single textile structure. In general, the wide-tube circular knitting machine may be programmed to alter the design on the 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.

Id. 7:26-37.

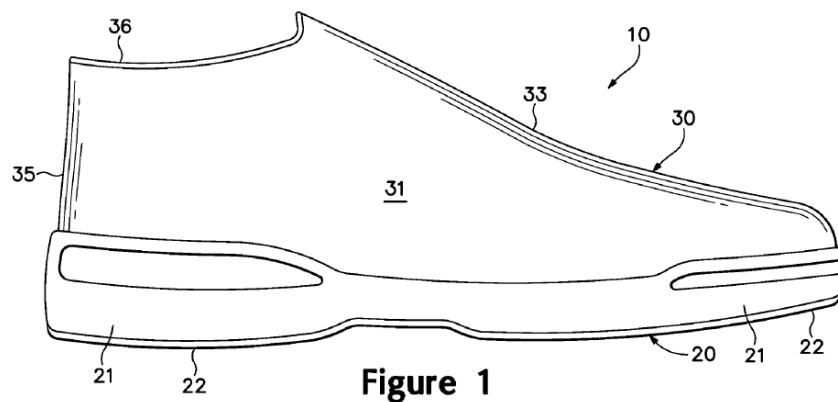
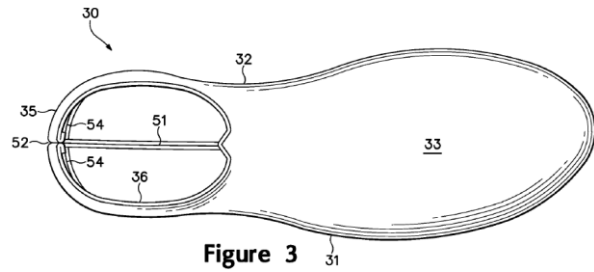
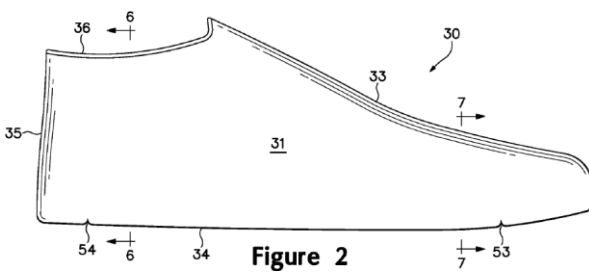
removed from textile structure 60 is shown in Figure 8 of the '749 patent.



13. This is shown in Figure 7 of the '749 patent.



Id., Fig. 7 (annotated, partially magnified). The '749 patent discloses that “[o]nce textile element 40 is removed from textile structure 60, seams 51-54 may be formed [as shown in Figures 2 and 3 below] and textile element 40 may be incorporated into footwear 10 [as shown in Figure 1 below].” *Id.*, 8:6-8.



Id., Figs. 1-3.

23. The '749 patent discloses other implementations in which textile structure 60 is “formed with the jacquard double needle-bar raschel,” which results in “a flat configuration” rather than the cylindrical configuration shown in Figure 9. *Id.*, 11:15-18. A POSA would have known that a raschel knitting machine produces a warp knit fabric.

24. The '749 patent states that textile materials for footwear may be selected for the properties of wear-resistance, flexibility, and air-permeability, as well as moisture wicking which removes perspiration from the foot. *Id.*, 10:40-48.

25. The '749 patent provides that different textures may be included in different areas of the knitted textile element. *Id.*, 9:18-28. Such different textures exhibit “aesthetic differences” or “structural” differences like varying stretch, wear resistance, or air-permeability. *Id.*, 9:42-46. The '749 patent discloses that such different textures may be formed by varying “stitch configuration” and “yarn type.” *Id.*, 9:58-10:7, 3:33-37. Figures 10 and 11 illustrate uppers with multiple textures, with the textures being designated with the reference numbers 46'-47' and 46''-48''. *Id.*, 9:18-57.

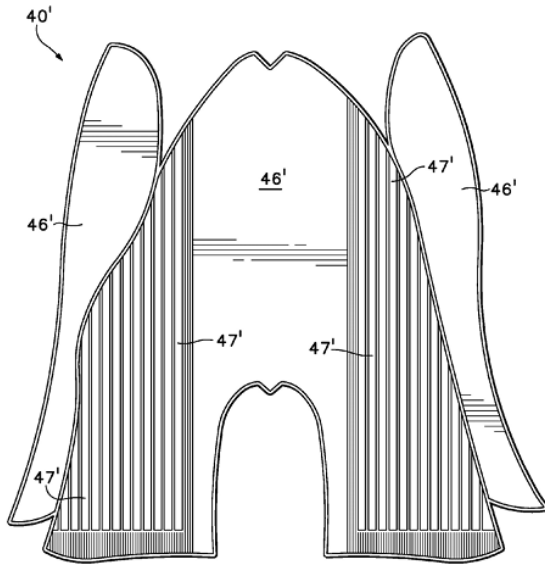


Figure 10

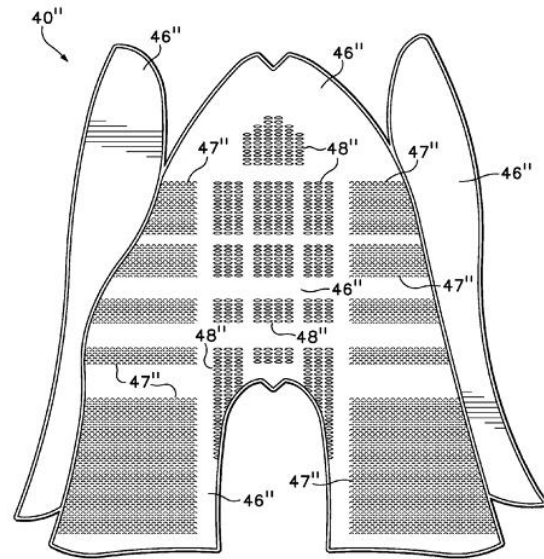


Figure 11

Id., Figs. 10-11. For example, textile element 40'' includes three areas that each have a different texture, where texture 46'' is generally smooth, texture 47'' is generally rough in comparison with first texture 46'', and texture 48'' corresponds to an instep region (i.e., the part of the upper which covers a top of the foot) and is formed to include a plurality of apertures that extend through textile element 40''. *Id.*, 9:31-49. The '749 patent also provides that one texture in the knitted textile element can vary from one texture in the surrounding area of a larger textile element from which the knitted textile element is removed. *Id.*, Claim 1.

26. The '749 patent acknowledges that knitting machines for constructing the textile elements disclosed were known. *Id.*, 7:9-25, 8:61-9:4. The '749 patent does not provide that any modifications were required to the conventional operation of such known knitting machines to implement the disclosed methods.

B. Claims of the '749 Patent

27. I have included independent claim 1 below with bracketed labels added for convenient referencing to the claim limitations.

Claim 1	
1[pre]	A method of manufacturing an article of footwear, the method comprising:
1[a]	simultaneously knitting a textile element with a surrounding textile structure, the knitted textile element having at least one knitted texture that differs from a knitted texture in the surrounding knitted textile structure;
1[b]	removing the knitted textile element from the surrounding knitted textile structure;
1[c]	incorporating the knitted textile element into an article of footwear.

28. I have included independent claim 13 of the '749 patent below with bracketed labels added for reference:

Claim 13	
13[pre]	A method of manufacturing an article of footwear, the method comprising:
13[a]	knitting a first textile element and a second textile element simultaneously with knitting a surrounding textile structure, the first knitted textile element located within a first portion of the knitted textile structure, the second knitted textile element located within a second portion of the knitted textile structure,
13[b]	varying at least one of the types of stitches or the types of yarns in the knitted textile structure to impart a texture to the first and second knitted textile elements different from a texture of the knitted textile structure extending between the first and second portions;
13[c]	removing the first and second knitted textile elements from the knitted textile structure;
13[d]	incorporating at least one of the first and second knitted textile elements into the article of footwear.

C. Prosecution History of the '749 Patent

29. I have reviewed the prosecution history of the application that led to the '749 patent. During prosecution of the '749 patent, the Examiner issued two substantive office actions. Ex.1002, 40-45, 22-27. The office actions rejected claims 1-8, 11-18, and 21, which are the same as issued claims 1-8, 11-18, and 21, as being anticipated by U.S. Patent No. 5,345,638 (Nishida-US – Ex.1013). *Id.* Nishida-US is a U.S. national phase of a reference, the Nishida PCT application

(Nishida – Ex.1004/Ex.1005), which is relied on in grounds of my analysis. In addition, the office actions indicated claims 9, 10, 19, and 20 include allowable subject matter. *Id.* Claims 9, 10, 19, and 20 recite types of knitting machines (i.e., claims 9 and 19 recite that the article of footwear is produced on “a wide-tube circular knitting machine” and claims 10 and 19 recite that the article of footwear is produced on “a jacquard double needle-bar raschel knitting machine”) and are the same as issued claims 9, 10, 19, and 20.

30. In reply to the first office action, Patent Owner asserted that Nishida-US does not disclose “a knitted textile element *simultaneously* formed with a knitted textile structure during a knitting process.” *Id.*, 35. Patent Owner specifically stated that Nishida-US discloses knitting a backing material and later knitting layouts onto the backing material. *Id.*, 35-36. Next, the Examiner rejected this assertion. *Id.*, 24-26. Patent Owner subsequently conducted an Examiner interview and stated that Nishida-US does not disclose at least one texture in the knitted textile element differing from a texture in the surrounding textile structure. *Id.*, 20, 16-17. Patent Owner then filed a second reply and asserted that Nishida-US fails to disclose simultaneous knitting and differing textures as claimed. *Id.*, 16-17. Then, the Examiner allowed the claims. *Id.*, 3-8.

31. The Examiner was mistaken to accept Patent Owner’s assertions that Nishida-US does not disclose the limitations of claims 1 and 13. Nishida-US

discloses simultaneously knitting a textile element and surrounding textile structure, and also that the knitted textile element has at least one texture differing from a texture in the surrounding textile structure. I also understand that the Board agrees with my conclusion and found in the *Adidas IPR* that Nishida-US discloses the limitations of claims 1 and 13. See Ex.1022¹, 29-31.

D. Adidas IPR

32. I understand that in 2016 Adidas filed a petition for IPR of the '749 patent (*Adidas AG v. Nike, Inc.*, IPR2016-00922 (“*Adidas IPR*”)). Ex.1018. In the petition, Adidas relied on a combination of Nishida-US and U.S. Patent No. 3,985,003 (“Reed”), among other combinations. Ex.1018, 7. The Board instituted an IPR proceeding based on the petition. Ex.1019. I understand that the Board provided in its Institution Decision that “[a]lthough [Adidas] appears to identify a disclosure from Nishida[-US] in its claim charts ... as teaching each of the limitations of claims 1 and 13, [Adidas] does not assert expressly that Nishida[-US] *alone* renders claim 1 or 13 unpatentable. Therefore although [Adidas] may argue and present evidence that Nishida[-US] alone renders claim 1 or 13 unpatentable, we decline to institute grounds not expressly asserted by [Adidas].” *Id.*, 16.

¹ I generally cite to Ex.1022 rather than Ex.1021 because Ex.1022 is the most recent Final Written Decision in the *Adidas IPR*. The Board’s findings in Ex.1022 with respect to Nishida and Reed are substantively the same as those in Ex.1021, which is the original Final Written Decision.

33. I understand that because Adidas failed to show a POSA would have been motivated to combine Reed and Nishida-US, the Board determined that no claims were invalid over the combination of Reed and Nishida-US. Ex.1022, 38-50. I also understand that Patent Owner appealed the Board's findings regarding the disclosure in Nishida-US, and the Federal Circuit affirmed based on the Board's motivation to combine analysis. *See Adidas AG v. Nike, Inc.*, 963 F.3d 1355 (Fed. Cir. 2020).

V. LEVEL OF A PERSON OF ORDINARY SKILL IN THE ART (POSA)

34. I have been informed by counsel for Petitioner that for purposes of assessing the obviousness of the '749 Patent, the level of skill possessed by the hypothetical person of ordinary skill in the art is informed by several factors. These factors include the type of problems encountered in the relevant art, the prior art solutions to those problems, the rapidity with which innovations are made in the relevant art, the sophistication of the relevant technology, and the educational level of active workers in the field.

35. The relevant field of the '749 patent relates to knitted textile elements for footwear articles, such as an article of footwear comprising an upper that includes a knitted textile element. Ex.1001, Abstract, 1:20-23.

36. I consider myself to be an expert in the relevant field and have taught courses dealing with knitting to both undergraduate and graduate students at the

Georgia Institute of Technology (Georgia Tech) School of Textile Engineering and at Philadelphia University (formerly Philadelphia College of Textiles and Science). Thus, I am at least a POSA.

37. In my opinion, a POSA at the relevant time period, which I understand to be around the time of the earliest priority application, March 2004, would have had a bachelor's degree in textile engineering, mechanical engineering, or similar technical degree and at least 3 years of experience working with knitted textiles for use in fabric-based articles, including apparel such as footwear. For individuals with different educational backgrounds, a person could still be of ordinary skill in the art provided that person's additional experience compensates for any differences in that person's education stated above. This education and background provide the necessary training and understanding of the manufacture of the knitted elements described and claimed in '749 patent. Thus, based on my experience in the field of textile engineering, the person of skill would have the education and experience described above. All of my opinions set forth herein are provided from the perspective of a person having ordinary skill in the art ("POSA").

VI. CLAIM CONSTRUCTION

38. I understand the Patent Trial and Appeal Board ("PTAB") construes the claims using the same claim construction standard that would be used in a district

court case. Under this standard, I understand that claims are generally given their ordinary and customary meaning, as understood by a POSA.

39. I understand that Petitioner and Patent Owner agreed in the district court case on constructions for certain claim terms and proposed different constructions for other terms. I also understand that in the *Adidas IPR*, the parties Adidas and Patent Owner proposed constructions for particular claim terms of the '749 patent, and the Board in that IPR issued a Final Written Decision construing certain claim terms.

A. “unitary construction” (Claims 11 and 21)

40. The phrase “unitary construction” appears in claims 11 and 21 of the '749 patent. In the *Adidas IPR*, the Board construed this phrase to mean “a configuration wherein portions of a textile element are not joined together by seams or other connections.” Ex.1022, 16. I further understand that in the co-pending litigation, the parties have agreed that the phrase “unitary construction” in claims 11 and 21 means a “configuration wherein portions of a textile element are not joined together by seams or other connections.” Ex.1015, 11.

41. I have applied this construction throughout my opinions.

B. “a first area and a second area with a unitary construction” (Claims 11 and 21)

42. The phrase “a first area and a second area with a unitary construction” appears in claims 11 and 21 of the '749 patent. I understand that in the *Adidas IPR*,

the Board construed this phrase to mean “a textile element having a unitary construction *and* having a first and second area.” Ex.1022, 15-16. I further understand that the parties agreed to this same construction of this phrase in the co-pending litigation. Ex.1015, 11.

43. I have applied this construction throughout my opinions.

C. “wide-tube circular knitting machine” (Claims 9 and 19)

44. In the *Adidas IPR*, the Board determined that “the broadest reasonable interpretation of the term ‘wide-tube circular knitting machine’ is ‘a circular knitting machine forming body garment sized, tubular textile structures, including those having a diameter that ranges from 10 inches to 20 inches.’” Ex.1022, 16. I have applied this construction throughout my opinions.

D. “impart” (Claims 11 and 21)

45. In the *Adidas IPR*, the Board stated “to the extent any construction of this term is necessary, we find that the broadest reasonable interpretation of the term ‘impart’ is ‘to give, convey, or grant from.’” Ex.1022, 17. I have applied this construction throughout my opinions.

E. “texture” (Claims 8, 11, and 21)

46. In the *Adidas IPR*, the Board stated “to the extent any construction of this term is necessary, we find that the broadest reasonable interpretation of the term ‘texture’ in the context of claims 11 and 21 is ‘a non-smooth surface formed while

simultaneously knitting a textile element with a surrounding textile structure.” Ex.1022, 18-19². I have applied this construction in my opinions for claims 8, 11, and 21.

F. Other Terms

47. For all other terms of the ’749 patent’s claims, I have given the terms their plain and ordinary meaning as understood by a POSA having read the specification of the ’749 patent.

VII. TECHNOLOGY BACKGROUND

48. This brief technical overview gives background on some concepts familiar to a POSA that are relevant to the discussion herein. However, it is not a full overview of knitting or the concepts known to a POSA by 2004. Both Spencer (Ex.1009) and the Machine Knitter’s Guide (Ex.1016) provide numerous additional basic knitting concepts that would have been familiar to a POSA by 2004.

49. Knitting is relatively old technology, and examples have been discovered that date back to at least the 1300s. Ex.1009, 3-4. Over the centuries, knitting technology developed and became more sophisticated. Some mechanically-controlled weft knitting machines were invented by the mid-1700s, with warp knitting machines being developed slightly later. *Id.*, 8-9. Weft knitting produces a

² The Board indicated in its header for its construction of “texture” that the term applies to “*claims 8, 11, and 21.*” Ex.1022, 17-19.

fabric with one continuous yarn running widthwise across the fabric and forming all of the loops in each course. Warp knitting produces a fabric in which multiple yarns generally run lengthwise, but in a zig-zag pattern that forms loops in two or more wales. Example weft and warp knitting processes are illustrated below:

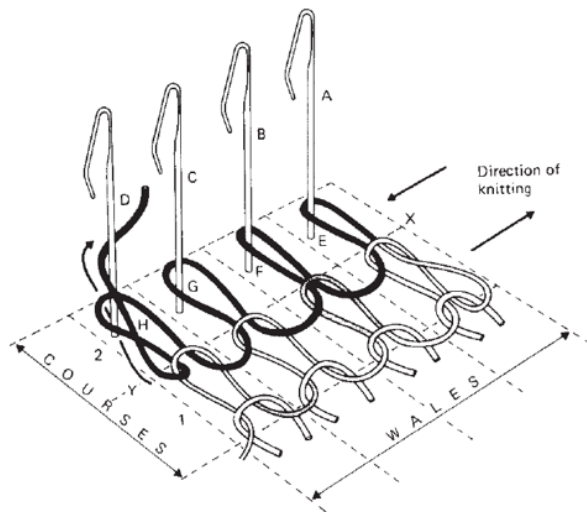


Fig. 6.1 Weft knitting.

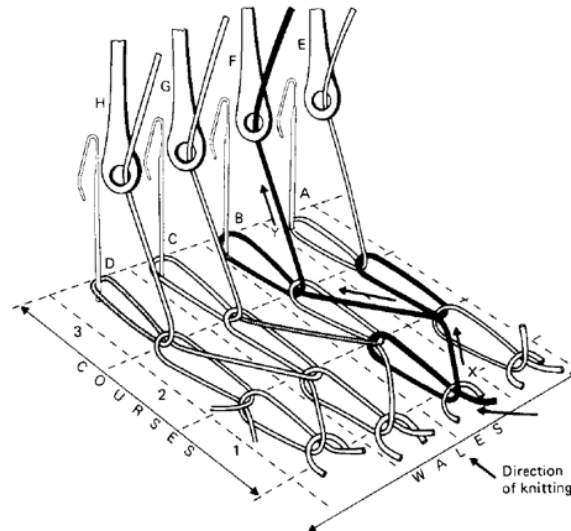
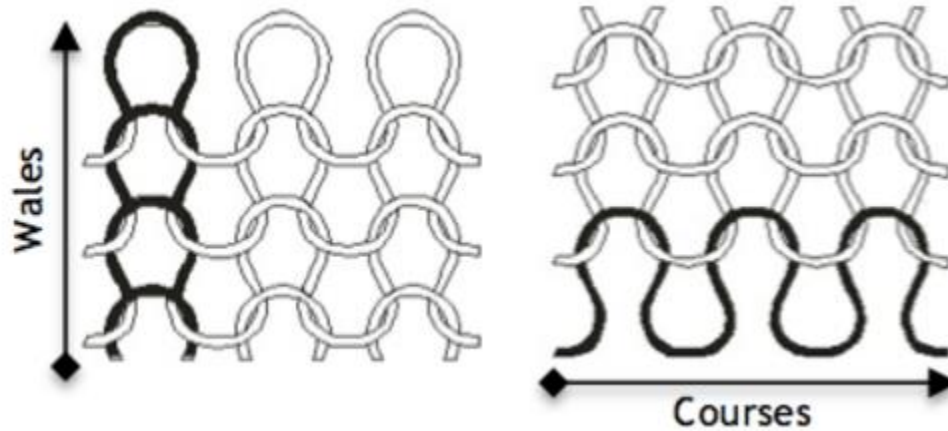


Fig. 6.2 Warp knitting.

Id., 3, 27-28. By the early 2000s, knitting was advanced and knitting machines were electronically-controlled and thus programmable to allow the knit fabric designer to select the yarn and the stitch to be used in particular sections of the material. *Id.*, 79-89.

50. A POSA would have known that there are primary base stitches in weft knitted structures, including a plain or jersey stitch, a tuck stitch, and a rib stitch. A plain or jersey stitch has the structure shown below.



Plain or jersey stitch weft knitted fabrics can be knitted on “single bed” knitting machines or “double bed” knitting machines. Plain or jersey weft knit fabrics can be made on a circular machine or a flat machine. The drawing below depicts a section of a circular knitting machine that produces a plain or jersey stitch:

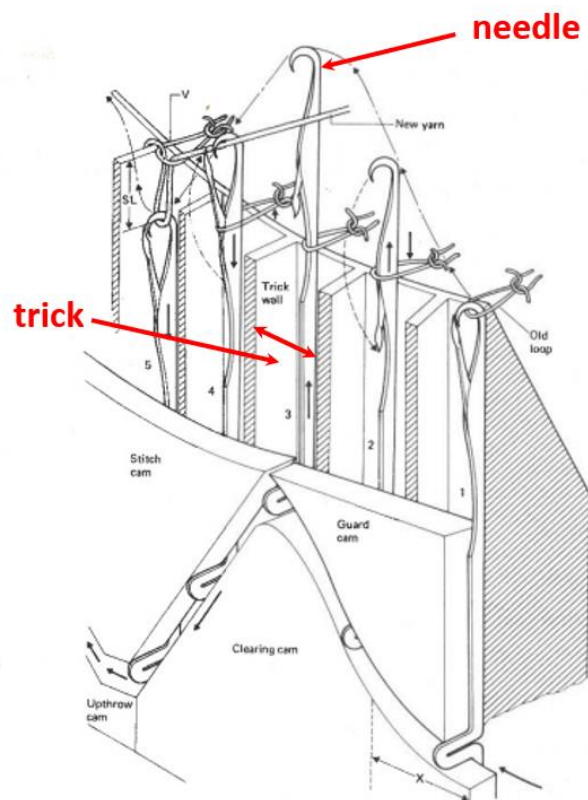
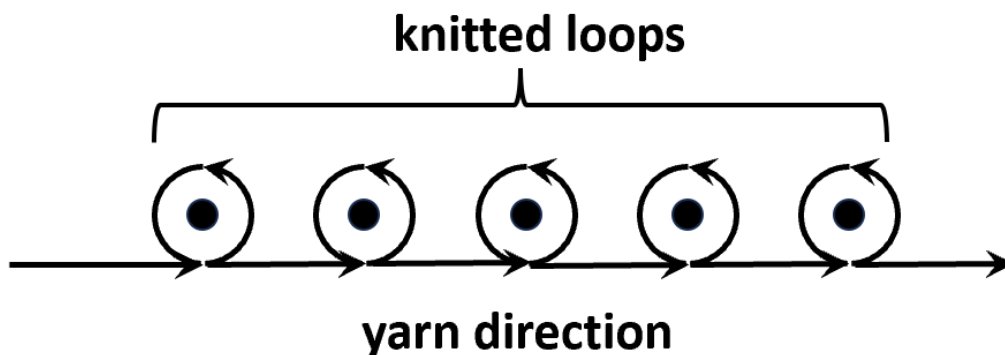
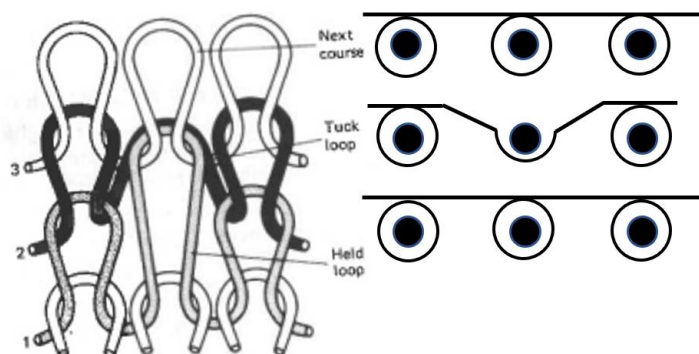


Fig. 3.4 Knitting action of the latch needle.

Id., 21 (annotated). A POSA would have also known that the plain or jersey stitch can be represented by the notation shown below, which is called “point” diagram. The solid dots represent the knitting needle, and the yarn that is being knitted is represented by the solid line.



51. A tuck stitch is composed of a held loop. It is produced when a knitting needle holding its loop also receives the new loop which becomes a tuck loop because it is not intermeshed through the previous loop but is tucked behind it on the reverse side of the stitch. This is shown below with the accompanying “point” diagram:



Id., 73-74. The drawing below depicts a section of a knitting machine that produces a tuck stitch:

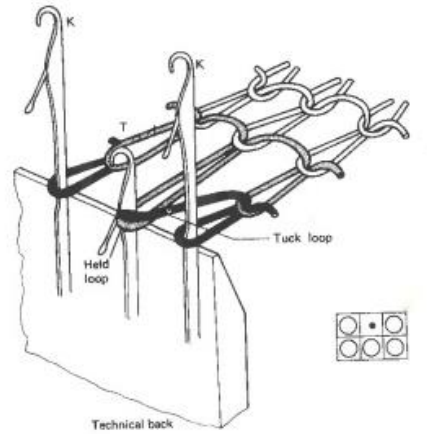
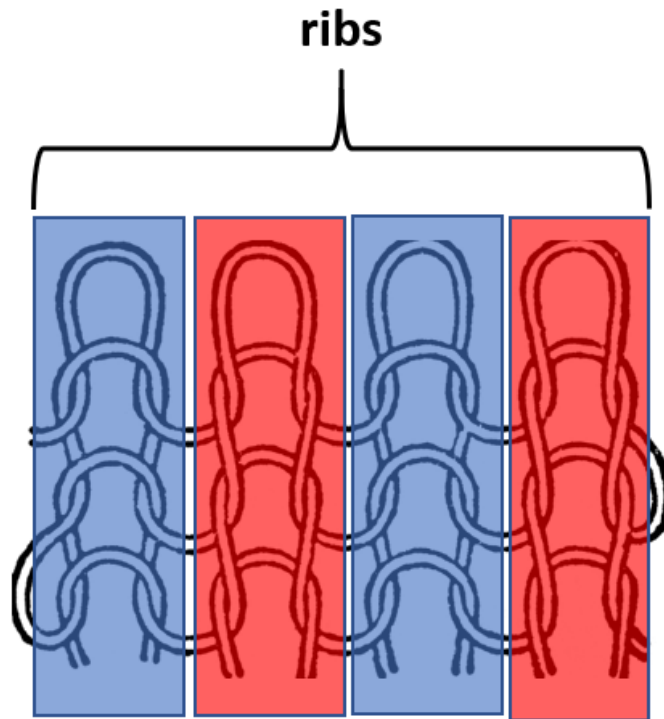


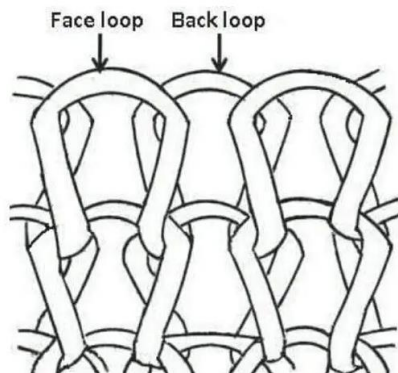
Fig. 9.4 Tuck stitch produced on a latch needle machine.

Id.

52. A rib stitch has the structure shown below wherein adjacent ribs are shaded to identify each rib.

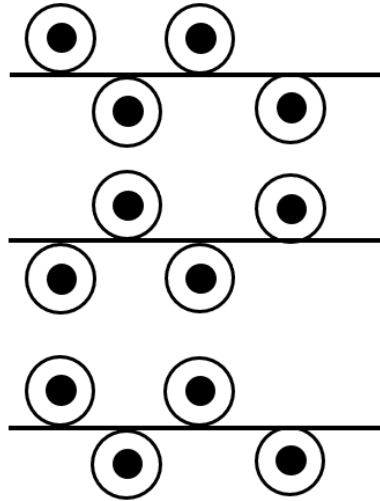


In contrast to knitting plain or jersey stitches and tuck stitches, a rib stitch can only be weft knitted on a double bed knitting machine (either circular or flat). Below is a diagram of the simplest rib knitted fabric and is known as a 1x1 rib.



A POSA would have known that the 1x1 rib stitch depicted above can be represented by the notation shown below, which is called “point” diagram. The solid dots

represent the knitting needle, and the yarn that is being knitted is represented by the solid line.



The drawing below depicts a section of a cylinder and dial circular knitting machine that is used to produce a rib stitch:

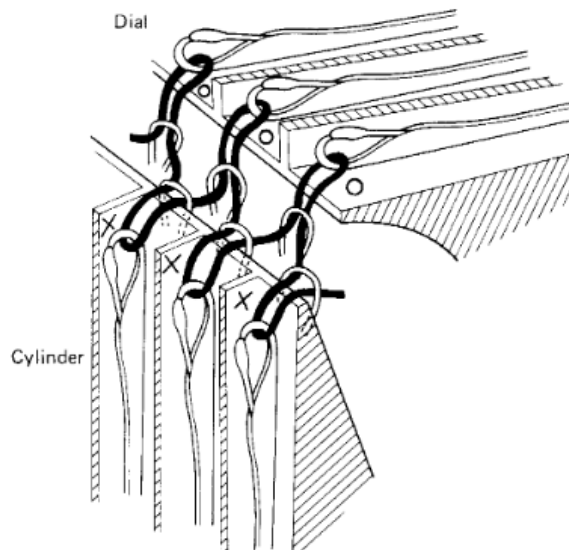


Fig. 7.7 Structure of 1 × 1 rib.

Id., 46.

53. By 2004, a POSA would have known that rib stitch weft knit fabrics can be knitted on a circular or V-bed flat weft knitting machine. The figure below shows a typical V-bed flat weft knitting machine.

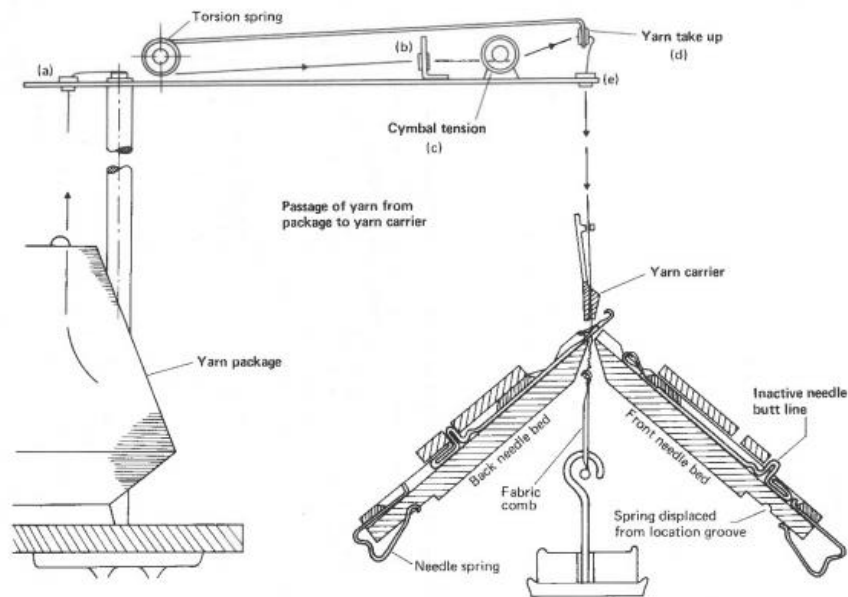
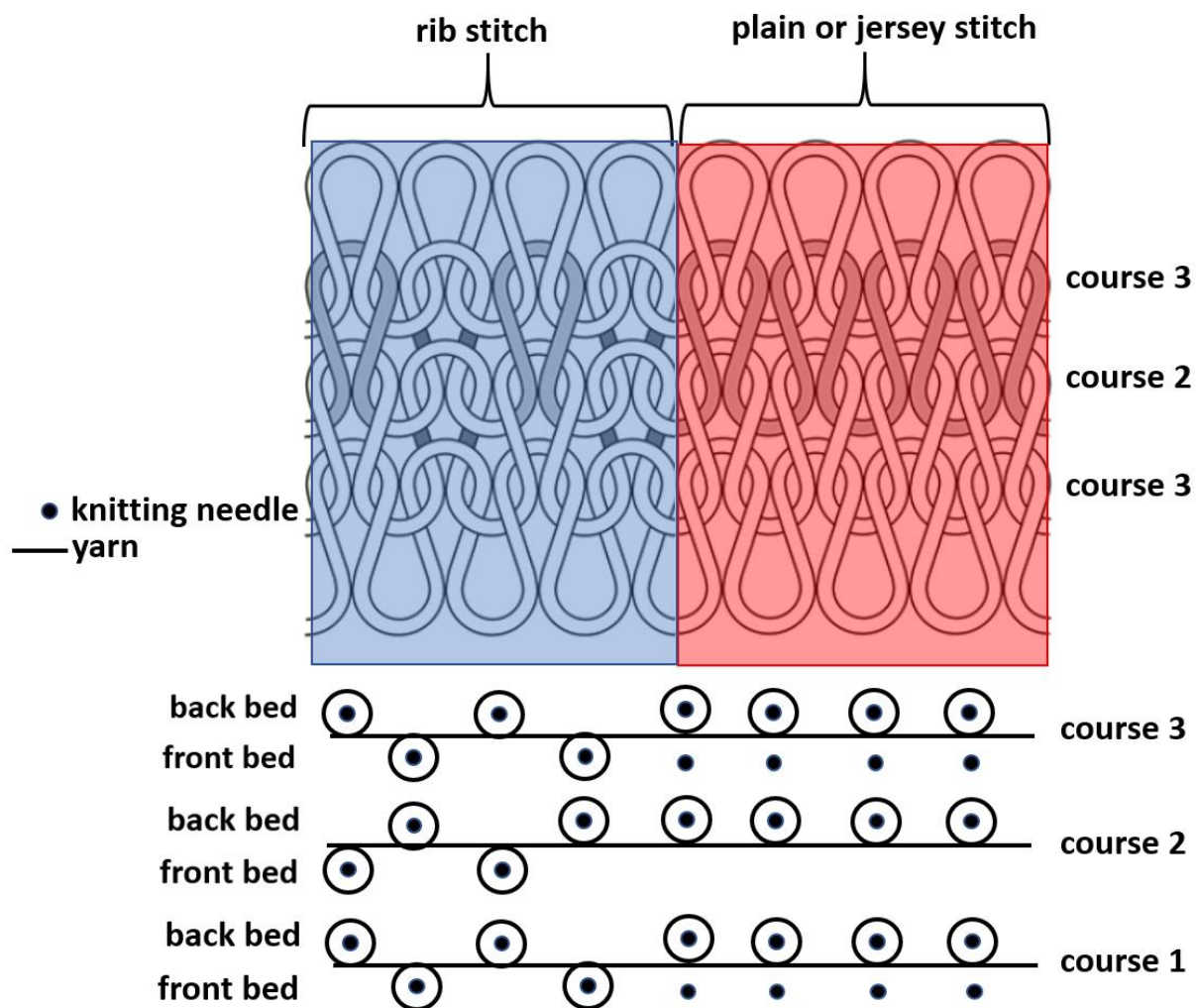


Fig. 18.1 Passage of yarn from package to yarn carrier.

Id., 137.

54. In 1995, at the 12th International Textile Machinery Exhibition (ITMA 95) held in Milano, Italy, Shima Seiki (one of the world's leading developers and manufacturers of weft knitting machines) presented its WHOLEGARMENT[®] knitting machine. While I was Dean of Engineering and Textiles at Philadelphia University, I viewed the presentation in person. The WHOLEGARMENT[®] knitting machine could produce any type of plain or rib knit constructions. When I saw this machine in 1995, I noted that it had multiple yarn carriers which enabled it to

simultaneously produce a single weft knitted fabric with multiple types of yarns and with multiple types of knit constructions (e.g., plain and rib). For example, this machine could produce a weft knitted fabric that could be shown by the point diagram below of three repeating courses. The colored shading below is used to show the difference in stitch configuration.



55. A POSA would have known that a warp knit fabric is a type of fabric in which the yarns generally run lengthwise in a zig-zag patterns, forming loops in two or more wales. Spencer devotes a full chapter to “[d]ouble needle bar warp

knitting machines.” Ex.1009, 195-207. A POSA would have known that different types of yarn may be knitted simultaneously by being fed to the knitting process by individual guides. This is shown in the annotated figure below:

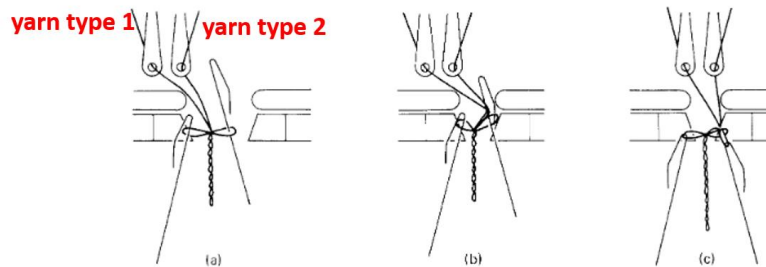


Fig. 29.3 Knitting action of bearded needle simplex machine.

Id., 198 (annotated). Below is an annotated drawing of a double needle bar jacquard raschel fabric:

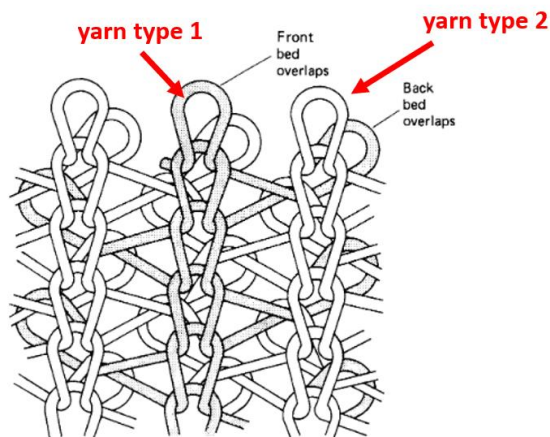


Fig. 29.2 Loop diagram of double faced double needle bar fabric.

Id., 197 (annotated).

56. A POSA would recognize that a knit fabric may be illustrated in either a “fabric view” or a “technical view.” Spencer contains examples of both below:

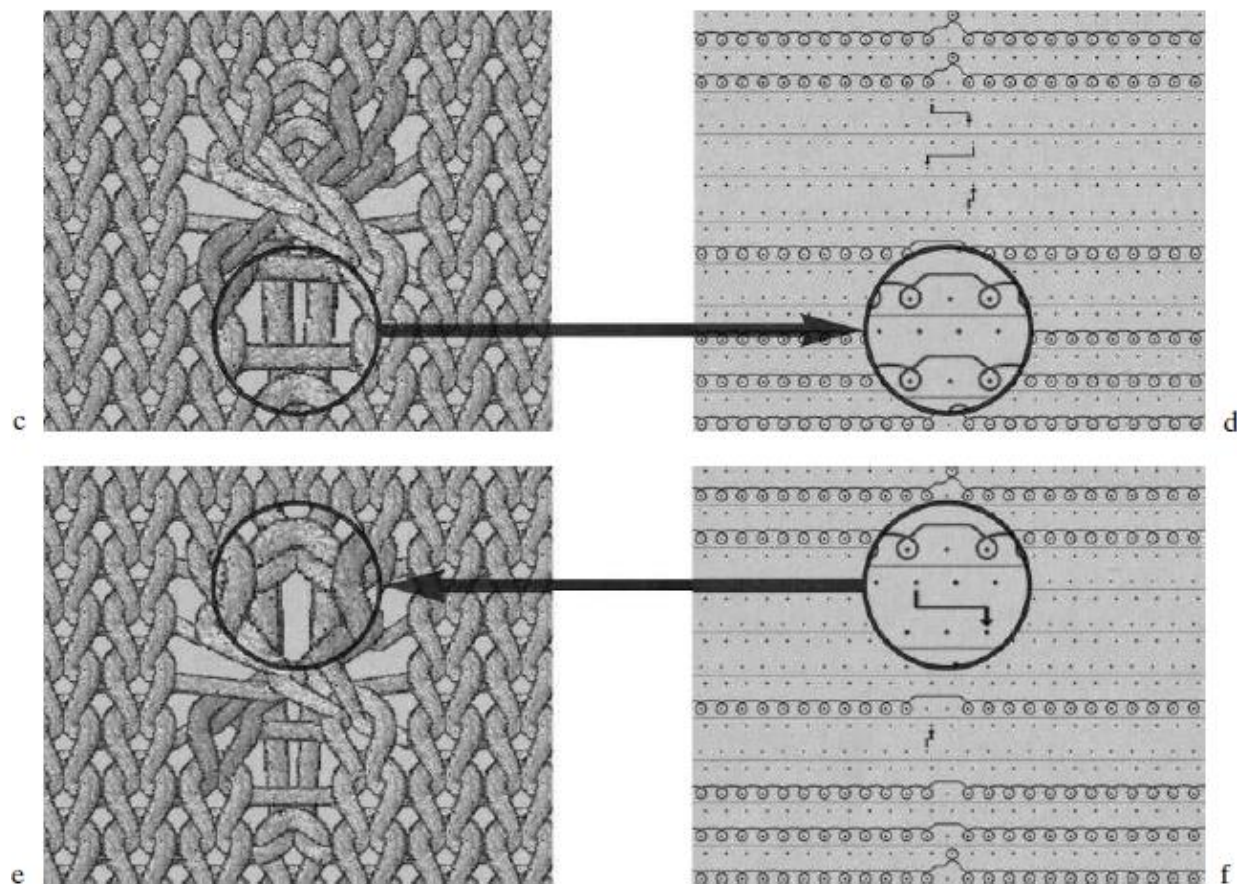


Fig. 12.5 Linked windows options of fabric view and technical view [Stoll].

Id., 87. As the name implies, the “fabric view” illustrates how the final fabric will appear on a stitch-by-stitch level. On the other hand, the technical view shows the stitch patterns being knit on each portion of the fabric. Each dot in the technical view represents a needle, and the lines looped around the needle represent the yarn. Ex.1016, 9.

57. In the technical views from Spencer, the machine is a double needle bed weft knitting machine because there are two rows of needles between each solid line. The technical view is particularly helpful in understanding the stitch

configurations that result in the appearance and texture shown in the fabric view. A POSA would have been familiar with both options to understand the nature of the article being knit.

58. In contrast to the plain knit where the fabric is knit on a single needle bed, the rib alternates between the two needle beds. The type of rib depends on the pattern of that alternation. The A x B terminology format refers to the number of needles that are utilized in a row on each needle bed. For example, a 2x2 rib indicates that two consecutive needles on the front needle bed are used, followed by two consecutive needles on the back needle bed. Similarly, a 6x3 rib indicates that six consecutive needles on the front needle bed are used followed by 3 consecutive needles on the back needle bed. *See* Ex.1009, 48-49. As Spencer notes, there are many other specific types of ribs that were known by 2004. *See id.* These different rib stitches were known to create a wide variety of textures on knit materials. *See, e.g.,* Ex.1016, 56-67 (illustrating fabric swatches made with numerous different rib configurations). Spencer illustrates this principle in the figure below, which shows the different textures created by varying the stitch type. Ex.1009, 118, 146-147.

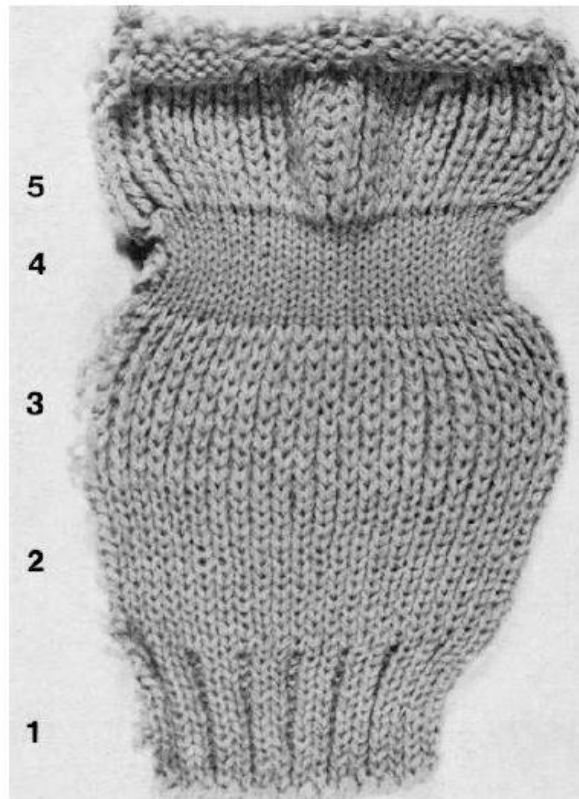


Fig. 16.13 Stitch shaping (1 = 2×2 rib; 2 = 1×1 rib; 3 = half-cardigan; 4 = tubular courses; 5 = full cardigan).

Id., 118.

59. With rib jacquards (and other stitch configurations), “[t]he surface texture of both face and backing ... is a direct result of the interaction between the stitches of the two surfaces. If the number of colors per row is changed, the texture may also change, even with the same cam setting.” Ex.1016, 23.

60. Another concept that warrants a brief discussion is the principle of racking. “Racking is a double bed technique whereby one bed is moved laterally” relative to the other bed. *Id.*, 68. “The V-bed flat machine is capable of knitting a unique range of racked rib structures (Fig. 18.7), based on the facility of racking one

needle bed by one or more needle tricks past the other needle bed, either towards the right or the left as and when required. Usually the needle set-out is 1 x 1 rib, or a modified version with selected needles selected out of action.” Ex.1009, 146-147. Spencer illustrates this principle in the following figure that I annotated and which shows the different textures created by varying the stitch configuration.

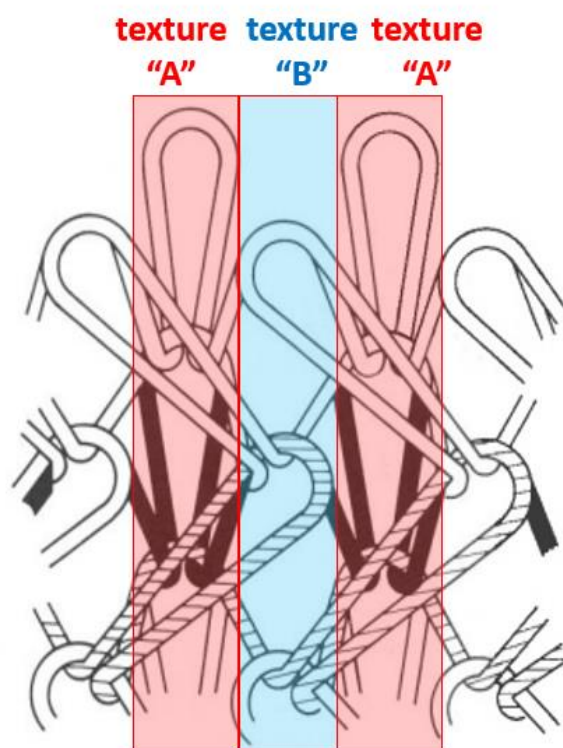
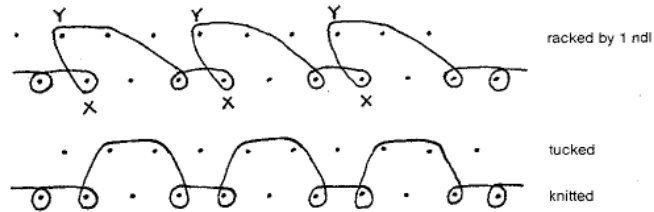


Fig. 18.7 Racked rib.

Id., 147 (annotated).

61. “[T]his sideways movement causes the stitches opposite each other on the two beds to be displaced in their consecutive order of knitting, and to be pulled or slanted diagonally between the beds.” Ex.1016, 68. The slant is permanently

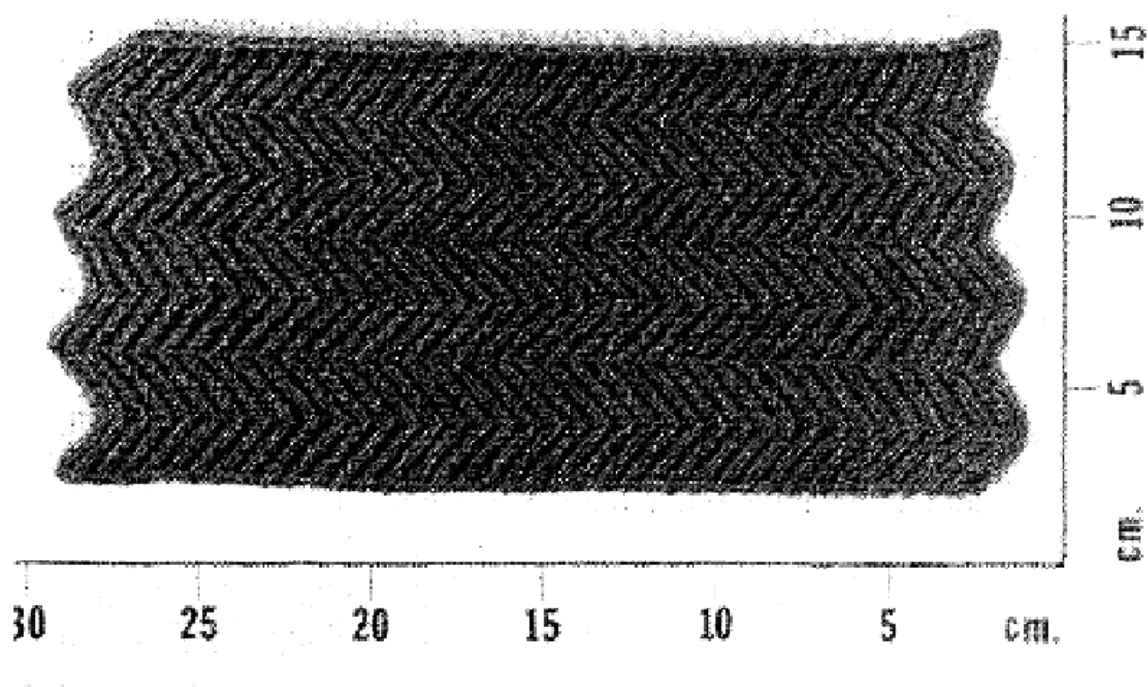
fixed in the fabric. *Id.* Racking can occur with many different stitches. *See id.* The diagram below illustrates racking with a 2x1 rib.



The diagram illustrates the fourth basic principle of racking. Set-up: 2x1 rib (plain dots are needles in NWP). Principle 4. Each stitch marked x on the front bed will show the effect of racking, since an occupied needle (marked y), which will knit on the next row, has crossed behind it, thus changing the consecutive knitting order of the needles. The other stitches on the front bed will remain straight.

Id., 70.

62. The result of racked stitch configurations similar to the technical diagram above is a “herringbone repeat,” which is created by alternative the direction of the racking and regular intervals. A swatch with a “herringbone repeat” is shown in the image below:



Id. (brightened to assist with viewing).

VIII. OVERVIEW OF GROUNDS

63. Below is a table listing the grounds of unpatentability for the '749 patent:

Ground	Reference(s)	Basis	Challenged Claims
1	Nishida	§102	1-8 and 12-18
2	Nishida in view of a POSA's general knowledge	§103	9-10 and 19-20
3	Zuckerman	§102	1-3, 5-8, 11, 13-17, 21
4	Zuckerman in view of a POSA's general knowledge	§103	3, 9-10, 14, and 19-20
5	Zuckerman and Doughty	§103	12
6	Nishida in view of Zuckerman	§103	11 and 21

Nishida, Zuckerman, and Doughty are from the same field as the '749 patent, for example, knitted textile elements for footwear articles. Ex.1001, Abstract; Ex.1005, 5; Ex.1008, 1(L):1-4, Abstract; Ex.1017, 1:22-29. Nishida and Zuckerman are pertinent to a problem the '749 patent inventors were focused on, for example, knitting an upper and a surrounding area as part of a single knitting process, as I explain below. Zuckerman and Doughty are additionally pertinent to a problem the '749 patent inventors were focused on, for example, constructing durable footwear, as I explain below.

IX. GROUND 1: NISHIDA ANTICIPATES CLAIMS 1-8 AND 12-18

A. Summary of Nishida (Ex.1004/1005)

64. Nishida (International Publication Number WO 92/22223) was originally published in German in December 1992. Ex.1004. Petitioner has provided a translated copy of Nishida (Ex.1005), which I rely on herein.

65. Nishida describes a method for making shoe uppers from a knitted material sheet. Ex.1005, 5-7. Nishida refers to its knitted material sheet as “material web 1.” *Id.* Material web 1 is constructed to include different parts, including one part which is incorporated into a shoe (referred to by Nishida as “unwound web part(s) 2”) and another part which is not incorporated into a shoe (referred to by Nishida as “surface areas 1.1”). Figure 1 below illustrates unwound web part(s) 2 (colored green) and surface areas 1.1 (colored purple).

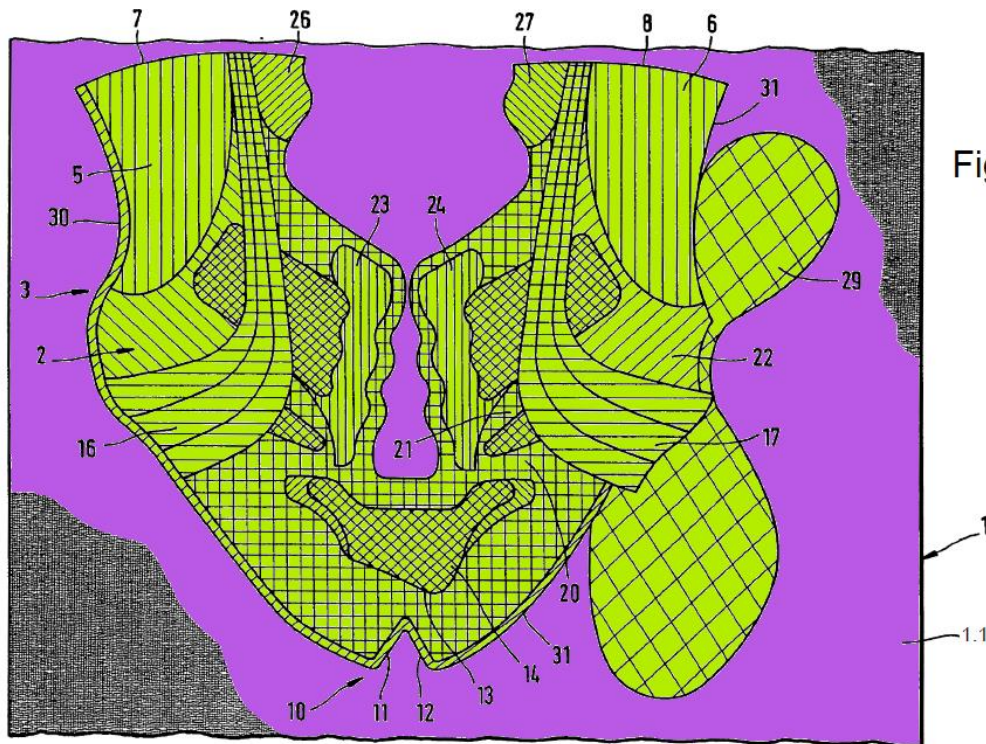
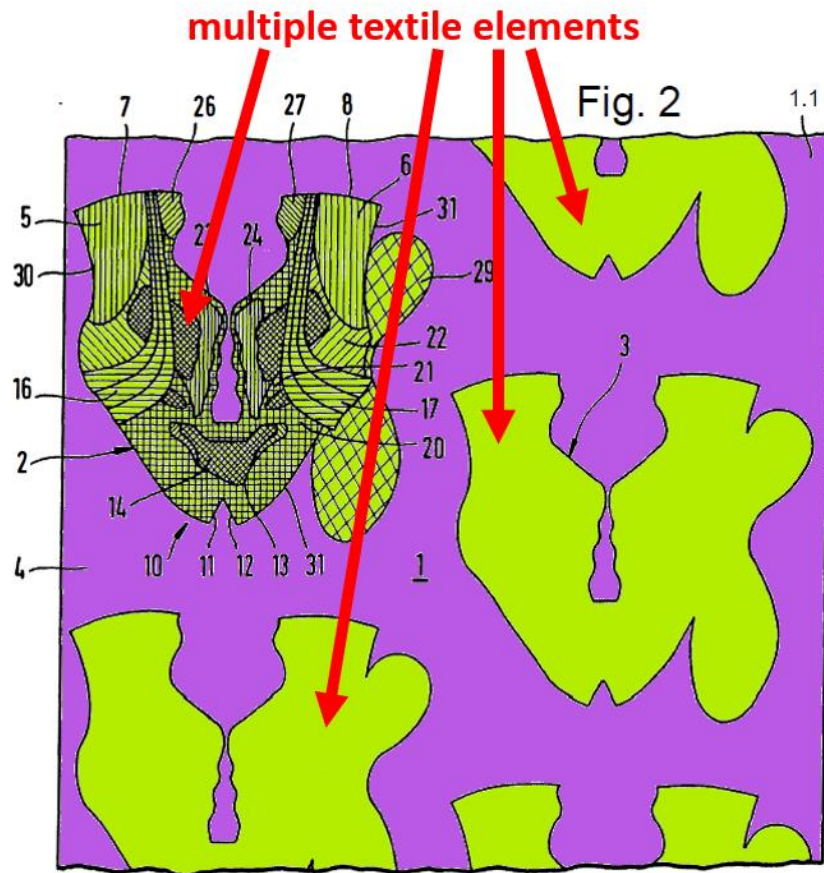


Fig. 1

Id., 5-7, Fig. 1 (annotated). Nishida provides that unwound web part(s) 2 can be “divided into different individual parts or areas, which are distinguished from each other by a different type of fabric and/or by different fibers or threads,” like wool, silk, or metal threads. *Id.*, 5. Nishida also explains that unwound web part(s) 2 “are produced in the required quality, thickness, multilayered, or the like” for a shoe upper. *Id.*, 4. On the other hand, surface areas 1.1 are described by Nishida as “offcut resulting from the cutting” and are thus discarded after unwound web part(s) 2 are cut out. *Id.* Nishida states that surface areas 1.1 “consist of a lightweight fabric quality being as simple and inexpensive as possible” and “can be produced in the manner of a gauze or with a low to very low number of warps and/or wefts and/or, e.g., thin-threaded or the like.” *Id.*, 7-8. Surface areas 1.1 “merely hold[] together

67. Nishida discloses multiple embodiments of material web 1. In one embodiment, material web 1 has parts for multiple uppers (i.e., multiple knitted textile elements), as is illustrated in Figure 2 below.



Id., Fig. 2 (annotated). In another embodiment, material web 1 can have an upper shape that differs from the upper shape in Figures 1-2, as shown in Figure 4 below.

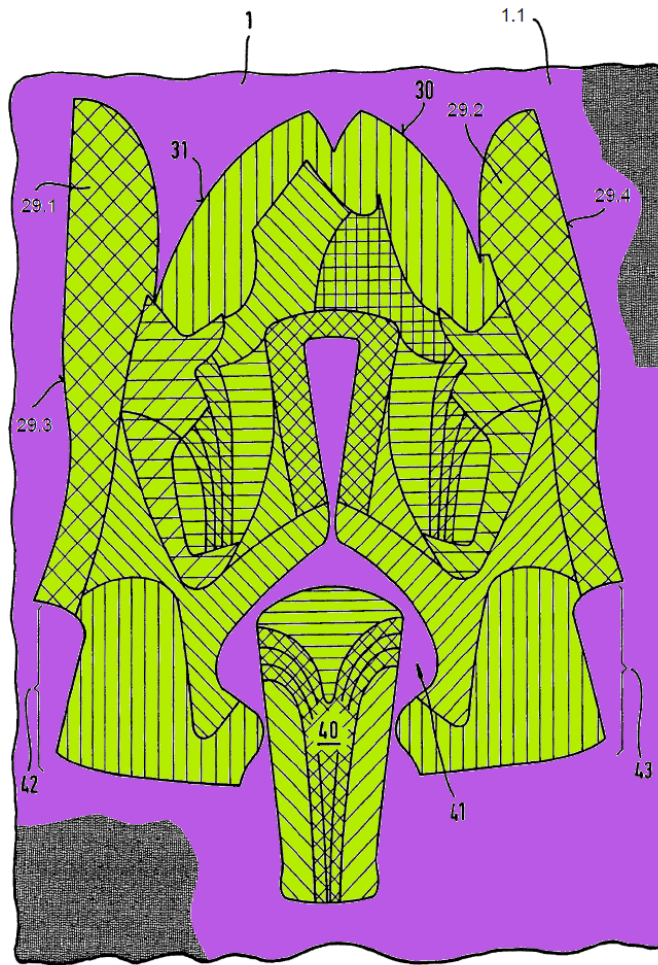


Fig. 4

Id., Fig. 4 (annotated).

B. Nishida Anticipates Claim 1

68. Nishida describes a method of manufacturing an article of footwear as recited in claim 1 for the reasons I explain in detail below. A POSA would have considered Nishida's disclosed process to be a typical cut-and-sew process, which was commonly used in the apparel and footwear manufacturing processes for a knitted textile article (i.e., upper). Nishida's upper is produced as part of material web 1, then cut out of material web 1, and finally sewn to itself (or to other

components) to create the finished product. Cut-and-sew processes for apparel and footwear like Nishida's were very common by 2004 based on my many years of experience prior to 2004.

1. Preamble of Claim 1

69. The preamble of claim 1 recites “[a] method of manufacturing an article of footwear.”

70. According to the '749 patent, “[t]he primary elements of footwear 10 are depicted in Fig. 1 as being a sole structure 20 and an upper 30.” Ex.1001, 4:43-44. “Sole structure 20 has a generally conventional configuration that includes a midsole 21 and an outsole 22.” *Id.*, 4:55-56.

71. Nishida describes a method of manufacturing an article of footwear—a shoe. Nishida discloses “production of a shoe upper.” Ex.1005, Abstract. Nishida states that a finished shoe upper is “placed in an adhesive, injection or casting mold, in which a midsole 33 and an outsole 34 are formed by known methods.” *Id.*, 6; *see also id.*, 4. Nishida further provides that its described method includes “producing a shaped shoe part..., cutting ... and sewing the shoe uppers..., and attaching the associated sole part.” *Id.*, 9. As a result, Nishida discloses the preamble of claim 1.

2. Limitation 1[a]: “simultaneously knitting a textile element with a surrounding textile structure, the knitted textile element having at least one knitted texture that differs from a knitted texture in the surrounding knitted textile structure”

72. Limitation 1[a] is disclosed by Nishida.

i. **Simultaneously Knitting Limitation: “simultaneously knitting a textile element with a surrounding textile structure”**

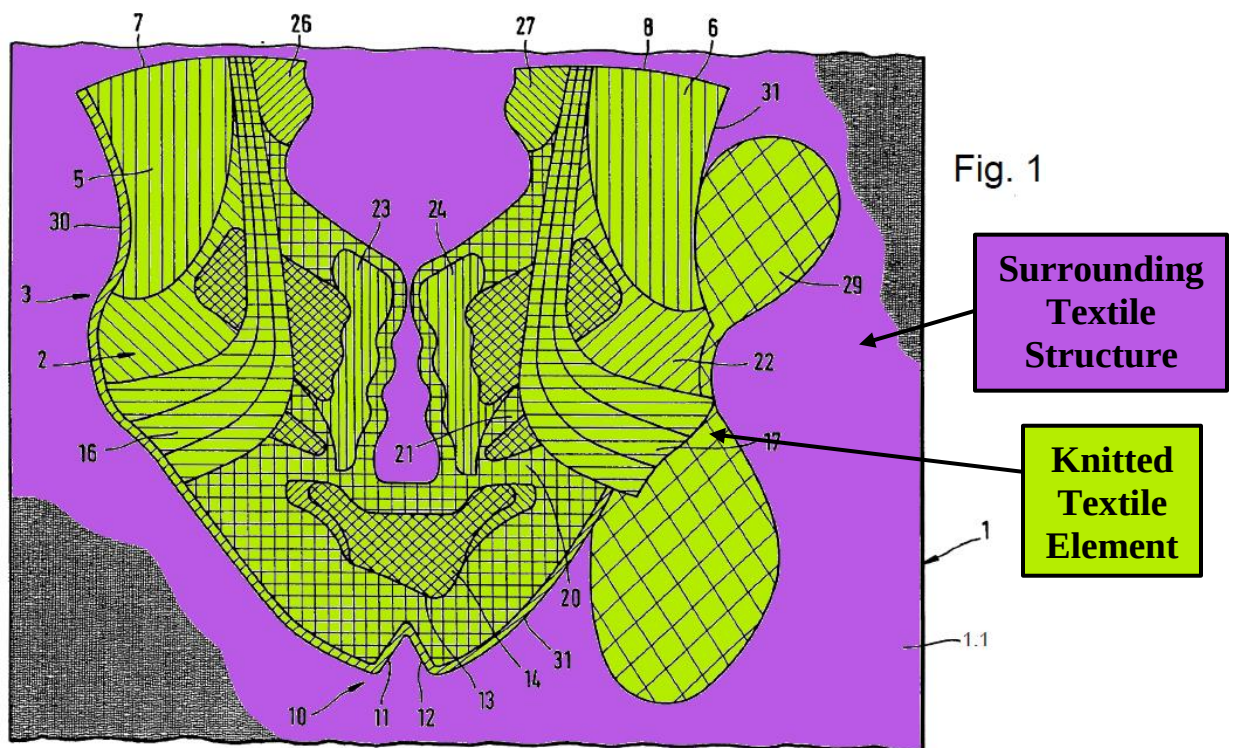
73. The '749 patent uses the term “simultaneously” just one time other than in the claims. The '749 patent's specification provides that “a first textile element 40 and a second textile element 40 may be *simultaneously* formed in a single textile structure 60.” Ex.1001, 7:58-60 (emphasis added). In this use of simultaneously, simultaneously indicates forming one or more textile elements and a surrounding textile structure as part of a single textile structure during a single knitting process.

74. The simultaneously knitting limitation is disclosed by Nishida.

75. Nishida describes that “when the strip of material (1) is manufactured, the patterns (2) of the uppers are produced, *at the same time* as the strip of material.” Ex.1005, Abstract (emphasis added); *see also id.*, 9 (Claim 1: “[D]uring the production of the material web (1), both the patterns or partial patterns in the form of the shoe upper (3) unwound web part (2), as well as the patterns of partial patterns in the form of a sole part (29) are produced by ... a textile production method within the material web.”), 4 (“[T]he individual patterns or partial patterns can already be produced directly during the production of the material web in the desired shoe size.”), 6 (“These shoe-upper areas can be specially designed during the production of the material web 1.”). According to Nishida, its material is “a material web [1] which, during its production by a method customary in the textile industry, e.g., by

weaving and/or knitting and/or embroidery, is provided with a single or a plurality of unwound web part(s) 2 for the shoe-upper shape 3.” *Id.*, 5. Material web 1 further includes surface areas 1.1 that are separate from the unwound web part(s) 2, produced during production of material web 1, and described by Nishida as “consist[ing] of a lightweight fabric quality being as simple and inexpensive as possible.” *Id.*, 7-8.

76. Each of Nishida’s unwound web part(s) 2 is a knitted textile element. Nishida’s surface areas 1.1 are a surrounding textile structure. The single textile structure of Nishida’s material web 1, which is knit during a single knitting process and includes its knitted textile element (colored green) and surrounding textile structure (colored purple), is shown in Figure 1 below.



Id., Fig. 1 (annotated). Nishida also shows another embodiment of its material web 1, which is knit during a single knitting process and includes a knitted textile element (colored green) and a surrounding textile structure (colored purple), as depicted in Figure 4 below.

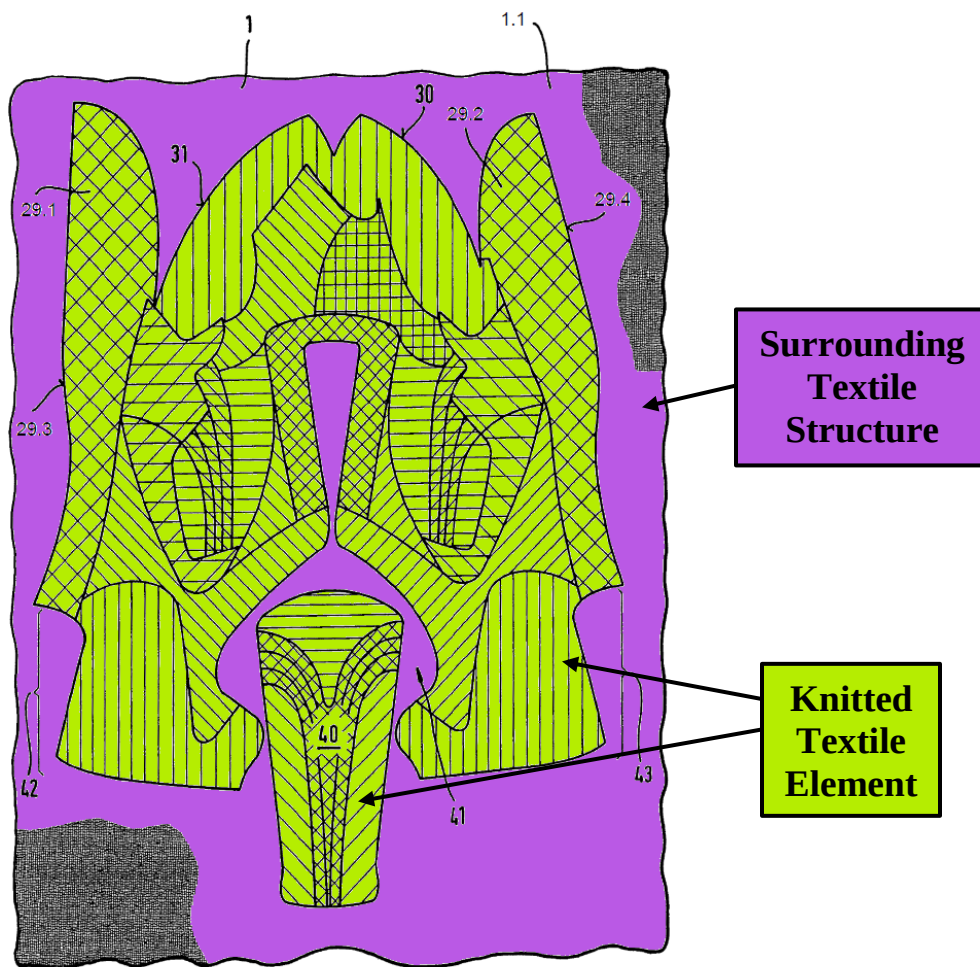


Fig. 4

Id., Fig. 4 (annotated). As a result, Nishida discloses simultaneously knitting a textile element (unwound web part(s) 2) with a surrounding textile structure (surface areas 1.1).

ii. Differing Knitted Textures Limitation: “the knitted textile element having at least one knitted texture that differs from a knitted texture in the surrounding knitted textile structure”

77. The '749 patent provides that different textures in a single knitted structure may be formed from varying yarn type or stitch configuration. Ex.1001, 9:61-65, 3:33-37. According to the '749 patent, “yarn may be formed from cotton, wool, elastane, rayon, nylon, and polyester,” and “[e]ach of these yarn types may impart differing properties to the areas corresponding with textures.” *Id.*, 9:61-65. In addition, the '749 patent describes that different areas can be formed of different stitch configurations which “impart[s] varying textures to a surface of the textile element.” *Id.*, 3:33-37.

78. The differing knitted textures limitation is disclosed by Nishida. Nishida's knitted textile element can be constructed “using different manufacturing techniques, such as ... different yarn material ... [or] different material thickness.” Ex.1005, Abstract. Nishida states that “only those parts of the material web corresponding to the pattern or an area of a pattern of the shoe upper or the associated sole part are produced in the required quality, thickness, multilayered, or the like.” *Id.*, 4. The knitted textile element can be “divided into different individual parts or areas, which are distinguished from each other ... by different fibers or threads, e.g., of wool, wool with metal threads, silk, silk with metal threads or wool with synthetic fibers, and the like, and/or ... differently formed fiber strands or fiber strand

compositions, such as twisted, processed in parallel, and the like.” *Id.*, 5. In contrast, the surrounding textile structure “ha[s] a lower quality and/or density and/or a lower weight.” *Id.*, 10 (Claim 12); *see also id.*, 4. Nishida’s surrounding textile structure “consist[s] of a lightweight fabric quality being as simple and inexpensive as possible” and “can be produced in the manner of a gauze or with a low to very low number of warps and/or wefts and/or, e.g., thin-threaded or the like.” *Id.*, 7-8. Nishida’s differing yarns, material thickness, and/or other properties of the knitted textile element compared to the surrounding textile structure create at least one texture in the knitted textile element that differs from a texture in the surrounding textile structure. As a result, Nishida describes that each of its knitted textile elements (unwound web part(s) 2) has at least one knitted texture that differs from a knitted texture in the surrounding textile structure (surface areas 1.1).

iii. Simultaneously Knitting and Differing Knitted Textures
Limitations: “simultaneously knitting a textile element with a surrounding textile structure, the knitted textile element having at least one knitted texture that differs from a knitted texture in the surrounding knitted textile structure”

79. The simultaneously knitting and differing knitted textures limitations are also together disclosed by Nishida. That is, Nishida discloses that, during the process of simultaneously knitting the textile element (unwound web part(s) 2) with the surrounding textile structure (surface areas 1.1), its knitted textile element

(unwound web part(s) 2) is knit to have at least one knitted texture differing from a knitted texture knit into its surrounding textile structure (surface areas 1.1).

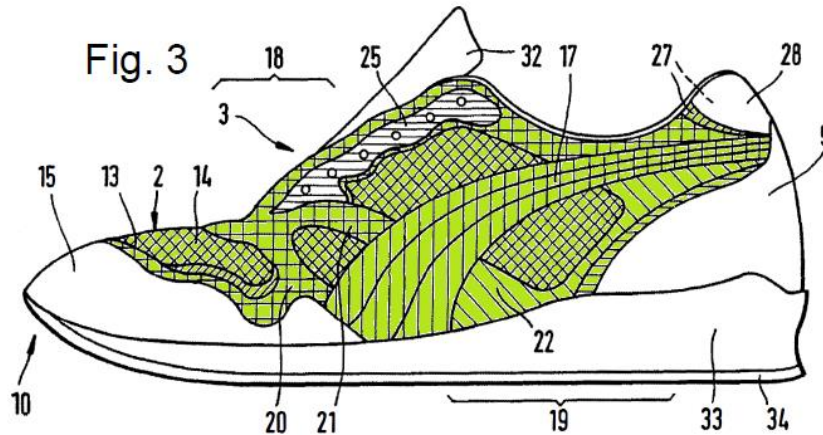
80. As a result, Nishida discloses limitation 1[a].

3. Limitation 1[b]: “removing the knitted textile element from the surrounding knitted textile structure”

81. Nishida discloses limitation 1[b]. Nishida discloses that the knitted textile element is cut out of material web 1. Ex.1005, 5 (“[a]fter cutting out the unwound web part 2 from the material web 1”). Nishida also describes its surrounding textile structure as “offcut resulting from the cutting.” *Id.*, 4. As a result, Nishida discloses removing (cutting) the knitted textile element (unwound web part(s) 2) from the surrounding textile structure (surface areas 1.1).

4. Limitation 1[c]: “incorporating the knitted textile element into the article of footwear”

82. Nishida discloses limitation 1[c]. Nishida provides that “[t]he finished shoe upper 3 is then placed in an adhesive, injection or casting mold, in which a midsole 33 and an outsole 34 are formed by known methods as shown in Fig. 3.” Ex.1005, 6; *see also id.*, 7-8. An example shoe that incorporates the knitted textile element (colored green) is shown in Nishida’s Figure 3 below. *Id.*, 5.



Id., Fig. 3 (annotated). A shoe is an article of footwear. As a result, Nishida discloses incorporating the knitted textile element (unwound web part(s) 2) into the article of footwear (shoe).

C. Nishida Anticipates Claim 2

83. Claim 2 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile structure includes simultaneously knitting a plurality of textile elements.”

84. The '749 patent describes knitting a textile element “as part of a larger textile element [60]” which includes multiple knitted textile elements 40 (colored green) and a surrounding structure (colored purple) as shown in Figure 9 below.
Ex.1001, 5:45-46, 7:53-60.

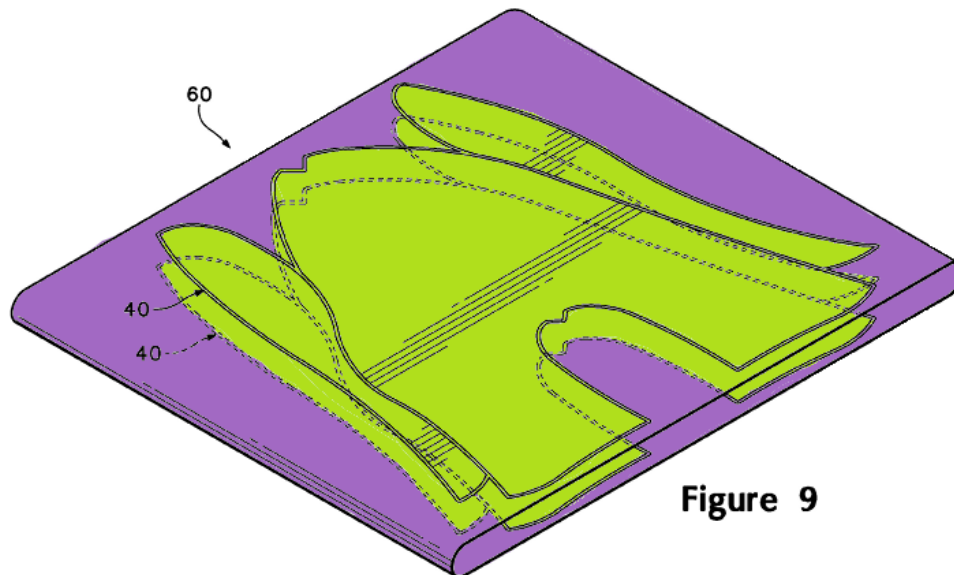
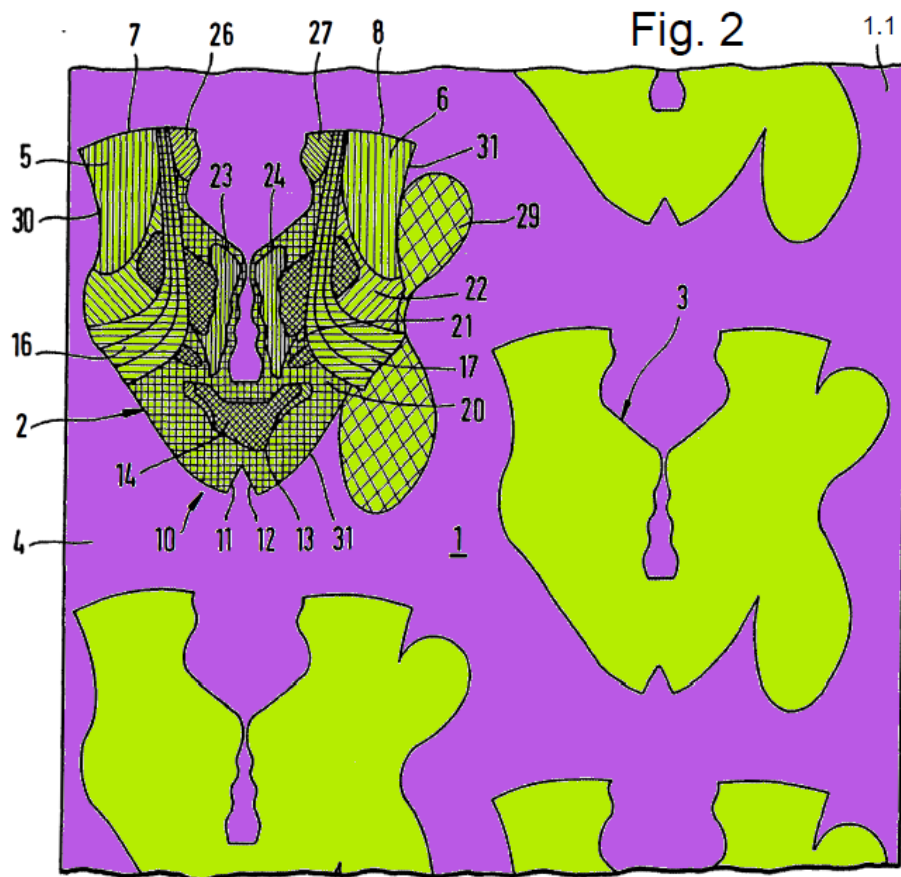


Figure 9

Id., Fig. 9 (annotated).

85. Nishida discloses claim 2. Nishida describes knitting during a single knitting process “a fabric with several unwound web parts for different shoe uppers.”

Ex.1005, 5. Such a fabric is illustrated in Figure 2 below.



Id., Fig. 2 (annotated). According to Nishida, “the individual patterns or partial patterns [of the uppers] can already be produced during the production of the material web.” *Id.*, 4; *see also* Ex.1005, Abstract. As a result, Nishida discloses simultaneously knitting a textile element (unwound web part(s) 2) with a surrounding textile structure (surface areas 1.1) includes simultaneously knitting a plurality of textile elements (unwound web parts 2).

D. Nishida Anticipates Claim 3

86. Claim 3 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile includes knitting an outline of the knitted textile element.”

87. According to the ’749 patent, “the types of stitches vary throughout textile structure 60 so that a pattern is formed with the outline of textile element 40.” Ex.1001, 7:40-43. This is illustrated in Figure 9 where “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.” *Id.*, 7:55-58.

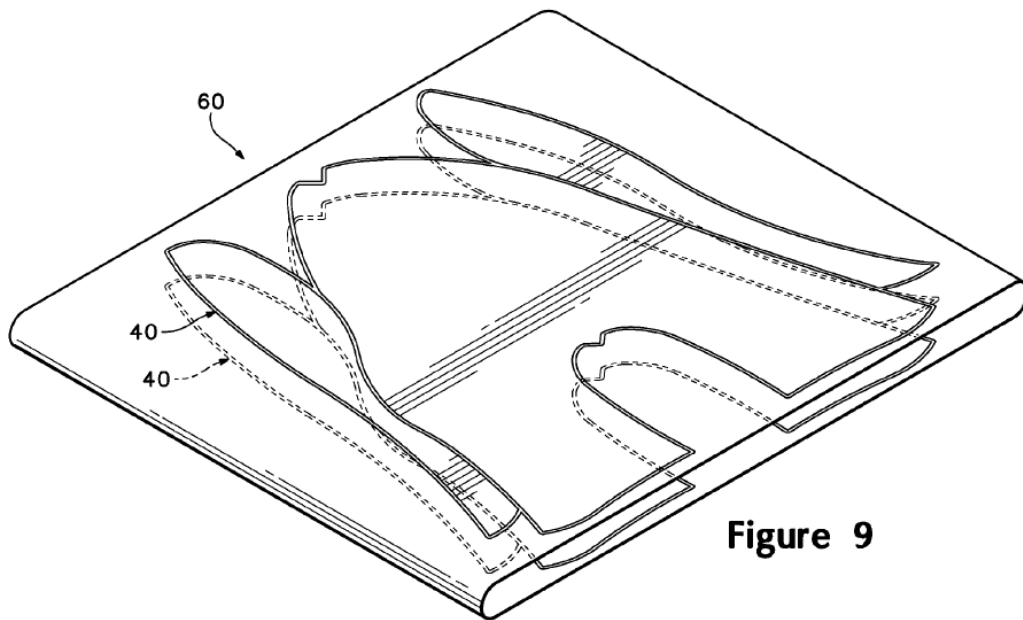
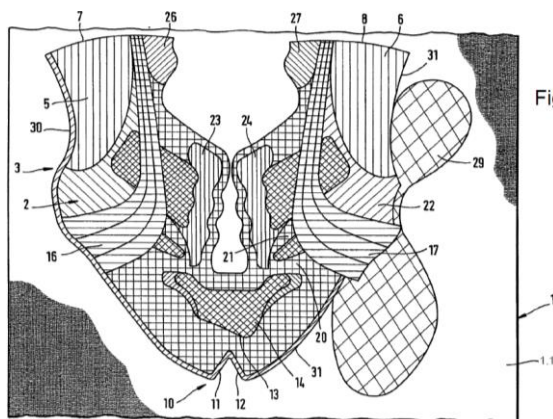


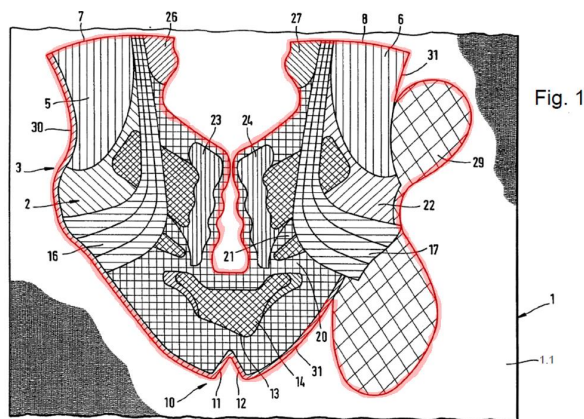
Figure 9

Id., Fig. 9.

88. Nishida discloses claim 3. Nishida describes that the simultaneous knitting includes knitting an outline of the knitted textile element. Such an outline (colored red) of the knitted textile element is illustrated below.



Unannotated Nishida Fig. 1



Annotated Nishida Fig. 1

The edges of the knitted textile element form the outline. *See also id.*, 5 (“the edges 7 and 8 are sewn together”; “on the toe of the shoe 10 the contours in the form of edges 11 and 12 are sewn together”), 7 (“outer contours 29.3 and 29.4 are preferably joined together by a longitudinal seam”). Moreover, Nishida’s surrounding textile structure can “have a lower ... density” than the Nishida’s knitted textile element, which would create such an outline. *Id.*, 10 (Claim 12); *see also id.*, 4 (“[T]he remaining area of the material web may be of a simple, lightweight or inexpensive fabric quality, which merely holds together the patterns or areas of such patterns in the material web after its completion. Thus, the offcut resulting from the cutting represents a simple, light and cheap fabric.”). As a result, Nishida discloses this claim.

E. Nishida Anticipates Claim 4

89. Claim 4 depends from claim 3 and recites: “wherein the outline has the shape and proportion of the knitted textile element.”

90. According to the '749 patent, the types of stitches vary throughout the textile structure “so that a pattern is formed with the outline of textile element 40.”

Ex.1001, 7:40-43. Figure 9 of the '749 patent illustrates the outlines of two textile elements. *Id.*, 7:54-58.

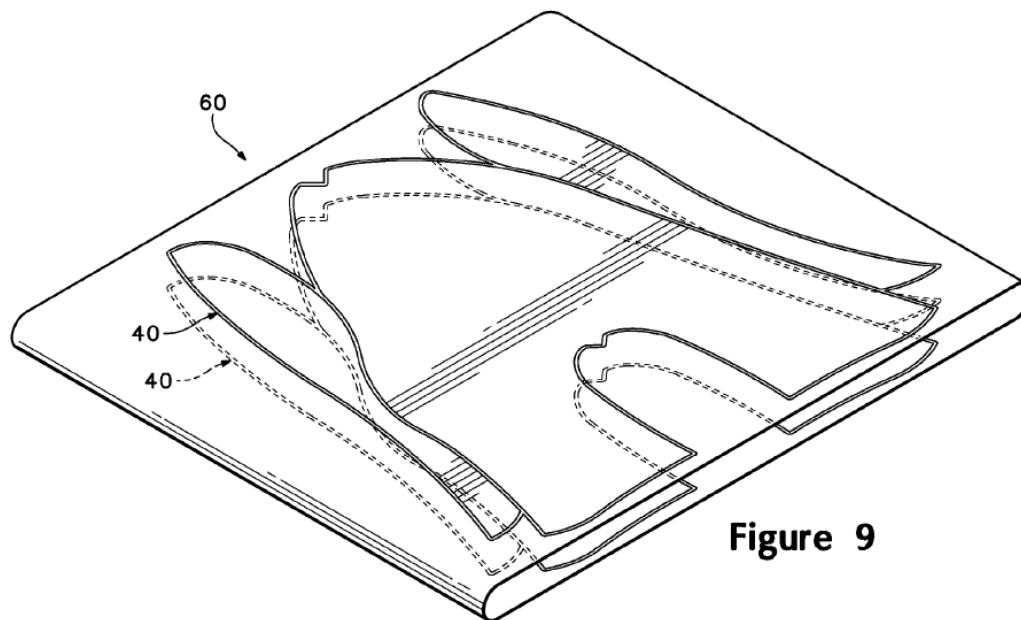
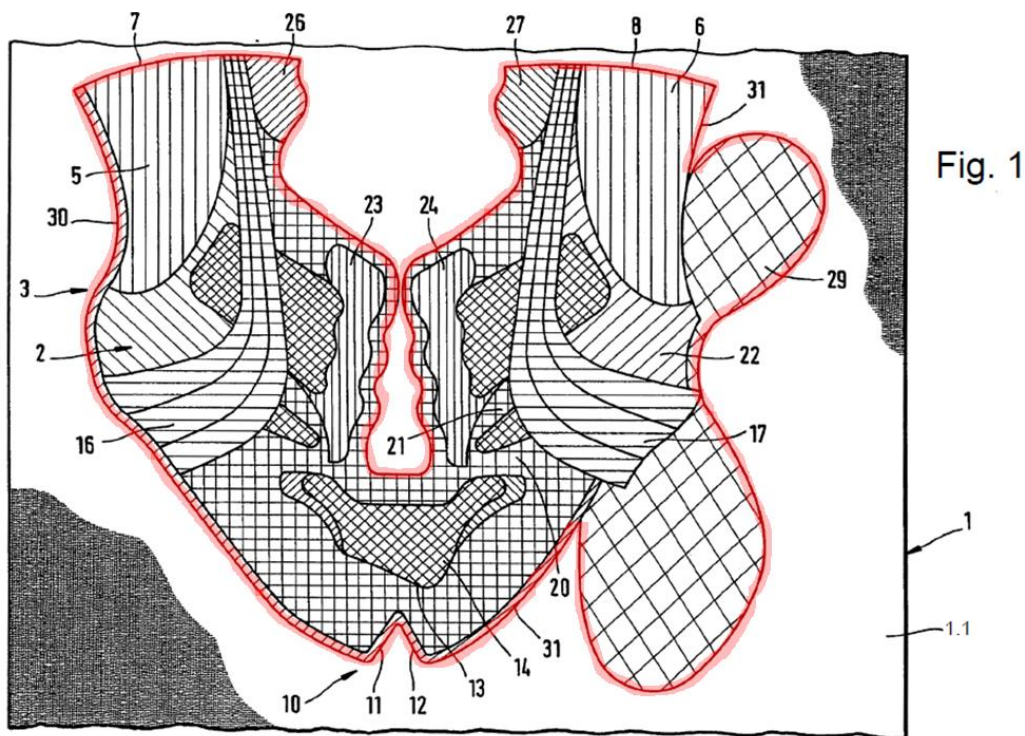


Figure 9

Id., Fig. 9.

91. Nishida discloses claim 4. As is illustrated in Figure 1 below, Nishida’s knitted textile element has an outline (colored red) that differentiates the shape and proportion of Nishida’s knitted textile element (unwound web part(s) 2) from the surrounding textile structure (surface areas 1.1).

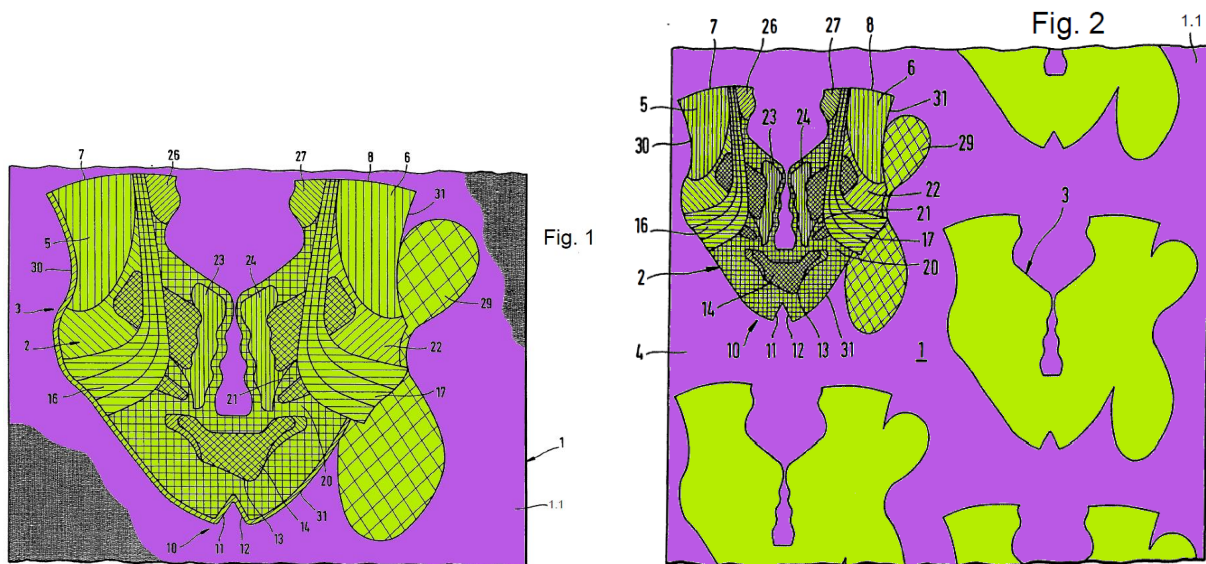


Ex.1005, Fig. 1 (annotated); *see also id.*, Figs. 2, 4-5.

F. Nishida Anticipates Claim 5

92. Claim 5 depends from claim 1 and recites: “wherein the knitted textile element has a substantially planar configuration upon removal from the surrounding knitted textile structure.”

93. Nishida discloses claim 5. As is shown in Figures 1-2 below, Nishida’s knitted textile element (colored green) has a substantially planar configuration within the surrounding textile structure (colored purple).



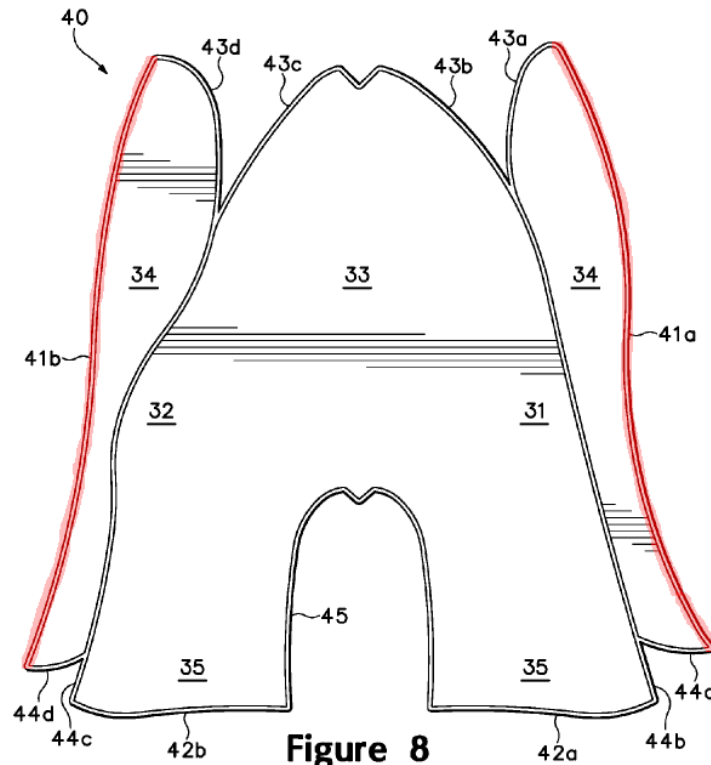
Ex.1005, Figs. 1-2 (annotated); *see also id.*, Figs. 4-5. Moreover, Nishida provides that material web 1 includes individual part 29 that is “folded out of the unwound web part 2 into the plane of the shoe sole.” *Id.*, 6. This folding would create a non-planar structure from the initial planar configuration, which confirms that the knitted textile element (unwound web part(s) 2) has substantially planar configuration upon removal from the surrounding textile structure (surface areas 1.1) and before folding.

G. Nishida Anticipates Claim 6

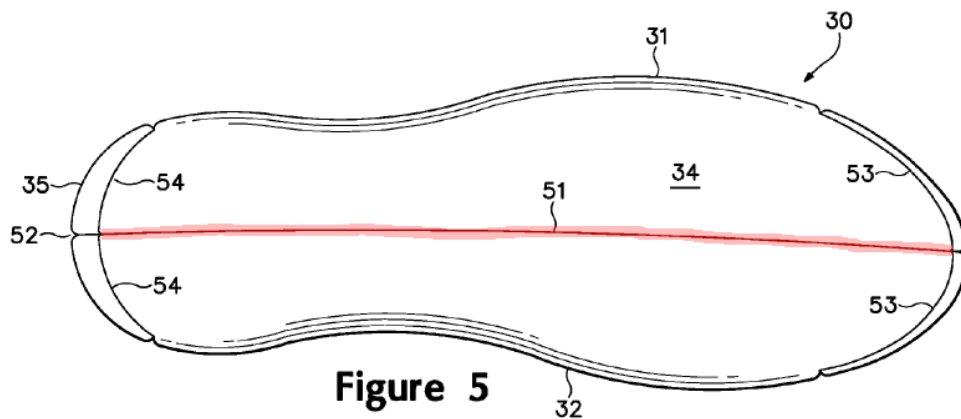
94. Claim 6 depends from claim 1 and recites: “wherein the knitted textile element includes longitudinal edges formed when the knitted textile element is removed from the surrounding knitted textile structure.”

95. The phrase “longitudinal edges” is not used by the ’749 patent outside of the claims. But the ’749 patent describes that a textile element 40, which forms

part of an upper, includes edge 41a and edge 41b. Ex.1001, 5:62-64. Edge 41a (colored red) and edge 41b (colored red) are illustrated in Figure 8 below.



Id., Fig. 8 (annotated). According to the '749 patent, edge 41a and edge 41b are secured to form seam 51 (colored red) that is illustrated in Figure 5 below and described as “extend[ing] along the longitudinal length of lower region 34.” *Id.*, 5:50-52, 5:62-6:5. “Stitching, an adhesive, or heat bonding, for example, is then utilized to secure edge 41a and edge 41b.” *Id.*, 6:11-13; *see also id.*, 6:9-11.



Id., Fig. 5 (annotated).

96. Nishida discloses claim 6. As is illustrated in Figure 4 below, the knitted textile element in one embodiment of Nishida includes outer contours 29.3 (colored red) and 29.4 (colored red) that are similar to the '749 patent's edge 41a and edge 41b. Ex.1005, 6-7.

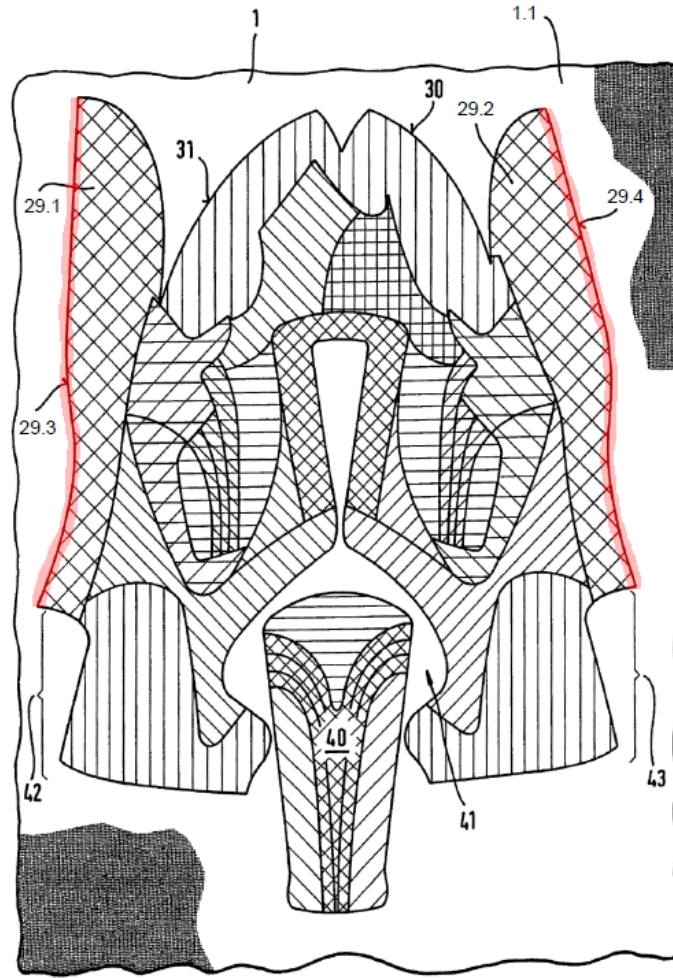


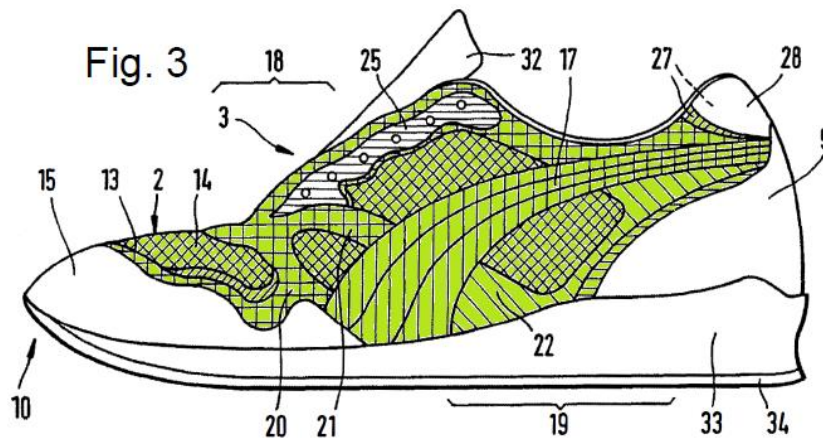
Fig. 4

Id., Fig. 4 (annotated). According to Nishida, “outer contours 29.3 and 29.4 are preferably joined together by a longitudinal seam,” similar to the ’749 patent’s seam 51. *Id.*, 7. As a result, Nishida’s knitted textile element (unwound web part(s) 2) includes longitudinal edges (outer contours 29.3 and 29.4) formed when the knitted textile element (unwound web part(s) 2) is removed from the surrounding knitted textile structure (surface areas 1.1).

H. Nishida Anticipates Claim 7

97. Claim 7 depends from claim 6 and recites: “wherein the longitudinal edges are joined together to define at least a portion of a void for receiving a foot.”

98. Nishida discloses claim 7. As I explained for claim 6 in this ground, Nishida’s knitted textile element’s “outer contours 29.3 and 29.4 are preferably joined together by a longitudinal seam.” Ex.1005, 7. This longitudinal seam joins sole part sections 29.1 and 29.2 to “form the complete sole part 29” and part of a void for receiving a foot. *Id.*, 7. According to Nishida, the knitted textile element such as “[t]he finished shoe upper 3 [colored green] is then placed in an adhesive, injection or casting mold, in which a midsole 33 and an outsole 34,” forming a shoe such as illustrated in Figure 3. *Id.*, 6.



Id., Fig. 3 (annotated); see also *id.*, 5, 7-8. As a result, Nishida discloses its longitudinal edges (outer contours 29.3 and 29.4) are joined together (via longitudinal seam) to define at least a portion of a void for receiving a foot.

I. Nishida Anticipates Claim 8

99. Claim 8 depends from claim 1 and recites: “wherein the knitted textile element has a plurality of different knitted textures formed by varying at least one of the stitch type and the yarn type.”

100. It is my understanding from counsel that, as a legal principle, when a claim phrases a group of structures as an alternative, the claim is anticipated if any member of the group of structures is disclosed in the prior art. Thus, I understand that a process which varies either the stitch type or the yarn type (or both) would disclose the limitations of claim 8.

101. Nishida discloses claim 8, including that Nishida’s knitted textile element (unwound web part(s) 2) can have different textures. Nishida discloses that its knitted textile element may be constructed “using different manufacturing techniques, such as ... different yarn material ... [or] different material thickness.” Ex.1005, Abstract. According to Nishida, its knitted textile element can be “divided into different individual parts or areas, which are distinguished from each other ... by different fibers or threads, e.g., of wool, wool with metal threads, silk, silk with metal threads or wool with synthetic fibers, and the like, and/or ... differently formed fiber strands or fiber strand compositions, such as twisted, processed in parallel, and the like.” *Id.*, Abstract, 5. Nishida thus describes that its knitted textile element can

have a plurality of different knitted textures by at least varying the yarn type used to knit the knitted textile element.

J. Nishida Anticipates Claim 12

102. Claim 12 depends from claim 1 and recites: “wherein incorporating the knitted textile element into the article of footwear includes securing edges of the knitted textile element to form a seam that extends along a lower region of an upper and securing the upper to a sole structure.”

103. Nishida discloses claim 12. As I explained for claim 6 in this ground, the knitted textile element in one embodiment in Nishida includes outer contours 29.3 and 29.4 that are joined by a longitudinal seam, similar to the ’749 patent’s edge 41a and edge 41b that are joined by seam 51. That longitudinal seam extends along a lower region of the upper in Nishida like the ’749 patent’s “[s]eam 51 extends along the longitudinal length of lower region 34.” Ex.1005, 6-7, Fig. 4; Ex.1001, 5:50-52. According to Nishida, “[t]he finished shoe upper 3 is then placed in an adhesive, injection or casting mold, in which a midsole 33 and an outsole 34 are formed by known methods, as shown in Fig. 3.” Ex.1005, 6; *see also id.*, 7-8. Nishida’s process forms a shoe as I explained for limitation 1[c] in this ground. As a result, Nishida discloses this claim.

K. Nishida Anticipates Claim 13

104. Claim 13 is similar to claims 1 and 2, and the same disclosures from Nishida that disclosed the limitations of claims 1 and 2 also similarly disclose the limitations of claim 13.

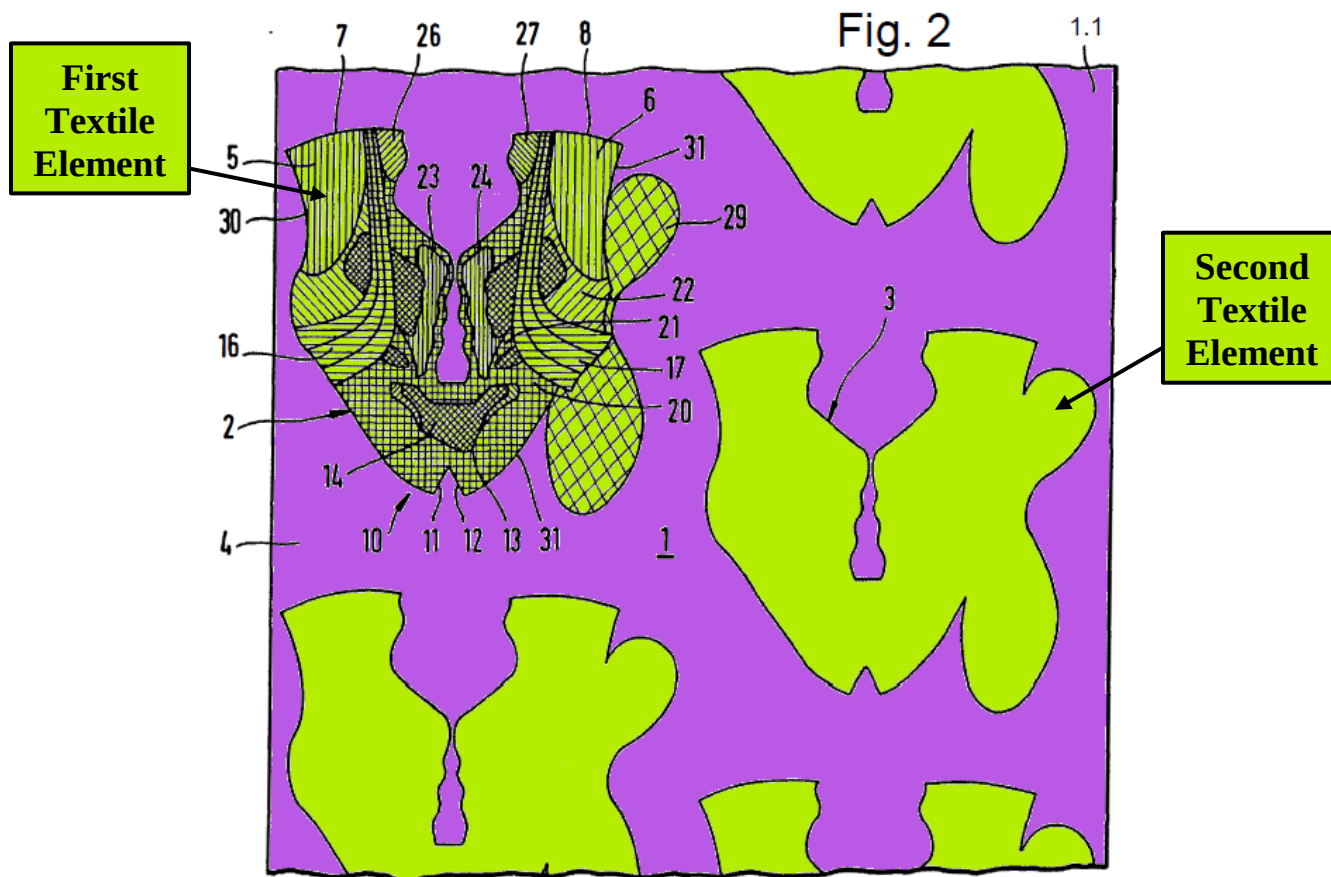
1. Preamble

105. The preamble of claim 13 is the same as the preamble of claim 1. It is disclosed by Nishida for the same reasons.

2. Limitation 13[a]: “knitting a first textile element and a second textile element simultaneously with knitting a surrounding textile structure, the first knitted textile element located within a first portion of the knitted textile structure, the second knitted textile element located within a second portion of the knitted textile structure”

106. Nishida discloses limitation 13[a]. Nishida describes knitting “a fabric with several unwound web parts for different shoe uppers.” Ex.1005, 5, Fig. 2. According to Nishida, “the individual patterns or partial patterns [of the uppers] can already be produced directly during the production of the material web [1].” *Id.*, 4; *see also id.*, Abstract (“patterns (2) of the uppers are produced, at the same time as the strip of material (1) is produced”). As I explained for claim 2, Nishida thus describes knitting two textile elements (unwound web parts 2) simultaneously with knitting a surrounding textile structure (surface areas 1.1). As is shown in Figure 2 below, a first knitted textile element is located within a first portion of the knitted

textile structure (material web 1) in Nishida and a second knitted textile element is located within a second portion of the knitted textile structure in Nishida.

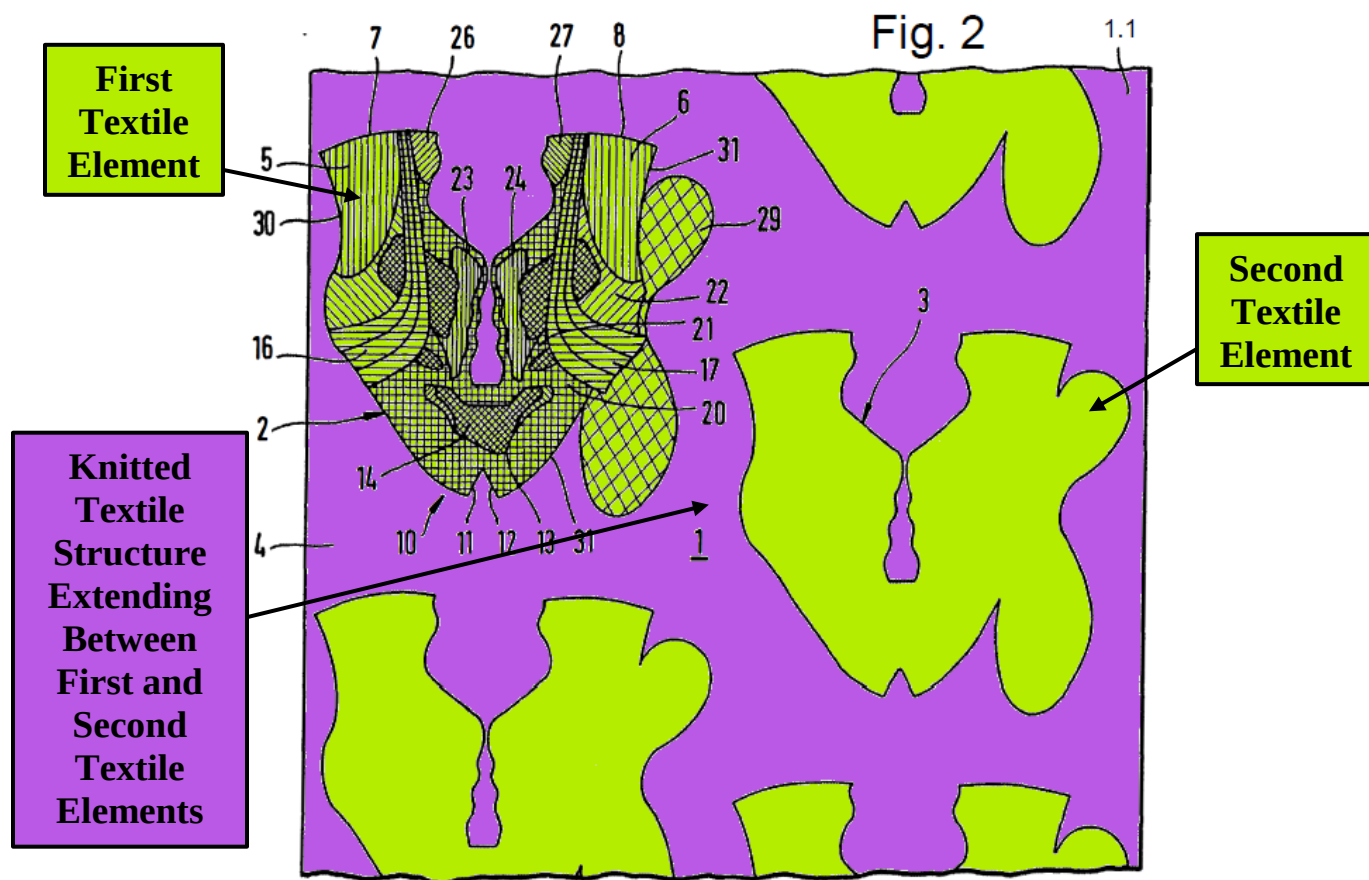


Id., Fig. 2 (annotated). As a result, Nishida discloses this limitation.

3. **Limitation 13[b]: “varying at least one of the types of stitches or the types of yarns in the knitted textile structure to impart a texture to the first and second knitted textile elements different from a texture of the knitted textile structure extending between the first and second portions”**

107. Nishida discloses limitation 13[b]. As I explained for limitation 1[a], Nishida discloses a knitted textile element (unwound web part(s) 2) has at least one knitted texture that differs from a knitted texture in a surrounding textile structure

(surface areas 1.1). These differing textures differ as a result of using one yarn type in the knitted textile element that is different from another yarn type used in the surrounding textile structure as I explained for limitation 1[a]. Nishida's surrounding textile structure (surface areas 1.1) is a knitted textile structure extending between the first and second textile elements (unwound web parts 2). This is shown in Figure 2 below.



Ex.1005, Fig. 2 (annotated). As a result, Nishida discloses varying at least one of the types of stitches or the types of yarns (varying yarn type) in the knitted textile structure (material web 1) to impart a texture to the first and second knitted textile

elements (unwound web parts 2) different from a texture of the knitted textile structure extending between the first and second portions (surface areas 1.1).

4. Limitation 13[c]: “removing the first and second knitted textile elements from the knitted textile structure”

108. Nishida discloses limitation 13[c]. As I explained for limitation 1[b], Nishida describes removing (cutting) a knitted textile element (unwound web part(s) 2) from a surrounding textile structure (surface areas 1.1). In addition, Nishida describes removing (cutting) two textile elements (unwound web parts 2) from the knitted textile structure (material web 1) in connection with Nishida’s discussion for Figure 2. Ex.1005, 5 (“Fig. 2 shows a detail of a fabric with several unwound web parts for different shoe uppers”; “[a]fter cutting out the unwound web part 2 from the material web 1”). As a result, Nishida discloses removing (cutting) the first and second knitted textile elements (unwound web parts 2) from the knitted textile structure (material web 1).

5. Limitation 13[d]: “incorporating at least one of the first and second knitted textile elements into the article of footwear”

109. Nishida discloses limitation 13[d]. Nishida discloses incorporating at least one of its knitted textile elements (unwound web part(s) 2) into the article of footwear (shoe) for the reasons I explained for limitation 1[c].

L. Nishida Anticipates Claim 14

110. Claim 14 depends from claim 13 and recites: “wherein knitting a first textile knitted element simultaneously with a surrounding knitted textile structure includes knitting an outline of the first knitted textile element.”

111. Nishida discloses claim 14. Nishida describes that knitting a first textile element (one of unwound web parts 2) simultaneously with a surrounding textile structure (surface areas 1.1) includes knitting an outline of the first knitted textile element (one of unwound web parts 2) for the reasons I explained for claim 3 in this ground. *See also* Ex.1005, Fig. 2.

M. Nishida Anticipates Claim 15

112. Claim 15 depends from claim 13 and recites: “wherein the first and second textile knitted elements have substantially planar configurations upon removal from the surrounding knitted textile structure.”

113. Nishida discloses claim 15. As I explained for claim 5 in this ground, Nishida discloses a knitted textile element (unwound web part(s) 2) that has a substantially planar configuration upon removal from a surrounding textile structure (surface areas 1.1). Each of the knitted textile elements (unwound web part(s) 2) in Nishida for the same reasons also has a substantially planar configuration upon removal, so Nishida’s first and second knitted textile elements (unwound web parts

2) have substantially planar configurations upon removal from the surrounding knitted textile structure (surface areas 1.1). As a result, Nishida discloses this claim.

N. Nishida Anticipates Claim 16

114. Claim 16 depends from claim 13 recites: “wherein the first knitted textile element includes longitudinal edges formed when the first knitted textile element is removed from the surrounding knitted textile structure.”

115. Nishida discloses claim 16. Nishida’s first knitted textile element (one of unwound web parts 2) includes longitudinal edges formed when the first knitted textile element (one of unwound web parts 2) is removed from the surrounding knitted textile structure (surface areas 1.1) for the reasons I explained for claim 6 in this ground. *See also* Ex.1005, Fig. 2.

O. Nishida Anticipates Claim 17

116. Claim 17 depends from claim 16 and recites: “wherein the longitudinal edges are joined together to define at least a portion of a void for receiving a foot.”

117. Nishida discloses claim 17 for the reasons I explained for claim 7 in this ground.

P. Nishida Anticipates Claim 18

118. Claim 18 depends from claim 16 and recites: “wherein incorporating the first knitted textile element into the article of footwear includes securing the

longitudinal edges of the first knitted textile element to form a seam that extends along a lower region of an upper.”

119. Nishida discloses claim 18. For the reasons I explained for claim 12 in this ground, Nishida describes incorporating the first knitted textile element (one of unwound web parts 2) into the article of footwear (shoe) includes securing the longitudinal edges of the first knitted textile element (one of unwound web parts 2) to form a seam that extends along a lower region of an upper.

X. GROUND 2: NISHIDA IN VIEW OF A POSA’S GENERAL KNOWLEDGE RENDERS OBVIOUS CLAIMS 9-10 AND 19-20

120. Claim 9 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile structure includes utilizing a wide-tube circular knitting machine.” Claim 19 depends from claim 13 and recites: “wherein knitting the first and second knitted textile elements simultaneously with a surrounding knitted textile structure includes utilizing a wide-tube circular knitting machine.”

121. Claim 10 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile structure includes utilizing a jacquard double needle-bar raschel knitting machine.” Claim 20 depends from claim 13 and recites: “wherein knitting the first and second textile knitted elements simultaneously with a surrounding knitted textile structure includes utilizing a jacquard double needle-bar raschel knitting machine.”

122. These claims recite nothing more than using common knitting machines that were known in the knitting industry well before the priority date of the '749 patent. As acknowledged by the '749 patent, wide-tube circular knitting machines were known prior to the '749 patent and suitable for use with the claimed methods. Ex.1001, 7:9-37. The '749 patent specifically mentions the Santoni SM8 TOP1, which was one such commercially available machine, as being usable to perform the claimed methods. *Id.* Moreover, the '749 patent does not state that any modifications to the conventional operation of these commercially available machines were required to perform the claimed methods, and no such modification would have been required.

123. Claims 9-10 and 19-20 are suggested by and obvious over Nishida in view of a POSA's general knowledge. Nishida defers to a POSA's general knowledge to select a knitting process, including an appropriate knitting machine, for knitting material web 1 because Nishida does not state what knitting process and machine should be used for knitting material web 1. A POSA would have been motivated to use either a wide-tube circular knitting machine or a jacquard double needle bar raschel knitting machine for knitting material web 1 in view of Nishida's disclosure. The two machines were generally known knitting machine types for producing knitted structures such as the ones described in Nishida. Spencer (Ex.1009), which is a widely used reference book about knitting technology and

commonly used in college courses that teach knitting, discusses these machines in multiple chapters. *See e.g.*, Ex.1009, 90-102, 61-62, 151, 166, 195-207.

124. A POSA would have chosen circular knitting and raschel knitting as two of a finite number of options for producing material web 1 described in Nishida. Before the '749 patent, industrial knitting machines that would construct a knitted sheet such as the ones in Nishida are grouped generally into two broad categories: warp knitting and weft knitting. Ex.1010, 4. These categories were well known prior to 2004. Commercially-available machines of both types were known for around a century prior to 2004. The two categories divide into major subcategories: weft knitting into “[c]ircular” and “[f]lat” and warp knitting into “[m]ilanese,” “[r]aschel,” and “[t]ricot.” *Id.* A POSA would have understood that a circular knitting machine or a raschel knitting machine would produce the structures described in Nishida and would have been cost-effective and low complexity options to do so.

125. In particular, a POSA would have understood that a wide-tube circular knitting machine would have been a cost-effective, low complexity choice of a circular machine to knit Nishida’s material web 1. *See, e.g.*, Ex.1009, 90-102, 151. “Weft knitting machines may be broadly grouped according to end product as either: [i] *circular machines*, knitting *tubular fabric* in a continuous uninterrupted length of constant width, or [ii] *flat and circular machines*, knitting *garment-length*

sequences.” Ex.1009, 61. The term “tube” in “wide-tube circular knitting machine” refers to a circular machine that is designed to knit tubes of fabrics. Ex.1023, 4 (see “Tubular Fabric”). The term “wide-tube” refers to a circular machine that is designed to knit tubular fabrics with tubes that are relatively wider. Ex.1009, 61-62 (“[l]arge-diameter circular machines”). The selection of a circular machine that knits structures as tubes, specifically relatively wide tubes, would have been an obvious design choice for a POSA to knit Nishida’s material web 1.

126. Moreover, a POSA would have understood that a jacquard double needle bar raschel knitting machine would have also been a cost-effective, low complexity choice of a raschel machine to knit Nishida’s material web 1. *See, e.g.*, Ex.1009, 166, 195-207; Ex.1012, [0010], [0018]-[0020], [0057]-[0058]. The phrase “double needle bar” in “jacquard double needle bar raschel knitting machine” refers to the presence of two sets of needle beds in the machine for knitting multi-layered fabrics. Ex.1009, 195. The term “jacquard” in “jacquard double needle bar raschel knitting machine” refers to the addition of a jacquard mechanism for facilitating knitting of more complex, intricate patterns. Ex.1023, 3 (“Jacquard Knitting Machines: A pattern producing mechanism used for the production of fancy patterns on knitting machines.”). The selection of a raschel knitting machine that incorporates a jacquard mechanism and has two sets of needle beds would have been

an obvious design choice for a POSA. Ex.1009, 166 (“There are now ... jacquard raschels and double needle bar raschels.”)

127. A POSA thus would have been motivated to use either a wide-tube circular knitting machine or a jacquard double needle bar raschel knitting machine to practice the methods described in Nishida.

128. The selection of wide-tube circular and jacquard double needle bar raschel knitting machines by a POSA for producing Nishida’s material web 1 would have involved nothing more than applying a known technique (knitting a textile element with a wide-tube circular knitting machine or a jacquard double needle bar raschel knitting machine) to a known method (knitting a material web such as the ones in Nishida that include both knitted textile element(s) (unwound web part(s) 2) and surrounding knitted textile structure (surface areas 1.1)) that is ready for improvement and yields predictable results (knitting with a wide-tube circular knitting machine or a jacquard double needle bar raschel knitting machine a material web such as the ones described in Nishida). A POSA would have known that a circular knitting machine could knit a material sheet from which one or more portions are cut out. Ex.1009, 90, 151 (“circular garment-length machines are generally more productive than V-bed flat machines for cut-and-sew knitwear,” and in particular, after the advent of electronic controls, large diameter machines were the more cost-effective option). A wide-tube circular knitting machines would have

specifically been understood to be useful for knitting different yarns and stitches over a single knit structure. *Id.*, 91-102. A double needle-bar raschel machine was known to be useful in manufacturing knit footwear and other articles. Ex.1012, [0010], [0018]-[0020], [0057]-[0058]; Ex.1009, 166, 195-207. In particular, double needle-bar raschel machines were understood to be useful to simultaneously knit multiple knitted textile elements side-by-side, which would have been understood to permit the knitting of a structure such as Nishida's material web 1. Ex.1009, 201 (“[s]ome raschel double needle bed products are in the form of articles, a number of which can be simultaneously knitted side-by-side across the needle bed.”).

129. A POSA would have reasonably expected success when knitting Nishida's material web 1 with a wide-tube circular knitting machine or a jacquard double needle bar raschel knitting machine. The use of these machines would have involved just selecting the particular circular or raschel machine for implementing material web 1 in Nishida. The machines were commercially available prior to 2004 and required no more than basic setting up to knit structures like those provided in Nishida. It would have been known that wide-tube circular and jacquard double needle bar raschel knitting machines would easily knit a simple knitted article like those disclosed in Nishida prior to the '749 patent's earliest priority date. As a result, these claims would have involved no more than the routine selection of one of the

well-known knitting machine types for constructing Nishida's structure in accordance with Nishida's disclosure.

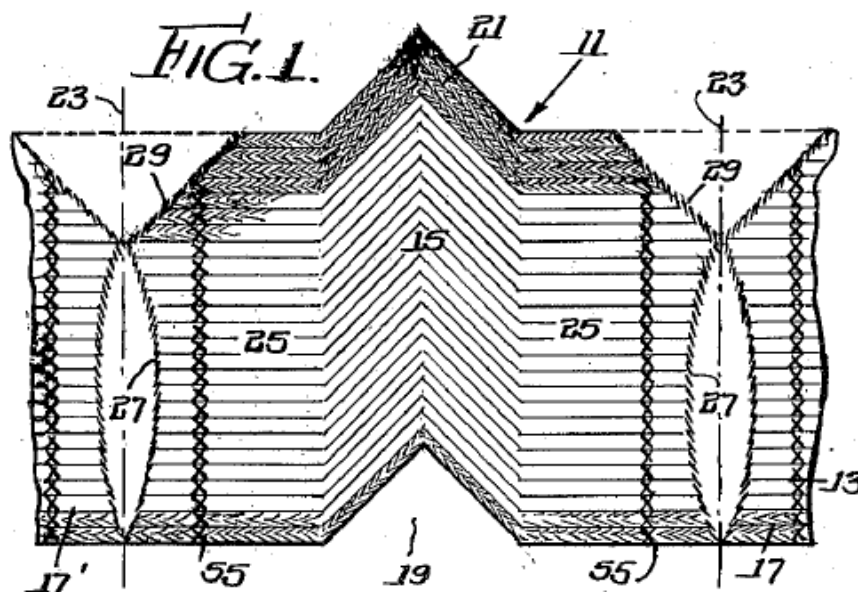
XI. GROUND 3: ZUCKERMAN ANTICIPATES CLAIMS 1-3, 5-8, 11, 13-17, AND 21

A. Summary of Zuckerman (Ex.1008)

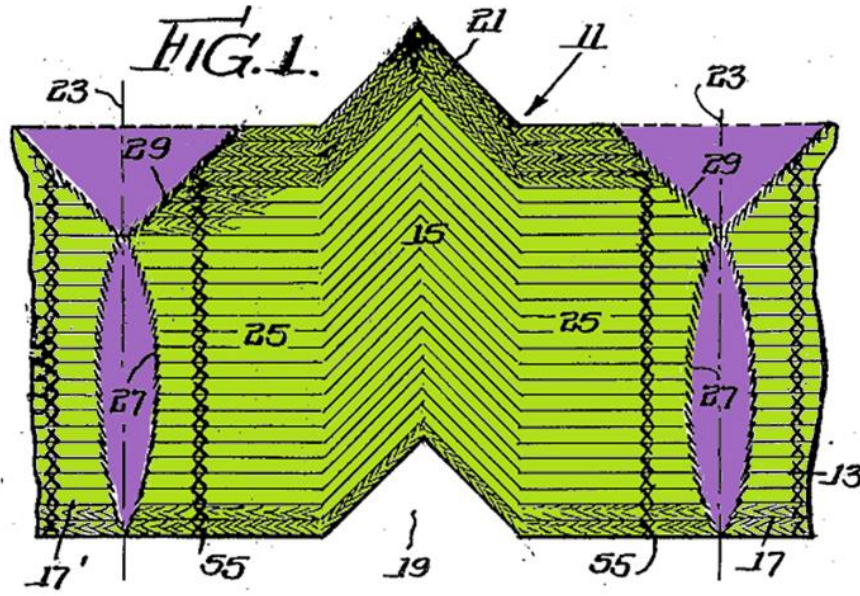
130. Zuckerman, which dates to the 1930s, describes “knitted footwear and [a] method of making the same.” Ex.1008, 1(L):1-4³. Zuckerman states that its methods “simplify the production of knitted articles fashioned or shaped to conform with the foot” and permit relatively inexpensive manufacturing of those articles. *Id.*, 1(L):5-10.

131. Zuckerman describes knitting a sheet of fabric 13 “as a continuous strip on a knitting machine.” *Id.*, 1(R):45-50; *see also id.*, 1(L):45-1(R):2. Continuous strip 13 is shown in Figure 1 below.

³ I present citations to Zuckerman in the format: page number (left/right column):line number(s).

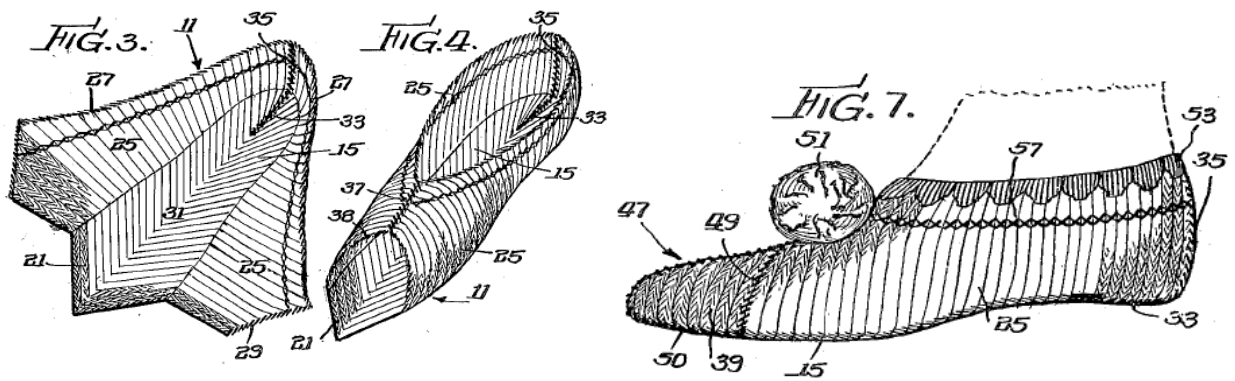


Id., Fig. 1. Zuckerman explains that its “continuous strip [13] compris[es] several blanks [11]” with each blank 11 having multiple textures. *Id.*, 1(L):1-15, 2(L):39-44, 1(R):50-2(L):11, 2(L):44-52, Fig. 1. According to Zuckerman, the varying textures can be caused by knitting with yarns that have different weight and durability, knitting in different arrangements such as varying rib arrangements, and knitting some areas more tightly than others. *Id.*, 1(L):1-15, 2(L):39-44, 1(R):50-2(L):11, 2(L):44-52, Fig. 1. Zuckerman provides that each blank 11 (colored green) is “formed by cutting the continuous strip 13 across at intervals,” leaving other portions of continuous strip 13 (colored purple) that are separate from blank 11, as shown in Figure 1 below. *Id.*, 2(L):12-22.



Id., Fig. 1 (annotated); see also *id.*, 1(L):5-15, 1(R):45-50.

132. The cut knitted textile element (blank 11) is then folded, seamed, and incorporated with additional components to make a footwear article. Example folding and seaming, as well as an example slipper, are shown in Figures 3-4 and 7 below. *Id.*, 2(L):53-2(R):37



Id., Figs. 3-4, 7.

B. Zuckerman Anticipates Claim 1

133. As I explain in detail below, Zuckerman discloses all limitations of claim 1.

1. Preamble of Claim 1

134. The preamble of claim 1 recites “[a] method of manufacturing an article of footwear.”

135. Zuckerman discloses the preamble. According to Zuckerman, its disclosure “relates in general to knitting and knitted articles and has more particular reference to knitted footwear and method of making the same.” Ex.1008, 1(L):1-4; *see also id.*, 1(L):5-15.

2. Limitation 1[a]: “simultaneously knitting a textile element with a surrounding textile structure, the knitted textile element having at least one knitted texture that differs from a knitted texture in the surrounding knitted textile structure”

136. Limitation 1[a] is disclosed by Zuckerman.

i. Simultaneously Knitting Limitation: “simultaneously knitting a textile element with a surrounding textile structure”

137. The ’749 patent uses the term “simultaneously” just one time other than in the claims. The ’749 patent’s specification provides that “a first textile element 40 and a second textile element 40 may be simultaneously formed in a single textile structure 60.” Ex.1001, 7:58-60. In this use of simultaneously, a POSA would have understood that “simultaneously” indicates forming one or more textile elements and

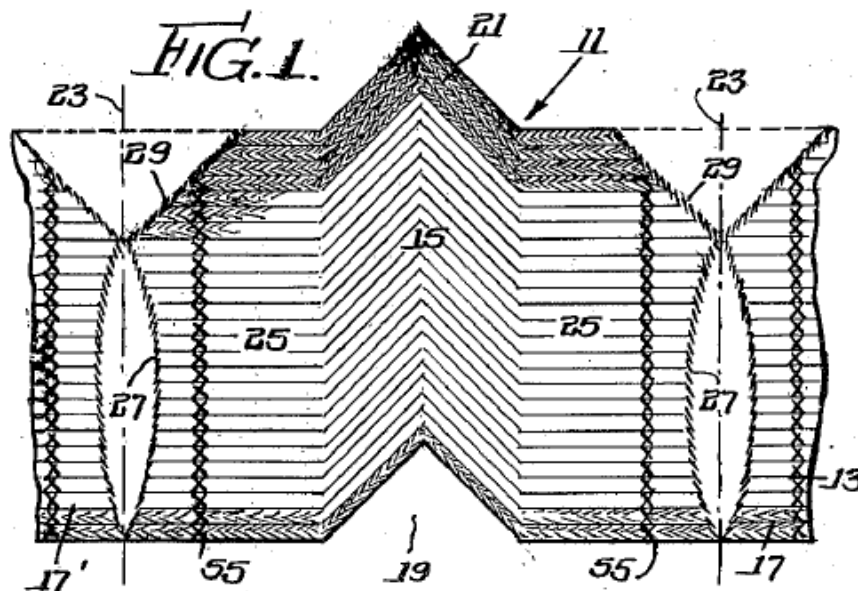
a surrounding textile structure as part of a single textile structure during a single knitting process.

138. The simultaneously knitting limitation is disclosed by Zuckerman. Zuckerman describes “knit[ting] a continuous strip comprising several blanks [11].”

Ex.1008, 1(L):5-15. In particular, Zuckerman provides:

To illustrate my invention, I have shown on the drawing how I make fashioned footwear from knitted fabric. I accomplish this by first forming blanks **11**, from which the finished articles are formed. The blanks are preferably formed by cutting the same from a strip of fabric **13**, which may be made as a continuous strip on a knitting machine

Id., 1(R):41-50; *see also id.*, 1(L):45-1(R):2. Continuous strip 13 is shown in Figure 1 below.



Id., Fig. 1.

139. Each blank 11 in Zuckerman is a knitted textile element. The portion of continuous strip 13 which surrounds blank 11 and is not part of blank 11 is a

FIG. 1.

11

23

29

15

25

27

13

17'

55

19

55

17

Surrounding Textile Structure

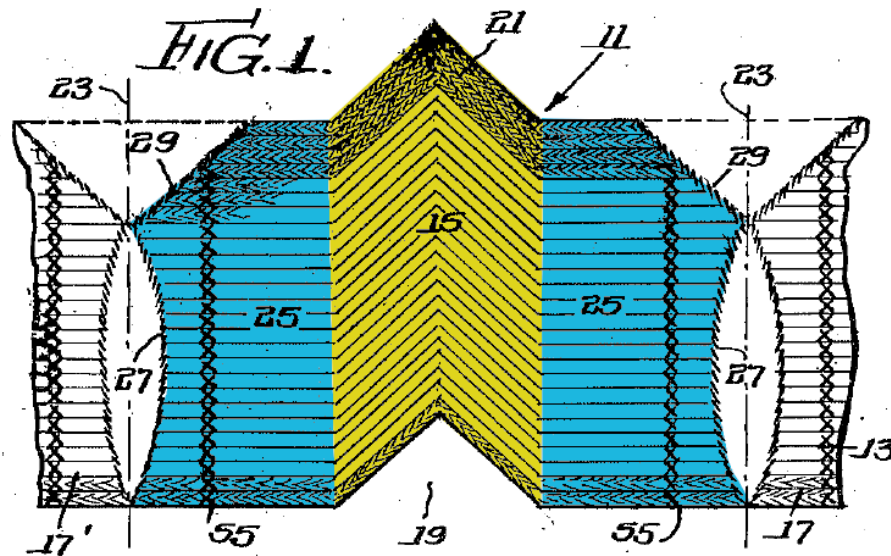
Knitted Textile Element

ii. Differing Knitted Textures Limitation: “the knitted textile element having at least one knitted texture that differs from a knitted texture in the surrounding knitted textile structure”

37, 9:61-65. Two different areas may have two different stitch configurations “to impart varying textures to a surface of the textile element.” *Id.*, 3:33-37. The ’749 patent also provides that different “yarn types may impart differing properties to the areas corresponding with textures” and different yarns may be formed of different numbers of filaments and materials. *Id.*, 9:61-65, 8:15-26.

141. The differing knitted textures limitation is disclosed by Zuckerman. Each knitted textile element in Zuckerman has one or more knitted textures that differ from a knitted texture in the surrounding textile structure. This multitexture characteristic of each knitted textile element is confirmed three different ways by Zuckerman and means that at least one texture of the knitted textile element differs from a texture in the surrounding textile structure.

142. First, according to Zuckerman, each knitted textile element (blank 11) includes a herringbone portion 15 with angular ribs (colored yellow) and a non-herringbone portion 25 with parallel ribs (colored blue) as shown in Figure 1 below. Ex.1008, 2(L):16-22, 1(R):50-2(L):11.



Id., Fig. 1 (annotated). An angular rib arrangement creates a different texture than a parallel rib arrangement at least because of the different rib orientation and the different stitch configuration used to knit horizontal ribs versus diagonal ribs. These different arrangements of ribs cause at least one texture in the knitted textile element to be different from a texture in the surrounding textile structure.

143. Second, according to Zuckerman, “yarn, forming the sole portion 15 [colored yellow], also may be heavier and more durable than that used in the remaining portions [colored blue] of the blank [11] which, of course, form the upper in the finished article.” *Id.*, 2(L):39-44. A yarn that is heavier (e.g., thicker) and more durable produces a knitted fabric which has a different texture than a fabric produced with a yarn that is lighter and less durable. This also causes at least one texture in the knitted textile element to be different from a texture in the surrounding textile structure.

144. Third, Zuckerman provides “knitt[ing] more tightly” sole portion 15 of the knitted textile element than other parts like side portions 25. *Id.*, 2(L):44-52. Tighter knitting involves incorporating a different stitch configuration in the sole portion of Zuckerman’s knitted textile element than the other parts of the knitted textile element, resulting in different fabric textures in the sole portion than the other parts of the knitted textile element. This causes at least one texture in the knitted textile element to be different from a texture in the surrounding textile structure.

145. As a result, Zuckerman discloses both that its knitted textile element (blank 11) is multitextured and that its knitted textile element (blank 11) has at least one knitted texture that differs from a knitted texture in the surrounding textile structure (portion of continuous strip 13 surrounding blank 11).

**iii. Simultaneously Knitting and Differing Knitted Textures
Limitations: “simultaneously knitting a textile element with
a surrounding textile structure, the knitted textile element
having at least one knitted texture that differs from a
knitted texture in the surrounding knitted textile structure”**

146. The simultaneously knitting and differing knitted textures limitations are also together disclosed by Zuckerman. That is, Zuckerman discloses that, during the process of simultaneously knitting the textile element (blank 11) with the surrounding textile structure (portion of continuous strip 13 surrounding blank 11), its knitted textile element (blank 11) is knit to have at least one knitted texture

differing from a knitted texture knit into its surrounding textile structure (portion of continuous strip 13 surrounding blank 11).

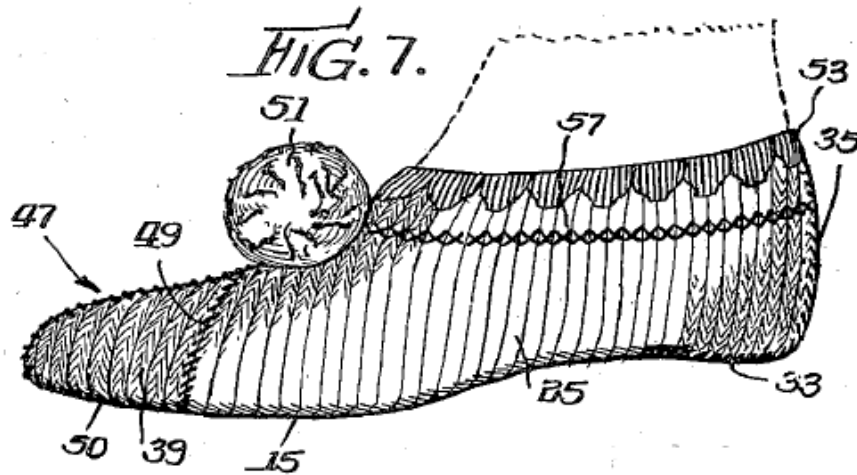
147. Accordingly, Zuckerman discloses limitation 1[a].

3. Limitation 1[b] “removing the knitted textile element from the surrounding knitted textile structure”

148. Zuckerman discloses limitation 1[b]. According to Zuckerman, “blanks [11] are preferably formed by cutting the same from a strip of fabric 13.” Ex.1008, 1(R):45-50; *see also id.*, 1(L):5-15. Zuckerman discloses that continuous strip 13 includes blank 11 and the portion of continuous strip 13 surrounding blank 11 as I explained for limitation 1[a] in this ground. As a result, Zuckerman discloses removing (cutting) the knitted textile element (blank 11) from the surrounding textile structure (portion of continuous strip 13 surrounding blank 11).

4. Limitation 1[c]: “incorporating the knitted textile element into the article of footwear”

149. Zuckerman discloses limitation 1[c]. According to Zuckerman, “[t]o fashion a slipper from the blank 11, the edges defining the notch 19 are brought together and stitched as at 33 to form a rounded heel portion in the sole.” Ex.1008, 2(L):53-56; *see also id.*, 2(L):56-2(R):26. One described slipper in Zuckerman is formed of components in addition to blank 11, such as a toe covering portion. *Id.*, 2(R):17-37, 1(R):31-36. A finished slipper subsequent to Zuckerman’s disclosed manufacturing steps is shown in Figure 7 below. *Id.*, 1(R):35-36, 2(R):17-37.



Id., Fig. 7. As a result, Zuckerman discloses incorporating the knitted textile element (blank 11) into the article of footwear (slipper).

C. Zuckerman Anticipates Claim 2

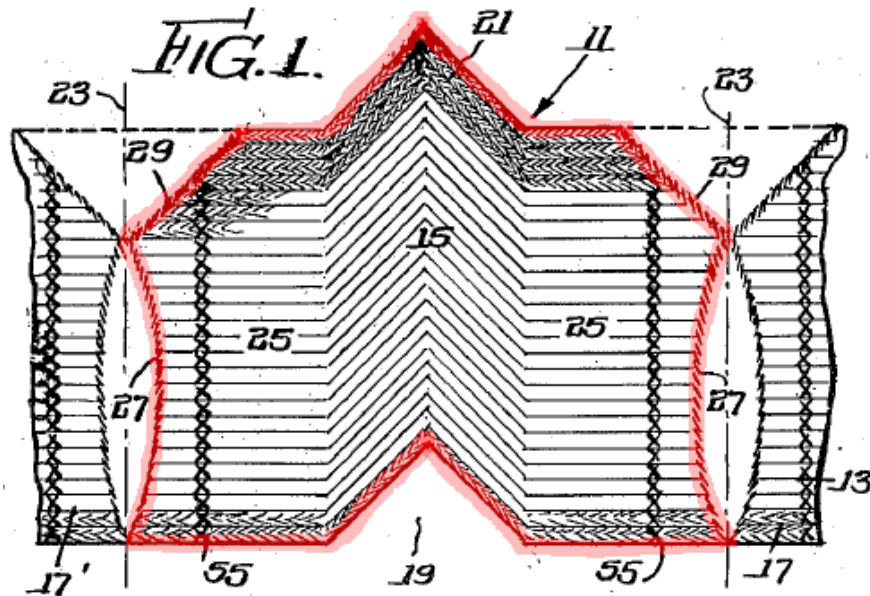
150. Claim 2 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile structure includes simultaneously knitting a plurality of textile elements.”

151. Zuckerman discloses claim 2. Zuckerman describes “knit[ting] a continuous strip [13] comprising several blanks [11].” Ex.1008, 1(L):5-15; *see also id.*, 1(R):45-50, 2(L):12-22. As a result, Zuckerman discloses simultaneously knitting a textile element (blank 11) with a surrounding textile structure (portion of continuous strip 13 surrounding blank 11) includes simultaneously knitting a plurality of textile elements (blanks 11).

D. Zuckerman Anticipates Claim 3

152. Claim 3 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile includes knitting an outline of the knitted textile element.”

153. Zuckerman discloses claim 3. Zuckerman describes that the simultaneous knitting includes knitting an outline of the knitted textile element. Such an outline (colored red) of the knitted textile element is illustrated below.



Ex.1008, Fig. 1 (annotated). This figure shows varying stitches throughout continuous strip 13, forming an outline of the knitted textile element (blank 11) along lines 27 and 29. Thus, Zuckerman discloses claim 3.

154. Claim 5 depends from claim 1 and recites: “wherein the knitted textile element has a substantially planar configuration upon removal from the surrounding knitted textile structure.”

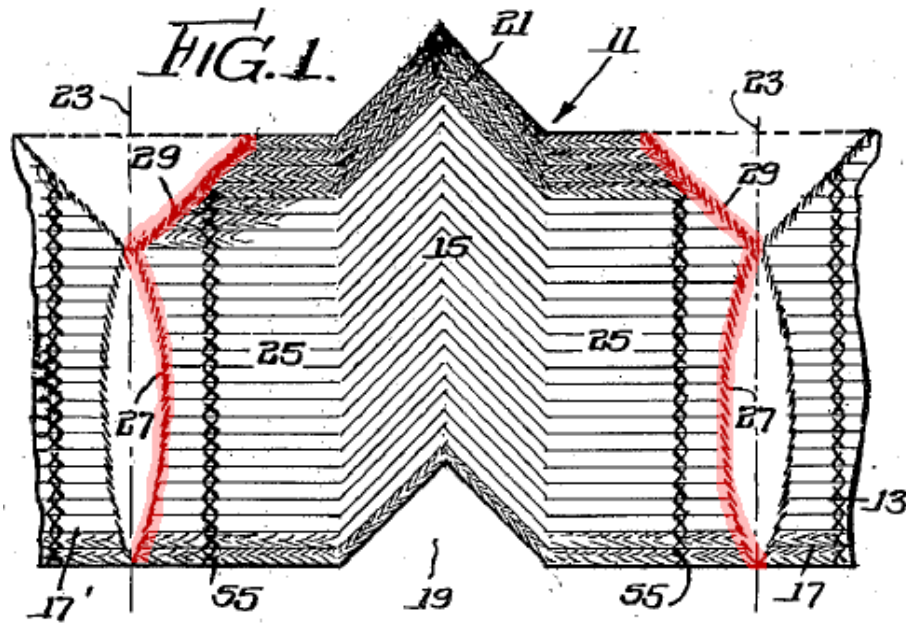
lululemon Ex. 1003
IPR Petition - USP 8,266,749

156. As I explained for limitation 1[b] in this ground, Zuckerman discloses that its knitted textile element is cut out of continuous strip 13 and separated from the surrounding textile structure. In addition, Zuckerman describes that its knitted textile element's edges are brought together and stitched "to form a rounded heel portion," Ex.1008, 2(L):53-56, introducing a non-planar structure, which confirms that the knitted textile element (blank 11) in Zuckerman has substantially planar configuration upon removal from the surrounding textile structure (portion of continuous strip 13 surrounding blank 11) and before bringing the edges together.

F. Zuckerman Anticipates Claim 6

157. Claim 6 depends from claim 1 and recites: "wherein the knitted textile element includes longitudinal edges formed when the knitted textile element is removed from the surrounding knitted textile structure."

158. Zuckerman discloses claim 6. According to Zuckerman, "[t]he opposite cut edges of the blank [11] are preferably formed as shown in Figure 1 [below] of the drawing, the edges being curved inwardly toward the herring bone portion 15 as at 27 [red] from the side of the blank containing the notches 19 toward the side of the blank containing the projections 21, the remaining edge being cut on a slant as shown at 29 [red]." Ex.1008, 2(L):22-29.



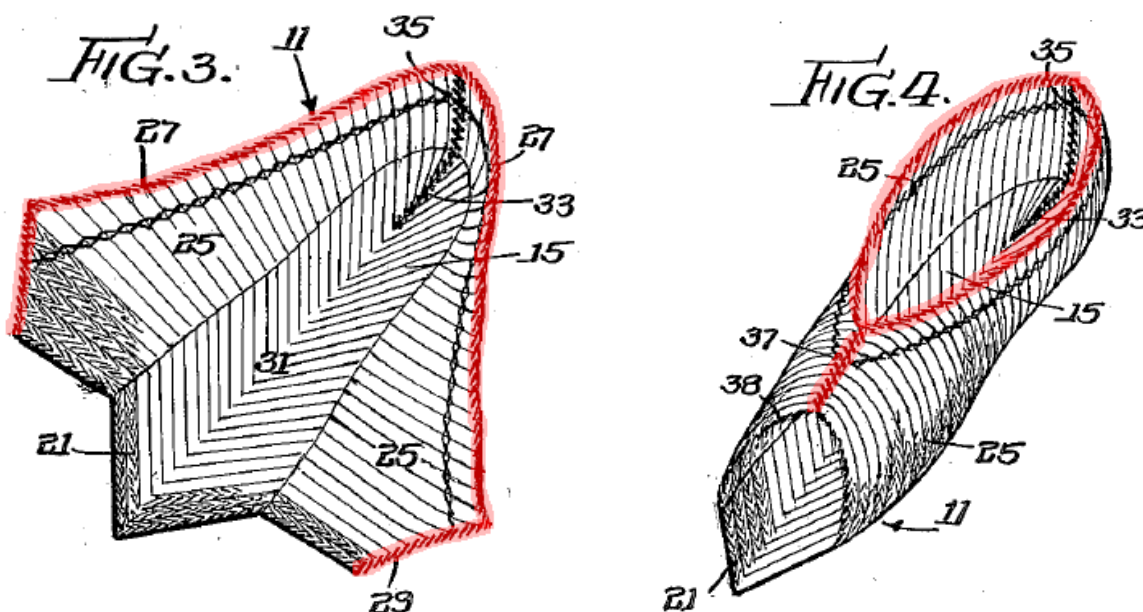
Id., Fig. 1 (annotated). Zuckerman's cut edges 27 and 29 are longitudinal edges of the knitted textile element (blank 11) that are formed when Zuckerman's knitted textile element (blank 11) is removed from the surrounding knitted textile structure (portion of continuous strip 13 surrounding blank 11). As a result, Zuckerman discloses this claim.

G. Zuckerman Anticipates Claim 7

159. Claim 7 depends from claim 6 and recites: "wherein the longitudinal edges are joined together to define at least a portion of a void for receiving a foot."

160. Zuckerman discloses claim 7. According to Zuckerman, "[t]he curved cut edges 27 [red] at opposite ends of the blank [11] co-operate to form the ankle receiving opening in the finished article while the diagonally cut edges 29 [red] are

secured together [at 37] to form an instep covering portion,” which is illustrated in Figures 3-4 below. Ex.1008, 2(L):29-34, 2(L):60-64.



Id., Figs. 3-4 (annotated). As a result, Zuckerman discloses this claim.

H. Zuckerman Anticipates Claim 8

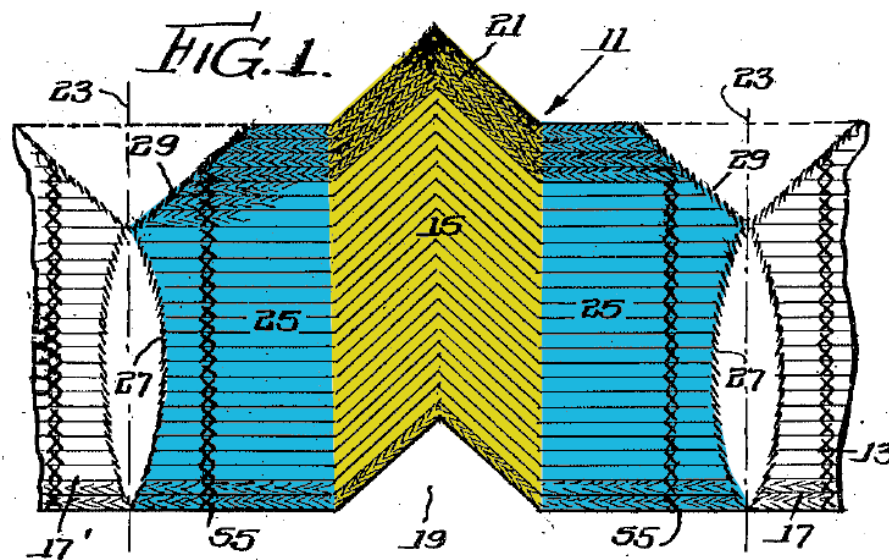
161. Claim 8 depends from claim 1 and recites: “wherein the knitted textile element has a plurality of different knitted textures formed by varying at least one of the stitch type and the yarn type.”

162. Zuckerman discloses claim 8. As I explained with respect to limitation 1[a] in this ground, Zuckerman’s knitted textile element (blank 11) has a plurality of different knitted textures (multitextured) formed by varying at least one of the stitch type and the yarn type.

I. Zuckerman Anticipates Claim 11

163. Claim 11 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile structure includes forming the knitted 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 knitted textile element.”

164. Zuckerman discloses claim 11. Zuckerman describes knitting continuous strip 13 where the knitted textile element (blank 11) includes a first area (colored blue) and a second area (colored yellow) with a unitary construction, as is illustrated in Figure 1 below. Ex.1008, 1(R):50-2(L):11.



Id., Fig. 1 (annotated). Zuckerman’s knitted textile element includes ribs and has the first area (sole portion 15) with an “angular arrangement of the ribs” and the second area (side portions 25) with “parallel ribs.” *Id.*, 1(R):50-2(L):11, Fig. 1. An angular rib arrangement creates a different texture than a parallel rib arrangement at least because of the different stitch configuration used to knit horizontal ribs versus diagonal ribs. Furthermore, Zuckerman discloses “knitt[ing] more tightly” sole portion 15 than other parts like side portions 25. *Id.*, 2(L):44-52. Tighter knitting involves incorporating a different stitch configuration in the sole portion of Nishida’s knitted textile element than the other parts of the knitted textile element, resulting in different textures in the sole portion compared to the other parts. As a result, Zuckerman discloses this claim.

J. Zuckerman Anticipates Claim 13

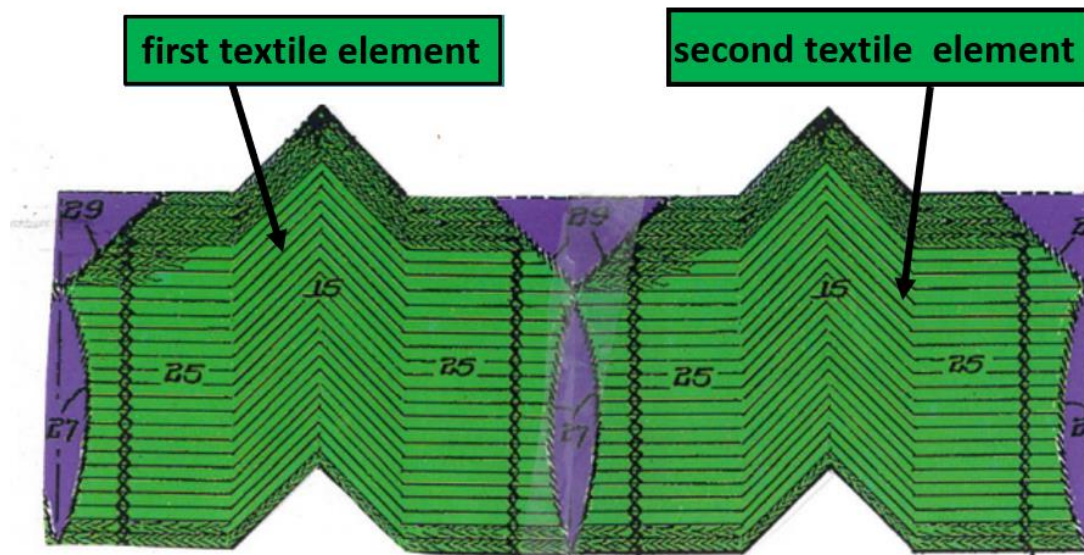
165. Claim 13 is similar to claims 1 and 2, and the same disclosures from Zuckerman that disclose the limitations of claims 1 and 2 also similarly disclose the limitations of claim 13.

1. Preamble

166. The preamble of claim 13 is the same as the preamble of claim 1. It is disclosed by Zuckerman for the same reasons.

2. Limitation 13[a]: “knitting a first textile element and a second textile element simultaneously with knitting a surrounding textile structure, the first knitted textile element located within a first portion of the knitted textile structure, the second knitted textile

11. I illustrate the arrangement of two complete textile elements with the following figure that I prepared.



As a result, Zuckerman discloses this limitation.

3. **Limitation 13[b]: “varying at least one of the types of stitches or the types of yarns in the knitted textile structure to impart a texture to the first and second knitted textile elements different from a texture of the knitted textile structure extending between the first and second portions”**

168. Zuckerman discloses limitation 13[b]. As I explained for limitation 1[a], Zuckerman discloses that a knitted textile element (blank 11) has at least one knitted texture that differs from a knitted texture in a surrounding textile structure (portion of continuous strip 13 surrounding blank 11). These differing textures differ as a result of using multiple stitch types or yarn types in the knitted textile element and cause the knitted textile element to have a different texture than a texture in the surrounding textile structure as I explained for limitation 1[a]. Zuckerman’s stitch

type varies at least in part because the stitch type for the parallel ribs differs from the stitch type for the diagonal ribs. Zuckerman's surrounding textile structure (portion of continuous strip 13 surrounding blank 11) is a knitted textile structure extending between the first and second textile elements (blank 11) as is shown in Figure 1 below.

Ex.1008, Fig. 1 (annotated). As a result, Zuckerman discloses varying at least one of the types of stitches or the types of yarns (varying stitch and/or yarn type) in the knitted textile structure (continuous strip 13) to impart a texture to the first and second knitted textile elements (blanks 11) different from a texture of the knitted textile structure extending between the first and second portions (portion of continuous strip 13 surrounding blank 11).

4. Limitation 13[c]: “removing the first and second knitted textile elements from the knitted textile structure”

169. Zuckerman discloses limitation 13[c]. As I explained discussed for limitation 1[b], Zuckerman discloses removing (cutting) a knitted textile element (blank 11) from a surrounding textile structure (portion of continuous strip 13 surrounding blank 11). In addition, Zuckerman discloses removing (cutting) two textile elements (blanks 11) from the knitted textile structure (continuous strip 13). According to Zuckerman, “blanks [11] are preferably formed by cutting the same from a strip of fabric 13.” Ex.1008, 1(R):45-50; *see also id.*, 1(L):5-15. As a result, Zuckerman discloses removing (cutting) the first and second knitted textile elements (blanks 11) from the knitted textile structure (continuous strip 13).

5. Limitation 13[d]: “incorporating at least one of the first and second knitted textile elements into the article of footwear”

170. Zuckerman discloses limitation 13[d]. Zuckerman discloses incorporating at least one of its knitted textile elements (blank 11) into the article of footwear (slipper) for the reasons I explained for limitation 1[c].

K. Zuckerman Anticipates Claim 14

171. Claim 14 depends from claim 13 and recites: “wherein knitting a first textile knitted element simultaneously with a surrounding knitted textile structure includes knitting an outline of the first knitted textile element.”

172. Zuckerman discloses claim 14. Zuckerman describes that knitting a first textile element (one of blank 11) simultaneously with a surrounding textile structure (portion of continuous strip 13 surrounding blank 11) includes knitting an outline of the first knitted textile element (one of blank 11) for the reasons I explained for claim 3 in this ground.

L. Zuckerman Anticipates Claim 15

173. Claim 15 depends from claim 13 and recites: “wherein the first and second textile knitted elements have substantially planar configurations upon removal from the surrounding knitted textile structure.”

174. Zuckerman discloses claim 15. As I explained for claim 5 in this ground, Zuckerman discloses a knitted textile element (blank 11) has substantially planar configuration upon removal from a surrounding textile structure (portion of continuous strip 13 surrounding blank 11). Since each of the knitted textile elements (blank 11) in Zuckerman has a substantially planar configuration upon removal, Zuckerman additionally discloses its first and second knitted textile elements (blanks 11) have substantially planar configurations upon removal from the surrounding knitted textile structure (portion of continuous strip 13 surrounding blank 11). As a result, Zuckerman discloses this claim.

M. Zuckerman Anticipates Claim 16

175. Claim 16 depends from claim 13 recites: “wherein the first knitted textile element includes longitudinal edges formed when the first knitted textile element is removed from the surrounding knitted textile structure.”

176. Zuckerman discloses claim 16. Zuckerman discloses that the first knitted textile element (blank 11) includes longitudinal edges formed when the first knitted textile element (blank 11) is removed from the surrounding knitted textile structure (portion of continuous strip 13 surrounding blank 11) for the reasons I explained for claim 6 in this ground. *See also* Ex.1008, Fig. 1.

N. Zuckerman Anticipates Claim 17

177. Claim 17 depends from claim 16 and recites: “wherein the longitudinal edges are joined together to define at least a portion of a void for receiving a foot.”

178. Zuckerman discloses claim 17 for the reasons I explained for claim 7 in this ground.

O. Zuckerman Anticipates Claim 21

179. Claim 21 depends from claim 13 and recites: “wherein knitting the first knitted textile element simultaneously with a surrounding knitted textile structure includes forming the first knitted 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 first knitted textile element.”

180. Zuckerman discloses claim 21 for the reasons I explained for claim 11 in this ground. Claim 21 recites similar limitations for a “first knitted textile element” instead of a “knitted textile element” like claim 11.

XII. GROUND 4: ZUCKERMAN IN VIEW OF A POSA’S GENERAL KNOWLEDGE RENDERS OBVIOUS CLAIMS 3, 9-10, 14, AND 19-20

A. Claims 3 and 14

181. Claim 3 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile includes knitting an outline of the knitted textile element.” Claim 14 depends from claim 13 and recites: “wherein knitting a first textile knitted element simultaneously with a surrounding knitted textile structure includes knitting an outline of the first knitted textile element.”

182. As I described above, Zuckerman discloses the limitations of claims 3 and 14, and the claims are anticipated. Claims 3 and 14 also would have been obvious over Zuckerman in view of a POSA’s general knowledge. As I explained for limitations 1[a]-1[b] and 13[a]-13[b] in Ground 3, Zuckerman discloses simultaneously knitting a textile element with a surrounding textile structure and removing the knitted textile element from the surrounding textile structure. It would have been known by a POSA prior to 2004 how to knit an outline as part of a knit structure like Zuckerman’s and the benefits of incorporating such an outline into a

knit structure like Zuckerman's. This is evidenced by Spencer (Ex.1009), which is a widely used reference book about knitting technology and commonly used in college courses that teach knitting. Spencer describes outlines in multiple chapters and highlights uses and benefits of outlines which would be generally known to a POSA. *See e.g.*, Ex.1009, 184 ("28 gauge (E 14) pillar inlay using outline threads [Karl Mayer]"), 30 ("cutting around the outline after finishing"), 90 ("[c]utting-out techniques vary widely, from marked lays whose outlines are followed by hand-guided cutting knives"), 106 ("production of a firm starting welt" where "[a] welt is an attractive and secure edge of a knitted article that helps to prevent laddering or unroving of a structure").

183. A POSA would have found it obvious for two reasons to additionally knit an outline of the knitted textile element when knitting continuous strip 13 in Zuckerman. First, an outline of the knitted textile element is shown in Zuckerman, including along lines 27 and 29 in Figure 1. Ex.1008, Fig. 1. A POSA would have understood that varying the stitches throughout continuous strip 13 would provide an outline to function as a guide for subsequent cutting, sewing, or assembly steps. *See, e.g.*, Ex.1009, 30 ("cutting around the outline after finishing"), 90 ("[c]utting-out techniques vary widely, from marked lays whose outlines are followed by hand-guided cutting knives"). A POSA would have been motivated to add this guide because it would have been known to help with improving efficiency (for example,

reducing time spent measuring or marking by creating a precise edge identifier relatively early in the manufacturing process), minimizing errors (for example, increasing likelihood that desired boundaries are followed or simplifying quality control by facilitating identification of deviations and detects), and reducing waste (for example, helping with minimizing the amount of surrounding structure material used and subsequently trimmed away during manufacturing). Second, a POSA would have understood that varying the stitches to provide an outline would be useful for increasing structural integrity around the knitted textile element's edges. *See, e.g., id.*, 106 (“production of a firm starting welt” where “[a] welt is an attractive and secure edge of a knitted article that helps to prevent laddering or unroving of a structure”). A POSA would have been motivated to provide the outline because a POSA would have understood that the edges of Zuckerman's knitted textile element could be prone to laddering or unroving (i.e., unravelling) during processing and that the outline would help to keep those areas from laddering or unroving. A POSA also would have found it easy to simultaneously knit such an outline, for instance with differences in stitches forming the outline relative to other nearby areas, during knitting of Zuckerman's continuous strip 13 as it would have involved no more than conventional knitting processes.

184. As a result, these claims would also have been obvious.

B. Claims 9-10 and 19-20

185. Claim 9 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile structure includes utilizing a wide-tube circular knitting machine.” Claim 19 depends from claim 13 and recites: “wherein knitting the first and second knitted textile elements simultaneously with a surrounding knitted textile structure includes utilizing a wide-tube circular knitting machine.”

186. Claim 10 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile structure includes utilizing a jacquard double needle-bar raschel knitting machine.” Claim 20 depends from claim 13 and recites: “wherein knitting the first and second textile knitted elements simultaneously with a surrounding knitted textile structure includes utilizing a jacquard double needle-bar raschel knitting machine.”

187. These claims would have been obvious over Zuckerman in view of a POSA’s general knowledge. As I explained in Ground 2, wide-tube circular and jacquard double needle-bar raschel knitting machines were well known prior to the ’749 patent. A POSA would have found it obvious to use either machine with the process described in Zuckerman. Zuckerman, like Nishida, leaves it to a POSA to select a process and appropriate machine for knitting its knitted textile element and surrounding textile structure because Zuckerman does not expressly state what

knitting process and machine is used to knit its continuous strip 13. A POSA would have known that either a wide-tube circular knitting machine or a jacquard double needle bar raschel knitting machine would have been usable to knit the structures disclosed in Zuckerman and would have been motivated to choose either machine.

188. A POSA would have selected a circular machine (i.e., a wide-tube circular knitting machine) or a raschel machine (i.e., a jacquard double needle bar raschel knitting machine) as one of a finite number of options for knitting continuous strip 13 in Zuckerman for the reasons I explained in Ground 2. The selection of circular or raschel knitting machines would have been nothing more than applying a known technique (operating a wide-tube circular knitting machine or a jacquard double needle bar raschel knitting machine to knit a textile element) to a known method (constructing a continuous strip such as Zuckerman's that includes both knitted textile element(s) (blank(s) 11) and surrounding knitted textile structure (portion of continuous strip 13 surrounding blank 11)) that is ready for improvement and yields predictable results (knitting using a wide-tube circular knitting machine or a jacquard double needle bar raschel knitting machine a continuous strip such as Zuckerman's).

189. A POSA would have reasonably expected success in knitting Zuckerman's structures with a wide-tube circular knitting machine or a jacquard double needle bar raschel knitting machine. This would have involved just the choice

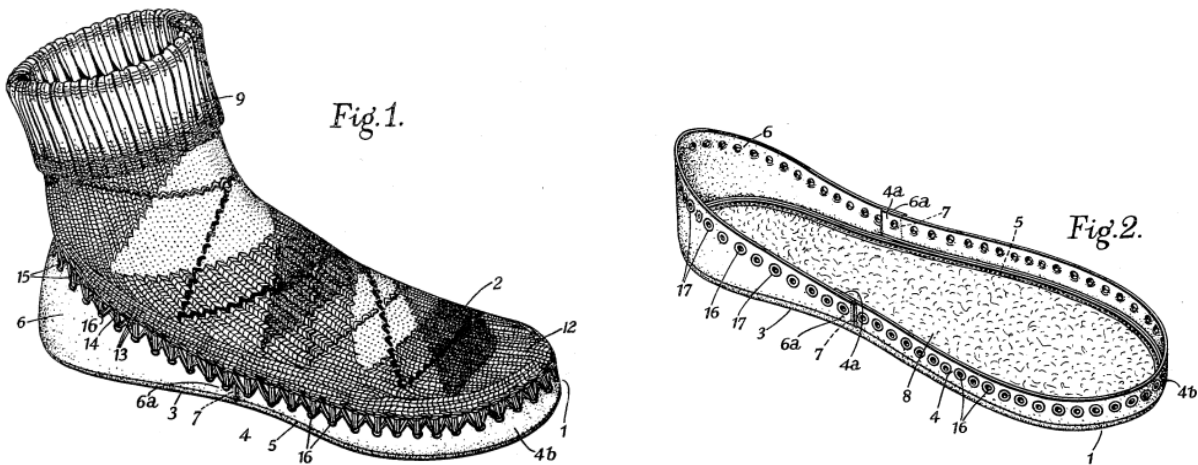
of particular circular or raschel machines for knitting Zuckerman's continuous strip

13. The machines were commercially available and required no more than basic setting up to knit Zuckerman's structures. It would have been known to a POSA that wide-tube circular and jacquard double needle bar raschel knitting machines would easily knit a simple article like Zuckerman's prior to the '749 patent. As a result, these claims would have involved no more than the routine selection of two particular types of knitting machines for use in practicing Zuckerman's method.

**XIII. GROUND 5: ZUCKERMAN IN VIEW OF DOUGHTY RENDERS
OBVIOUS CLAIM 12**

A. Summary of Doughty (Ex.1017)

190. Doughty describes "articles of footwear such, for example, as ... so-called slipper socks." Ex.1017, 1:22-24. Doughty provides that its "article of footwear compris[es] a separately made foot bottom or sole section [illustrated by Fig. 2 below right] which is joined to a knitted instep portion [illustrated by Fig. 1 below left] in such a way as to be readily detachable therefrom." *Id.*, 1:22-29.

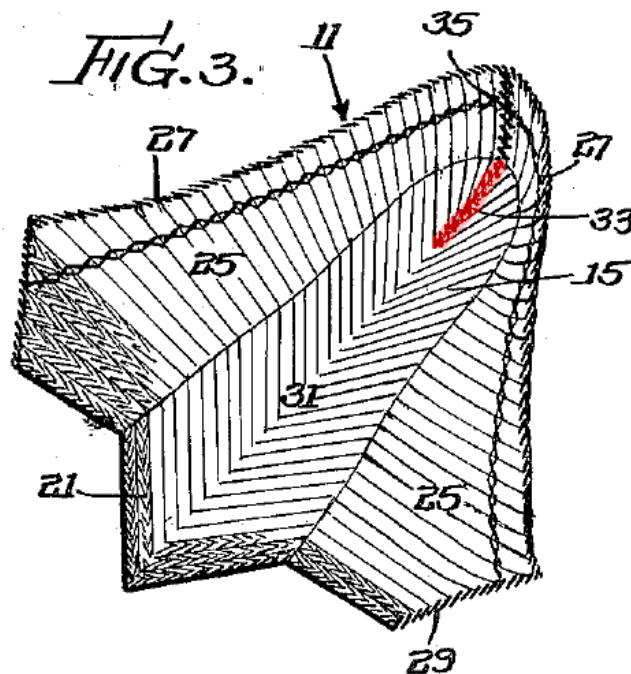


Id., Figs. 1-2. Doughty explains that “the effective life of the instep portion can be appreciably extended” from the separate and detachable design. *Id.*, 1:50-52.

B. Claim 12

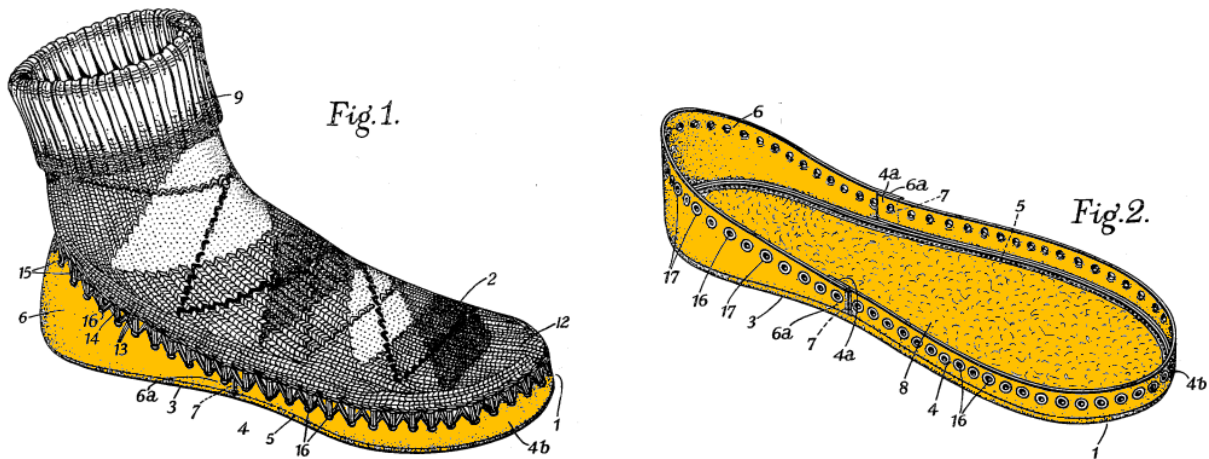
191. Claim 12 depends from claim 1 and recites: “wherein incorporating the knitted textile element into the article of footwear includes securing edges of the knitted textile element to form a seam that extends along a lower region of an upper and securing the upper to a sole structure.”

192. A POSA would have found claim 12 obvious over Zuckerman in view of Doughty. Zuckerman describes that incorporating its knitted textile element (blank 11) into the article of footwear (slipper) includes securing the knitted textile element’s edges to form a seam extending along an upper’s lower region. According to Zuckerman, “[t]o fashion a slipper from blank 11, the edges defining the notch 19 are brought together and stitched as at 33 [colored red] to form a rounded heel portion in the sole,” as shown in Figure 3 below. Ex.1008, 2(L):53-60.



Id., Fig. 3 (annotated). As can be seen, Zuckerman's stitching 33 forms a seam that extends along the upper's lower region that is positioned under a wearer's foot.

193. A POSA would have found it obvious in view of Doughty to additionally secure Zuckerman's upper to a sole structure. Doughty provides "an article of footwear comprising a separately made foot bottom or sole section [colored orange] which is joined to a knitted instep portion in such a way as to be readily detachable therefrom," as illustrated in Figures 1-2 below. Ex.1017, 1:25-29.



Id., Figs. 1-2 (annotated). According to Doughty, “the knitted instep portion can, where appropriate, be readily detached from the foot bottom or sole section for washing, and thereafter as readily and neatly reattached either to the same, or to a fresh foot bottom or sole section.” *Id.*, 1:33-38. This construction is advantageous “where the foot bottom or sole section is made of a material which cannot be washed like knitted fabric or might deteriorate or become otherwise spoiled by wetting” or “where the knitted instep portion is an expensively produced component as compared with the foot bottom or sole section, the latter can, when worn out, be easily detached and replaced by a new section.” *Id.*, 1:38-47. “In this way the effective life of the instep portion can be appreciably extended.” *Id.*, 1:50-52.

194. A POSA would have been motivated to secure Zuckerman’s upper to a sole structure such as Doughty’s. The incorporation of such a sole structure would permit easy washing of and reduced wear on a knit upper like Zuckerman’s and allow for changing of that sole structure if the sole structure were to wear out, which

would extend the knit upper's life. The incorporation of such a sole structure would further permit use of the knit upper in additional, varied environments because the sole structure would provide added protection and durability.

195. Moreover, a POSA would have reasonably expected success in attaching a sole structure such as Doughty's to a knit upper such as Zuckerman's. It would have been trivial to attach such a sole structure to a knit upper such as Zuckerman's. The ease of attaching such sole structures is confirmed by other prior art patents, such as U.S. Patent Nos. 1,803,554 (Knilians – Ex.1006) and 2,147,197 (Glidden – Ex.1007), which similarly describe attaching a sole structure to a knit upper such as Zuckerman's. For example, Knilians describes a shoe having a separate sole and “sock-like upper 10” that can be used for basketball. Ex.1006, 1:1-56, Figs. 1-4. Knilians explains that its shoe is “inexpensive” and allows for “expeditious[] remov[al]” of the upper from the sole. *Id.*, 1:11-28. Similar to Doughty, Knilians describes “ties 14” that connect the sole and upper. *Id.*, 1:68-73. As another example, Glidden describes a unitary, knit upper that is formed separately from the remainder of the shoe. Ex.1007, 1(R):33-2(L):4. The sole and other portions are then attached “by adhesion or by sewing.” *Id.*

196. For the foregoing reasons, claim 12 would have been obvious.

**XIV. GROUND 6: NISHIDA IN VIEW OF ZUCKERMAN RENDERS
OBVIOUS CLAIMS 11 AND 21**

197. Claim 11 depends from claim 1 and recites: “wherein simultaneously knitting a textile element with a surrounding textile structure includes forming the knitted 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 knitted textile element.” Claim 21 depends from claim 13 and recites: “wherein knitting the first knitted textile element simultaneously with a surrounding knitted textile structure includes forming the first knitted 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 first knitted textile element.”

198. Claims 11 and 21 would have been obvious over Nishida in view of Zuckerman. Nishida describes simultaneously knitting a textile element with a surrounding textile structure as I explained for limitations 1[a] and 13[a] in Ground 1. In addition, according to Nishida, the different areas of its knitted textile element have a unitary construction because “when the strip of material (1) is manufactured,

the patterns (2) of the uppers are produced, at the same time as the strip of material.”

Ex.1005, Abstract; *see also id.*, 4.

199. A POSA would have found it obvious in view of Zuckerman to knit different stitch configurations in different areas of Nishida’s knitted textile element. As I explained for limitation 1[a] in Ground 3, Zuckerman provides “knitt[ing] more tightly” sole portion 15 than other parts (e.g., side portions 25). A POSA would have known that a more tightly knit fabric involves knitting with a different stitch configuration than a less tightly knit fabric.

200. A POSA would have been motivated to knit one stitch configuration (for example, knit more tightly) in a first area of Nishida’s knitted textile element and a different stitch configuration (for example, knit less tightly) in a second area. This would be consistent with the encouragement in Nishida that “the material webs to be used can be produced by computerized web material production equipment, whose programs, according to the appropriate default setting, ***can be adjusted almost freely.***” Ex.1005, 8 (emphasis added). A POSA would have understood that the different stitch configurations would provide different properties to the knitted textile element’s different areas. *Id.*

201. Stitch configurations such as knitting more tightly would have afforded known benefits, such as enhanced durability and support. *See, e.g.,* Ex.1008, 2(L):35-52; Ex.1005, 5 (“wear-resistant part”), 6 (“[A]reas ... may be designed in

the form of tension bands and/or be produced in a particularly tensile-resistant manner.”); Ex.1016, 5 (“[i]nterlock rib” is “semi-elastic” whereas full needle rib is “very elastic”), 23 (describing how a “slip stitch cam setting” “produces a tighter fabric” whereas a tucking stitch setting “produces a very stretchy fabric”), 35 (“blister fabrics” have “comparatively less stretch”), 51 (similar); Ex.1009, 47 (describing different properties of “[r]ib structures” and “plain structures”), 49 (describing different properties of rib types), 53 (same), 57 (same), 118 (explaining how tighter stitch configurations alter properties and illustrating resulting textures); Ex.1007, 1(R):33-41 (“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.”).

202. In contrast, stitch configurations such as knitting less tightly would have afforded other known benefits, such as enhanced breathability, flexibility, and weight reduction. *See, e.g.*, Ex.1005, 4 (“design the individual patterns or partial patterns to be soft, rigid, elastic, of different color, etc., depending on the subsequent stress or desired shape”) (“[T]he shoe upper or the associated sole part are produced in the required quality, thickness, multilayered, or the like.”), 5 (“[T]oe area 14 is to

be designed to be relatively pliable, soft or elastic, and optionally also air-permeable.”) (“[T]he toe area 14 has an advantageous air exchange capability.”), 6-7 (“The finished shoe uppers made from material webs are characterized by an extremely low weight.”). As one example, a POSA would have chosen the first area to be Nishida’s sole portion and the second area to be Nishida’s non-sole portion in order to provide the sole portion with enhanced durability and/or support and the non-sole portion with enhanced breathability, flexibility, and/or weight reduction.

203. A POSA would have understood that changing knitting tightness would be a desirable and, in certain implementations, lower cost approach for adjusting properties of an upper, for example in place of knitting different yarns in different areas of an upper as provided in Nishida. The switching between yarns and the switching between stitch configurations would have been no more than two known approaches of accomplishing desired and expected properties within an upper’s areas. *See, e.g.,* Ex.1009, 31-32 (explaining that changing “lapping movements” which create warp knit stitch configurations “can be arranged to produce fabrics ranging from dimensionally stable to highly elastic without necessarily changing the type of yarn”). For a POSA, the switching between yarns and the switching between stitch configurations would have involved no more than choosing from two known variants to achieve the same goal.

204. A POSA would have reasonably expected success in knitting different stitch configurations in the different areas of Nishida's knitted textile element in view of Zuckerman. A POSA would have found it simple to introduce different stitch configurations in knitting Nishida's knitted textile element. A POSA would have known how to use Nishida's "computerized web material production equipment, whose programs, according to the appropriate default setting, can be adjusted almost freely" to knit such different stitch configurations in the different areas. *See, e.g.*, Ex.1005, 8.

205. As a result, these claims would have been obvious.

XV. SECONDARY CONSIDERATIONS

206. I am not aware of any secondary considerations of non-obviousness that would support non-obviousness of the '749 patent.

207. Given that the articles of footwear claimed in the '749 patent are not new and nonobvious, I am unaware of any long-felt need in the industry, unexpected results, skepticism of the invention, or teaching away from the invention. I am also unaware of any praise for the alleged inventions or copying of the alleged inventions by other companies. If Patent Owner identifies any alleged evidence of secondary considerations in the future, I reserve the right to respond to that information.

XVI. CONCLUSION

208. For the foregoing reasons, it is my opinion that claims 1-21 of the '749 patent are anticipated or would have been obvious to a POSA at the relevant time in view of the prior art referenced above.

209. I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: 1/10/2024

By:



Dr. David S. Brookstein