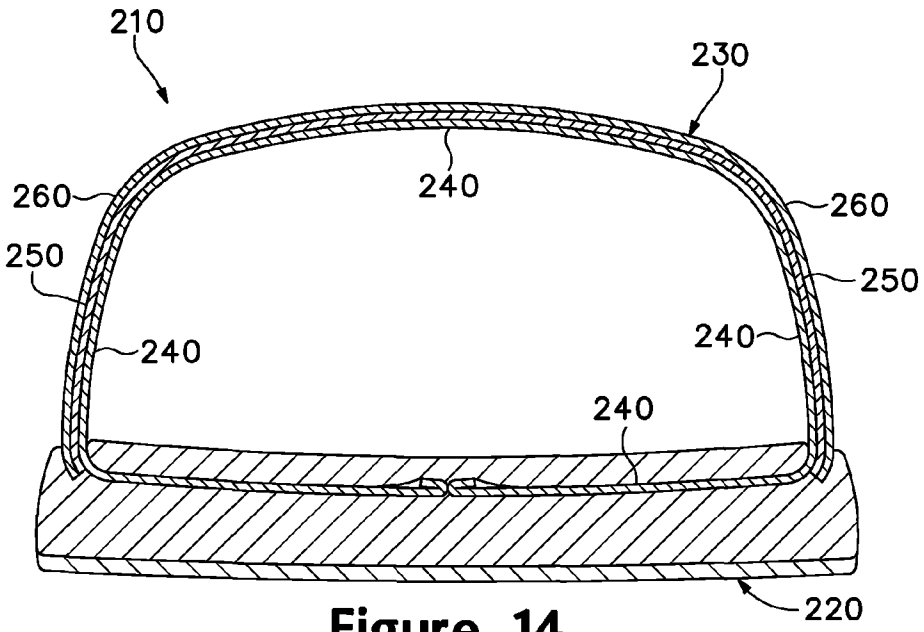



**Figure 14**

Banner & Witcoff Ref. No. 005127.00260
Client Ref. No.

# JOINT DECLARATION FOR PATENT APPLICATION

As the below named inventors, we hereby declare that:

Our residence, post office address and citizenship are as stated below next to our names;

We believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled An Article of Footwear Having a Textile Upper, the specification of which

- ☐ is attached hereto.
- ☒ was filed on 3/3/04 as Application Serial Number 10/791,289 and was amended on _____ (if applicable).
- ☐ was filed under the Patent Cooperation Treaty (PCT) and accorded International Application No. _____, filed _____, and amended on _____ (if any).

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

We hereby acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56(a).

## Prior Foreign Application(s)

We hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

| Country | Application No. | Date of Filing (day month year) | Date of Issue (day month year) | Priority Claimed Under 35 U.S.C. §119 |
|---|---|---|---|---|
| | | | | |

## Prior United States Provisional Application(s)

We hereby claim priority benefits under Title 35, United States Code, §119(e)(1) of any U.S. provisional application listed below:

| U.S. Provisional Application No. | Date of Filing (day month year) | Priority Claimed Under 35 U.S.C. §119(e)(1) |
|---|---|---|
| | | |

## Prior United States Application(s)

We hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

| Application Serial No. | Date of Filing (Day, Month, Year) | Status — Patented, Pending, Abandoned |
|---|---|---|
| | | |



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Skechers EX1013-p. 1402
Skechers v Nike

Banner & Witcoff Ref. No. 005127.00260
Client Ref. No.

## Power of Attorney

And we hereby appoint, both jointly and severally, as our attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith the practitioners at:

Customer Number: 22909 (PORT)

Please address all correspondence and telephone communications to the address and telephone number for this Customer Number.

We hereby declare that all statements made herein of our 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 and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature Bhupesh Dua Date 07/21/04
Full Name of First Inventor Dua (Family Name) Bhupesh (First Given Name) (Second Given Name)
Residence Portland, Oregon Citizenship U.S.A.
Post Office Address 3216 NW Spencer Street, Portland, Oregon 97229

Signature Edward N. Thomas Date 7/15/04
Full Name of Second Inventor Thomas (Family Name) Edward (First Given Name) Nathaniel (Second Given Name)
Residence Portland, Oregon Citizenship U.S.A.
Post Office Address 10226 NW Wilshire Lane, Portland, Oregon 97229

| Electronic Patent Application Fee Transmittal | |
|---|---|
| **Application Number:** | |
| **Filing Date:** | |
| **Title of Invention:** | An Article Of Footwear Having A Textile Upper |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Attorney Docket Number:** | 005127.01568 |
| Filed as Large Entity | |

**Utility under 35 USC 111(a) Filing Fees**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| Utility application filing | 1011 | 1 | 330 | 330 |
| Utility Search Fee | 1111 | 1 | 540 | 540 |
| Utility Examination Fee | 1311 | 1 | 220 | 220 |
| **Pages:** | | | | |
| **Claims:** | | | | |
| Claims in excess of 20 | 1202 | 19 | 52 | 988 |
| Independent claims in excess of 3 | 1201 | 2 | 220 | 440 |
| **Miscellaneous-Filing:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **2518** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 8394954 |
| **Application Number:** | 12879517 |
| **International Application Number:** | |
| **Confirmation Number:** | 7137 |
| **Title of Invention:** | An Article Of Footwear Having A Textile Upper |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22910 |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Filer Authorized By:** | Jeanne Marian Tanner |
| **Attorney Docket Number:** | 005127.01568 |
| **Receipt Date:** | 10-SEP-2010 |
| **Filing Date:** | |
| **Time Stamp:** | 15:43:34 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Deposit Account |
| Payment was successfully received in RAM | $2518 |
| RAM confirmation Number | 2257 |
| Deposit Account | 190733 |
| Authorized User | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | Application Data Sheet | 005127-01568_ADS.pdf | 836849<br>99d11578283be94b5f77c8fbea4b854be7683a4c | no | 5 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | | 005127-01568_App.pdf | 135319<br>d821367fc3aa6ec406dc1613bfa3b32b57a5e49c | yes | 26 |
| | **Multipart Description/PDF files in .zip description** | | | | |
| | **Document Description** | | **Start** | **End** | |
| | Specification | | 1 | 18 | |
| | Claims | | 19 | 25 | |
| | Abstract | | 26 | 26 | |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Drawings-only black and white line drawings | 005127-01568_Draw.pdf | 310770<br>ccc326c6f6255dc78af803b8aa76df58308e3502 | no | 12 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Oath or Declaration filed | 005127-01568_Declaration.pdf | 88048<br>d36c93129f4f72407d9d5371b1e5027ddebcf8fa | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Fee Worksheet (PTO-875) | fee-info.pdf | 37834<br>607135dd8cfd9d9b6f6dda12eae7e100f75df19 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 1408820 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (12-04)

Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**Date:** 9/10/10

| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | 12/879,517 |
|---|---|

## APPLICATION AS FILED – PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | SMALL ENTITY RATE ($) | SMALL ENTITY FEE ($) | OR | OTHER THAN SMALL ENTITY RATE ($) | OTHER THAN SMALL ENTITY FEE ($) |
|---|---|---|---|---|---|---|---|
| BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | | | N/A | 330 |
| SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | | | N/A | 540 |
| EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | | | N/A | 220 |
| TOTAL CLAIMS (37 CFR 1.16(i)) | 39 minus 20 = | 19 | x$26 | | OR | x$52 | 988 |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | 5 minus 3 = | 2 | x$110 | | | x$220 | 440 |
| APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $270 ($135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | | | |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | 195 | | | 390 | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | | | TOTAL | 2518 |

## APPLICATION AS AMENDED – PART II

| | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | SMALL ENTITY RATE ($) | SMALL ENTITY ADDI-TIONAL FEE ($) | OR | OTHER THAN SMALL ENTITY RATE ($) | OTHER THAN SMALL ENTITY ADDI-TIONAL FEE ($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT A | Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| | Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| | Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | N/A | | OR | N/A | |
| | | | | | | TOTAL ADD'T FEE | | OR | TOTAL ADD'T FEE | |

| | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDI-TIONAL FEE ($) | OR | RATE ($) | ADDI-TIONAL FEE ($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT B | Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| | Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| | Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | N/A | | OR | N/A | |
| | | | | | | TOTAL ADD'T FEE | | OR | TOTAL ADD'T FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 12/879,517 | 09/10/2010 | 3728 | 2518 | 005127.01568 | 39 | 5 |

**CONFIRMATION NO. 7137**

22910
BANNER & WITCOFF, LTD.
28 STATE STREET
SUITE 1800
BOSTON, MA 02109-1701

**FILING RECEIPT**

*OC000000043587888*

Date Mailed: 09/21/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Applicant(s)**

Bhupesh Dua, Portland, OR;
Edward Nathaniel Thomas, Portland, OR;

**Assignment For Published Patent Application**

NIKE, INC., Beaverton, OR

**Power of Attorney:** The patent practitioners associated with Customer Number 22909

**Domestic Priority data as claimed by applicant**

This application is a CON of 12/032,995 02/18/2008
which is a DIV of 10/791,289 03/03/2004 PAT 7,347,011

**Foreign Applications**

**If Required, Foreign Filing License Granted:** 09/17/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/879,517**

**Projected Publication Date:** 12/30/2010

**Non-Publication Request:** No

**Early Publication Request:** No



Petitioner adidas AG - Exhibit 1002 - Page 52 of 324
Skechers EX1013-p. 1410
Skechers v Nike

**Title**

ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

**Preliminary Class**

036

## PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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## Title 37, Code of Federal Regulations, 5.11 & 5.15

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Skechers EX1013-p. 1411
Skechers v Nike

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

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**NOT GRANTED**

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Skechers EX1013-p. 1412
Skechers v Nike

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 12879517 |
| Filing Date | 2010-09-10 |
| First Named Inventor | Bhupesh Dua |
| Art Unit | 3728 |
| Examiner Name | |
| Attorney Docket Number | 005127.01568 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 5345638 | A | 1994-09-13 | Nishida | |
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| | 7 | 4373361 | A | 1983-02-15 | Thorneburg | |
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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 9 | 4607439 | A | 1986-08-26 | Harada | |
| | 10 | 4785558 | A | 1988-11-22 | Shiomura | |
| | 11 | 4813158 | A | 1989-03-21 | Brown | |
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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

| | | | | | | |
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| | 20 | 6910288 | B2 | 2005-06-28 | Dua | |
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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 31 | 2047724 | | 1936-07-14 | Zuckerman | |
| | 32 | 5095720 | A | 1992-03-17 | Tibbals, Jr. | |
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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

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| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 20020078599 | A1 | 2002-06-27 | Delgorgue, et al. | |
| | 2 | 20030126762 | A1 | 2003-07-10 | Tseng | |
| | 3 | 20040118018 | A1 | 2004-06-24 | Dua | |

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|---|---|---|---|---|---|---|---|---|
| | 1 | 1067566 | CN | A | 1993-01-06 | Puma Ag | | ☒ |
| | 2 | 1411762 | CN | A | 2003-04-23 | Taiwan Paiho Limited | | ☒ |
| | 3 | 1429512 | CN | A | 2003-07-16 | Taiwan Paiho Limited | | ☒ |
| | 4 | 627878 | DE | | 1936-03-12 | Gunther GmbH | Machine Translation Only | ☒ |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 5 | 90/03744 | WO | | 1990-04-19 | RBFPT, Inc. | | ☐ |
| | 6 | 1437057 | EP | | 2004-07-14 | Mizuno Corp. | | ☐ |
| | 7 | 1539886 | GB | | 1979-02-07 | Ashworths Ltd. | | ☐ |

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| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | Office Action issued July 27, 2007 in corresponding Chinese Patent Application No.: 2005800066703, and English translation thereof. | ☒ |
| | 2 | Office Action issued February 15, 2008 in corresponding Chinese Patent Application No.: 2005800066703, and English translation thereof. | ☒ |
| | 3 | Office Action issued June 13, 2008 in corresponding Chinese Patent Application No.: 2005800066703, and English translation thereof. | ☒ |
| | 4 | Santoni S.p.A. publication: Knitting Wear, SM8 Top 1 (2 pages). | ☐ |
| | 5 | International Search Report and Written Opinion issued May 19, 2005 in related PCT Application No.: PCT/US2005/004776 | ☐ |
| | 6 | Pgae 1 of Lyden Letter of April 21, 2010 - Redacted. | ☐ |

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| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | | Date Considered | |

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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|---|---|---|
| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /Jeanne M. Tanner/ | Date (YYYY-MM-DD) | 2010-10-13 |
|---|---|---|---|
| Name/Print | Jeanne M. Tanner | Registration Number | 45156 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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|---|---|
| **EFS ID:** | 8610256 |
| **Application Number:** | 12879517 |
| **International Application Number:** | |
| **Confirmation Number:** | 7137 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22910 |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Filer Authorized By:** | Jeanne Marian Tanner |
| **Attorney Docket Number:** | 005127.01568 |
| **Receipt Date:** | 13-OCT-2010 |
| **Filing Date:** | 10-SEP-2010 |
| **Time Stamp:** | 11:29:34 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| Submitted with Payment | no |
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## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Foreign Reference | CN1067566A.pdf | 718260<br>5b17cb4abb4a2add9b88f936be43a74a109d6435 | no | 18 |

| **Warnings:** |
|---|
| **Information:** |

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|---|---|---|---|---|---|
| 2 | Foreign Reference | Translation_CN1067566A.pdf | 456512<br>afbdeec02a4f87ecaa4843c9420fb42d44c8b4fbb7 | no | 18 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Foreign Reference | CN1411762A.pdf | 331934<br>9bdb4c0d8bc904739e58d9f7f105f80b6ee40fbe | no | 10 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Foreign Reference | Translation_CN1411762A.pdf | 232101<br>bd2f77901fe1baba8492e18ce22d693281391159 | no | 10 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Foreign Reference | CN1429512A.pdf | 310468<br>807c62cd38bcc0a448005cdc491830a2aae12c87 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 6 | Foreign Reference | Translation_CN1429512A.pdf | 252665<br>8ea180ccf98d5cde8526cce8576238920be3f638 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 7 | Foreign Reference | DE627878.pdf | 312571<br>85f89cb1ef9be43cedea9330b72a8c337c0e1995 | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 8 | Foreign Reference | DE627878-Machine-Translation.pdf | 62153<br>ba5fac3555687524a5fa50f0f3bd697caf6e4bd9 | no | 3 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 9 | Foreign Reference | WO9003744.pdf | 20342766<br>e6ed5dbd78f4eed4ae43481c810e46f520a37c1f | no | 54 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 10 | Foreign Reference | EP1437057.pdf | 14748885<br>60710f7f74011e4295a6236fa14862af61de3c5b | no | 14 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |

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|---|---|---|---|---|---|
| 11 | Foreign Reference | GB1539886.pdf | 3390667<br>a6cb0eb4549b3b3b3502ba252cd39e7d4b5e8288 | no | 6 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 12 | NPL Documents | OA1_CN20058000066703.pdf | 4621750<br>d91b0586f72a117c479df17ad2c39454ae122e2f | no | 33 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 13 | NPL Documents | OA2_CN20058000066703.pdf | 429153<br>315dccd6f4cecbcc4ee3abe7e538c2b385326869 | no | 7 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 14 | NPL Documents | OA3_CN20058000066703.pdf | 2105851<br>d962afbfb3b5938cb897920c2a573c04a6d9c7e5 | no | 29 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 15 | NPL Documents | Santoni-Knitting-Wear.pdf | 129809<br>0527c4a7c9feead4d370509ec0052846254718cf | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 16 | NPL Documents | ISR_PCt-US2005-004776.pdf | 306859<br>ab01a7d4c820f5f6b4426bae547afeb9dc2448d9 | no | 7 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 17 | NPL Documents | Lyden-Redacted.pdf | 49709<br>57c1813b5718d8cf392ab7804a5ac2a348d5631e | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 18 | Information Disclosure Statement (IDS) Filed (SB/08) | 005127-01568_IDS.pdf | 531538<br>7cf69900b820f6de3f5d04ca7e3cd2a38603fbad | no | 9 |
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**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

[19]中华人民共和国专利局

[11]公开号 CN 1067566A

# [12]发明专利申请公开说明书

[21] 申请号 92104757.6

[51] Int.Cl[5]
A43B 10/00

[43] 公开日 1993年1月6日

[22]申请日 92.6.17

[30]优先权

[32]91.6.17 [33]DE [31]P4119911.1

[71]申请人 普玛股份有限公司

地址 联邦德国黑措根奥拉赫

[72]发明人 西田士

[74]专利代理机构 中国国际贸易促进委员会专利代理部

代理人 蔡民军

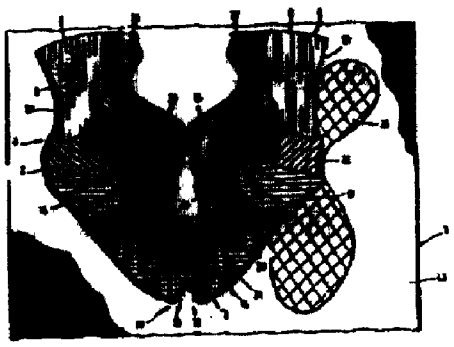
A43B 23/02 A43B 9/00
A43B 1/04 A43D 8/26
A43D 8/16

说明书页数: 9 附图页数: 4

[54]发明名称 由织物面料制造鞋成型部分的方法及所制造的鞋成型部分

[57]摘要

通过从一幅面料上按一展开面的形状将鞋帮切出的鞋帮制造方法，鞋帮的形状通过将展开的材料部分连接形成接缝而成。在加工面料(1)时，展开面(2)通过不同的加工措施，如采用不同的制造方式，不同的线材料，颜色，材料厚度，用一种或多种材料等等，同面料(1)的制备同时进行加工，进而把面料切成鞋帮展开面并加工成鞋帮，从而省时和经济地加工出鞋帮来。



<3>



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# 权　利　要　求　书

1. 采用带有许多按鞋帮展开面形状的图样的织物面料来制造鞋成形部分的方法，将这些展开面从织物面料切出并将鞋帮部分缝合在一起成为一上面部分，以及相配的鞋底部分设在配置的展开面的不经切开的外缘的边缘区域，其特征在于该方法还具有下列步骤：

——在加工织物面料(1)时，通过在织物面料(1)上的印花过程及/或通过在面料内的纺织加工过程，其上图样或部分图样不仅是按照鞋帮（3）的展开面(2)的形状，而且还按照鞋底部分(29)的形状；

——每一鞋帮（3）的展开面（2）直接配置一鞋底部分(29)并且将鞋底部分(29)装在鞋帮(3)展开面(2)的正确位置处；

——在加工织物面料（1）时展开面（2）或设置展开面(2)所在的区域，按另外的编织方式及/或编结方式来加工作为鞋底部分(29)或设置这些同图样所在的区域；

——在鞋承载时具有不同的负载展开面(2)及/或鞋底部分(29)的区域，按与负载相适应的编织方式及/或编织方式来制造；

——互相配置的展开面(2)及鞋底部分(29)在从织物面料(1)



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处切出时并不完全相互分开，而是通过相应的织物切段来保持互相连接的；

——带有鞋底部分(29)的展开面(2)分开的各单元首先将展开面(2)在设定的接缝位置连接成一鞋帮(3)并且最后将鞋底部分(29)缝合或钉合到相应的展开面(2)的自由外缘处。

2. 按权利要求 1 的方法，其特征在于，展开面(2)及/或鞋底部分 (29 )在鞋帮(3)或鞋底部分(29)的高负荷区域，在从织物面料(1)切出之前或以后要设置加强结构。

3. 按权利要求 1 或 2 的方法，其特征在于，在鞋帮(3)的展开面(2)的外轮廓(30、31)附有一个在以后构成的鞋底全长上延伸的单独部分，其形状各为一鞋底部分切段 (29. 1，29. 2)，其外轮廓(29. 3，29. 54)可连接成一纵向接缝以形成鞋底部分(29)。

4. 按照权利要求 1 或 2 的方法，其特征在于，在鞋帮(3)的展开面(2)的外轮廓(30 或 31)处加工出一前脚鞋底部分切段(29. 5)及在另外的外轮廓(31 或 30)处加工出一后跟一鞋底部分切段(29. 6)，它们对着鞋帮(3)中间的外轮廓(29. 7 或 29. 8)可以通过一横的，斜的，S 形的或相似的延伸的接缝来互相连接，并且由此形成鞋底部分(29)。

5. 按照权利要求 1 至 4 任一项所述的方法，其特征在于，在展开面(2)及鞋底部分(29)切出以前或以后，至少在展开面(2)处加工或设置一刺绣物。



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6. 按照权利要求 5 的方法，其特征在于，刺绣物至少部分地加工为带孔的刺绣。

7. 按照权利要求 1 至 6 任一项所述的方法，其特征在于，在鞋帮(3)加工以后，设置一内鞋底或中间鞋底。

8. 按照权利要求 1 至 7 任一项所述的方法，其特征在于，在展开面(2)及鞋底部分(29)切出以前或以后，在展开面(2)处设置一鞋舌(32)，它是经特别的缝合及/或粘合及/或钉合的。

9. 按照权利要求 8 的方法，其特征在于，在编织面料(1)上鞋舌(40)是采用不同的图样，不同的纺织方式，颜色，印花及其它类似的方法来制造的。

10. 按照权利要求 9 的方法，其特征在于，鞋舌(40)是在同一面料 (1 )内制造的，即如同展开面(2)连同鞋底部分(29 )或鞋底切段 (29. 1,29. 2;29. 5,29. 6)一样。

11. 按照权利要求 10 的方法，其特征在于，鞋舌(40)至少部分地设置在空余面积(41)内，该空余面积是在以后可形成脚跟部分的展开切段(42,43)之间。

12. 按照权利要求 1 至 11 任一项所述的方法，其特征在于，制造过程中不是为展开面(2)或不是为包括鞋舌(40)在内的展开面(2)制备的面料(1)的面积区域(1. 1)具有较一般的质量及/或密度及/或重量较轻。

13. 按照权利要求 1 至 12 所述的方法制造的鞋成形部分，其



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特征在于，每个展开面(2)看来至少具有5种不同加工方式的图样。

14. 按权利要求13的鞋成形部分，其特征在于，每一鞋舌(40)至少具有两种不同加工方式的图样。

15. 按权利要求13或14的鞋成形部分，其特征在于，鞋底部分（29）或鞋底部分切段(29.1，29.2；29.5，29.6)采用良好的湿性材料特别是用棉质的纺织物构成。

16. 按照权利要求15的鞋成形部分，其特征在于，吸湿性良好的材料至少占总材料的25%。



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# 说　　明　　书

## 由织物面料制造鞋成形部分的方法及所制造的鞋成形部分

本发明与由一幅织物面料制造鞋成形部分的方法有关。这种方法是采用带有许多按鞋帮展开面形状的图样的织物面料来制造鞋成形部分，将这些展开面从织物面料切出并将鞋帮缝合在一起成为一上面部分，以及将所配的鞋底部分设在展开面的不经切开的外缘的边缘区域。本发明还涉及按上述方法所制造的鞋成形部分。

上述的方法是由 *DE—PS627876* 得知的。这里一幅面料是这样制造的，它看起来是连续的不同织物的三种横条，在这些横条上印上一鞋帮的 *U* 形展开面形状的图样。横条是这样制造的，即总是第一种用于后跟贴皮，第二种是用于鞋面和侧面部分，第三种是用于前脚尖贴皮的。因此，第二种横条加工成弹性的和多层的，而其它两种横条按非弹性的和耐用的型式加工。也可以编入加强线和作为后跟的横条可以加工为空心的织物，在该空心织物中可以推放入一后跟贴皮。*U* 形部分从织物切出，在开口的 *U* 形边，它形成后跟贴皮，将之缝合然后按未加详细描述的方法装上鞋底。



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本发明的目的在于，对前面已知的方法作进一步改进，鞋帮同所配的鞋底部分可以是多种组成形式，可以连同条形的标志，装饰物等等一起加工，以便使这种鞋帮的加工仍是经济的和价格适宜的。

为此本发明采用带有许多鞋帮展开面形状的图样的织物面料来制造鞋成形部分的方法，将这些展开面从织物面料切出并将鞋帮部分缝合在一起成为一上面部分，以及相配的鞋底部分设在配置的展开面不经切开的外缘的边缘区域，在加工织物面料时，通过在织物面料上的印花过程或通过在面料内的纺织加工过程，不仅图样或部分图样是按照鞋帮的展开的形状而且还按照鞋底的形状；每一鞋帮的展开面直接配置一鞋底部分并且将鞋底部分装在鞋帮展开面的正确位置处；在加工织物面料时，展开面或设置展开面所在的区域，按另外的编织方式和/或编结方式来加工作为鞋底部分或设置这些图样所在的区域；在鞋承载时具有不同负载的展开面及/或鞋底部分的区域，按与负载相适应的编织方式及/或编结方式来加工；互相配置的展开面及鞋底部分在从织物面料处切出时并不完全分开，而是通过相应的织物切段来保持相互连接；带有鞋底部分的展开面分开的的各单元先将展开面在设定的接缝位置连接成一鞋帮，并且最后将鞋底部分缝合或钉合到相应的展开面的自由外缘处。

根据本发明的方法，仅是织物面料的那些部分要按要求的质量、厚度、多层性等等来加工，即要符合鞋帮或相配的鞋底部分的图样或图样的某一范围，而织物面料的其它范围相反地可以由简易的



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或便宜的质地构成，它们仅仅加工完以后同织物中图样或有这种图样的区域连在一起。因此，这样切出来的边脚料是一种简易的便宜的织物。与此相反在已知的带横条的编织物处，全部的边脚料例如是昂贵的中空的编织物、多层编织物等等。

根据本发明的方法的其它优点是，即单个图样或部分图样直接地在织物面料创造时能按要求的鞋码加工出来。由此，边脚料还可以进一步加以限制，因为单个图样或部分图样按设定的尺寸可以直接地互相连接。单个的图样或部分的图样对应于以后的负载或要求的型式可以配置为软的、刚性的、弹性的、不同颜色的等等。仅需要补充安装上内部和/或外部的加强元件，例如内和/或外的前脚尖贴皮，后跟贴皮等等。

当采用程序控制的面料加工设备时，可以按照所建立的程序，根据以后鞋码的展开面的尺寸，对单个区域或外形的编织型式或编结型式，以及对线或纤维的类型及/或前颜色进行几乎是任意的选择。因此仅仅是少数的单个部分分开进行加工，然后安装到鞋帮上。

本发明的其它优越性的细节在以下的权利要求中给出并凭借着下列附图对实例加以详细的说明，在图中：

图 1 为一段面料的俯视图，该面料具有在面料制造时所加工的用于一鞋帮的展开面。

图 2 表示面料的切取的部分，该面料带有用于不同鞋帮的多个展开面。



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图 3 为鞋的侧视图，带有按图 1 及图 2 所示的面料展开面的所构成的上面部分或鞋帮部分。

图 4 表示带有展开面的面料切取部分，在展开面的两侧面配置有鞋底部分切段以及一鞋舌。

图 5 表示一展开的面料切取部分，在展开面的一侧是一前脚鞋底部分的分段和在另一侧为后脚或后跟部分鞋底部分的分段。

图 1 及图 2 中用 1 标注面料，面料的制造是通过在纺织时惯用的方法，例如通过编织及/或编结及/或刺绣生产单独的或大量的用于鞋帮的展开面 2，如图 3 示例中所表示的鞋帮的侧面。

面料基底 4 可以是一惯用的例如用经线和纬线构成的编织物或针织物。展开面 2 按不同的各单个部分或区域分开，这些单独部分或区域互相通过不同的材料制造方式及/或通过不同的纤维或线，例如由毛线，由带金属线的毛线，由丝，由带金属线的丝或由带人造纤维或类似物的棉及/或纤维或不同颜色的线，包括那些金属或通过不同的印色及或通过不同的加工出的纤维绳或纤维绳的组合，如绞转，平行的加工等等来互相衬托起来。

鞋帮 3 的各单个部分或区域可以是这样的区域，在其上面还有一镶边，例如具有一耐磨损的部分。例如范围 5 及 6 的设定是为了用于获得一内或外的后跟贴皮 9(图 3)。展开面 2 由面料 1 切出后将边缘 7 和 8 缝合，这样便形成后跟线缝。最后由相接的区域 5 及 6 而获得如图 3 所示的后跟贴皮 9，例如可采用粘上及/或缝上的方法。



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相应地在鞋尖 10 处，外形是按边缘 11 及 12 的缝合而成，这样在鞋尖处形成一接缝。为了减少磨损，可以在前面区域，靠近脚趾区域 14 的前边缘 13 处装上在图 3 中所示的脚趾贴皮 15，它是特地粘贴上及/或缝上的。

因为通常脚趾区域 14 是相当柔软或具有弹性和必要时还应制造或可透气的，根据发明，在脚趾区域 14 的面料相应地通过编织型式、编结型式及/或通过对使用材料适当的选择，例如用丝线或人造材料来制造。这种制造的方式能附带产生这样的结果，即脚趾区域 14 具有良好的透气性。

例如这些可以通过网格型编织物或网格型针织结构来达到。

用位置 16 及 17 标明的区域表示用作标记的单独部分，如在本行业里有名的“*Formstrip*”是本申请人的标记。

在图 3 中示出，从脚背范围 18 至脚跟范围 19 间，延伸的区域 20，21 及 22 不仅要设计为拉伸带子的形状并且要制造成特别具有抗拉力。为了获得要求的效果，该鞋帮区域可以在面料 1 制造时通过适当的措施特地来完成。例如可以在此处选用特别抗拉力的纤维或线。必要时所述的材料可以是双层或多层的，或特别厚的编织，或是编结的或是附加刺绣的。

特别是当（例如如图 3 中）没有设置附加的安鞋带的檐形状的镶边时，鞋带范围 23 及 24 可以按形状稳定性的要求来进行加工。

最后在图 1 及图 2 所示的实例中，面料 1 上的展开面 2 的 26 及



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27 区域按与其它区域不同的外形、颜色和加工形式进行加工，成形以后，在所描述的后跟接缝处装上一图 3 所描述的后跟贴皮 28。

显然，在面料 1 上可以加工出不同外形及/或不同花样以及不同尺寸的任意数量的展开面 2。为此，首先适于采用的是程序控制的，特别是计算机控制的加工设备，这样加工方式，颜色，花样、尺寸等等可能任意进行变化。

按照本发明的一个具有优越性的进一步构成，在鞋帮了的展开面 2 上还可以有一起制造的按内鞋底形状的单独部分 29。在切出后此单独部分 29 与展开面 2 连在一起，及在由展开面 2 所构成的鞋帮的成形及固定之时或以后，单独部分 29 折叠到鞋底平面并到鞋帮 3 的下边缘区域，在展开面 2 处由外轮廓 30 及 31 确定，可按已知的方法，例如通过粘贴、缝合、钉缝等等方法进行固定。

在制造面料 1 时或在面料制造之后及必要时在展开面 2 切出之后，在展开面 2 适当的或优选的位置设有刺绣物，例如带孔的刺绣物、工厂的标志或其它的符号或标志。

最后还可以在展开面切出之前或以后在前脚范围装一鞋舌 32（图 3）。在鞋帮 2 加工以后，必要时附带地装上或形成一内鞋底及/或一中间鞋底。

加工的鞋帮 3 紧接着送到粘结模具，注射模具或注塑模具，通过已知的措施，在这些模型中形成如图 3 所示的中间鞋底 33 及鞋跟底 34。



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迄今所描述的本发明的方法的优越性尤其在于，即采用已开发的纺织机，可以在一次操作程序中，在面料中置入特别是可以织入多至 7 种不同的纺织纤维或线以及同样多的颜色。正如已提到过的，通过计算机控制的程序（以有关的基本图样为出发点）可以加工制造出任意的尺寸和不同的鞋帮型式。由面料加工得出的鞋帮具有很轻的重量，例如鞋码 8 的鞋帮重量在 70 克至 80 克之间。与过去所知的方法比较，这种鞋帮部分的制造费用是非常低的。

在图 1 及图 2 中位置号 1.1 表示不经加工的平面区域，它位于用于鞋帮 3 或鞋舌 40 的展开面 2 之外。

按照本发明进一步有利的结构，鞋底部分 29 可以进一步地予以改进。在图 1 及图 2 中以单独部分表示的鞋底 29 经纵向的，横向的或斜向分开，这样鞋底可由两部分或多部分构成，这时展开面 2 的每个外轮廓 30、31 处至少各设置有一鞋底切段。

按图 4 的实例在外轮廓 31 处是一在以后所成的鞋底的全长上延伸的鞋底切段 29.1，约为鞋底 29 的一半，在外轮廓 30 处设有构成鞋底 29 的其余部分的鞋底切段 29.2。鞋底 29.1 及 29.2 二者相互补充成为完整的鞋底部分 29。同时其外轮廓 29.3 及 29.4 优先采用一纵向接缝来互相连接，例如通过缝合及/或粘合及/或热压合等等。

在图 5 的实例中，在鞋帮 3 的展开面 2 的外轮廓 31 处设置一前脚鞋底切段 29.5 及在外轮廓 30 处设置一后跟鞋底切段 29.6。对着鞋帮 3 的中间的外轮廓 29.7 及 29.8 在以后相互连接然后整个鞋



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底 29。这时相应的外轮廓 29.7 及 29.8 形成的接缝为横的，斜的或斜和略为 S 形等等的延伸。最佳选择的接缝路线是，不会或在任何情况下不会对脚底产生不舒适的压力。

按图 4 的实例还设置一鞋舌 40，它是在面料 1 的加工步骤中，采用不同的编织结构及/或编织图样及/或刺绣或采用一种或多种印花等而成。在面料 1 上可以相应某种鞋型及/或某种鞋码，无论在形状、尺寸、一种颜色或多种颜色、图样等等方面加工不同的鞋舌 40。最好展开面 2 总是与所配的鞋舌 40 一起在同一面料 1 上加工出来。

面料 1 的最佳面积利用是将鞋舌 40 置于两个展开段 42 与 43 之间的空余面积处。展开段 42 与 43 在以后形成鞋的后面部分，即后跟部分。

最好是每一展开面 2 至少有 5 种(最佳选择是多于 10 种)及鞋舌 40 最少有 2 种(最好至少为三种)是相互不同加工的即外貌不同的图样。

本发明结构的进一步优点是面料 1 按下列方式制造的，即没有设置展开面 2 或鞋舌 40 的面积区域 1.1 由尽可能简易的和价格便宜的、轻的材质组成。例如面积区域 1.1 可以按网纱的方式或采用少的至非常少的经线及/或纬线及/或例如采用细线等来制造。这样便保证鞋的成形部分，如鞋的上面部分即鞋帮部分连同鞋底和/或鞋舌可获得特别经济的加工。

最好是在展开面 2，鞋底部分 29，特别是鞋底部分切段 29.1 及



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29.2 或 29.5 及 29.6 的区域采用的材料的纺织部分具有吸湿性。因此最好采用棉质的。吸水性材料成分至少约占总材料的 25%。根据使用情况可高达 100%。

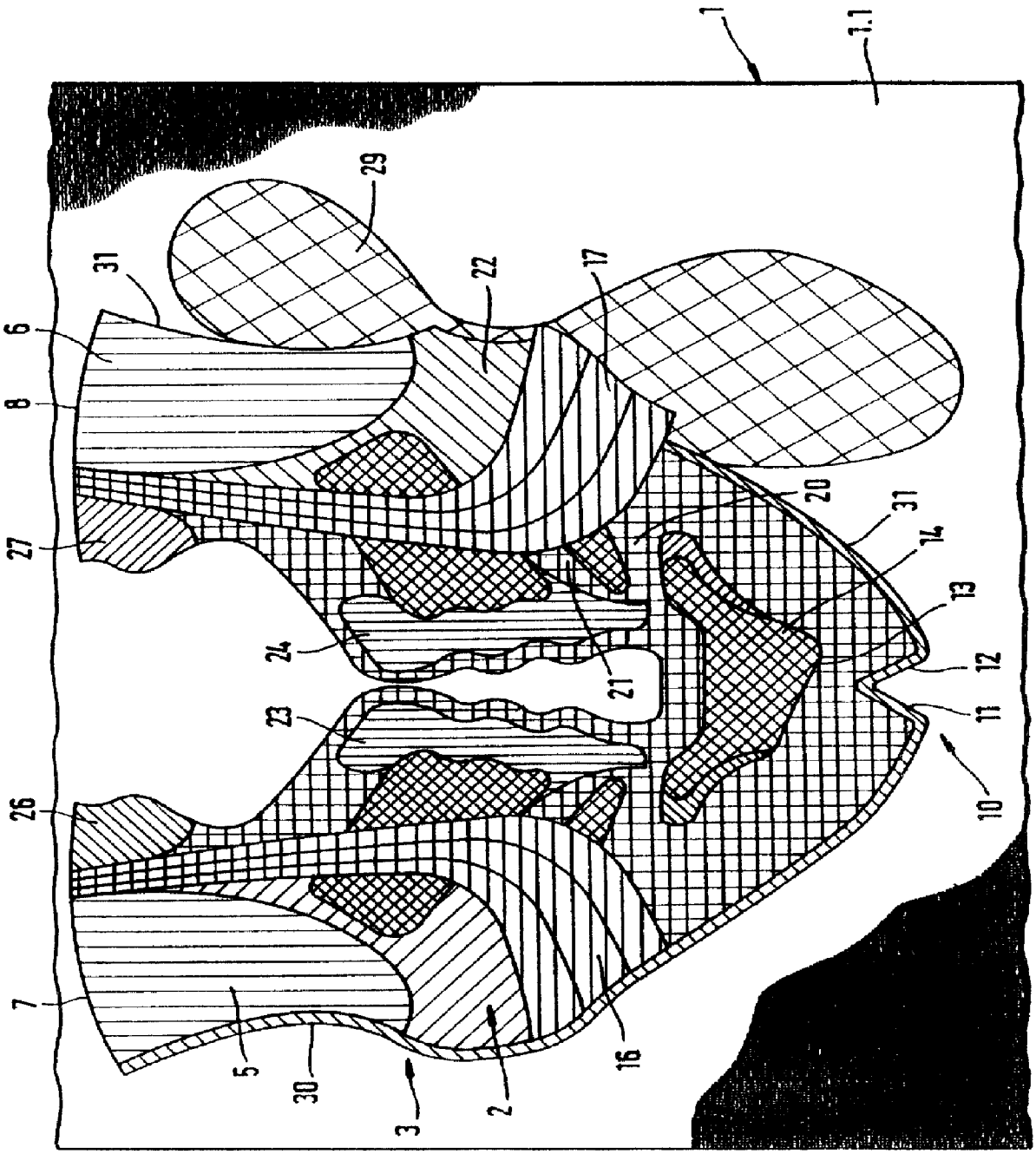
如已经说明的，所需的面料可以由程序控制的面料加工设备制造，其程序经过相应的基本调整以后，几乎可以任意地适应于各个鞋帮展开面的尺寸或各个区段或轮廓的编织或编结的型式的改变，以及线或纤维类型方面的改变和/或颜色方面的变化。



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# 说　明　书　附　图

图1






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图2

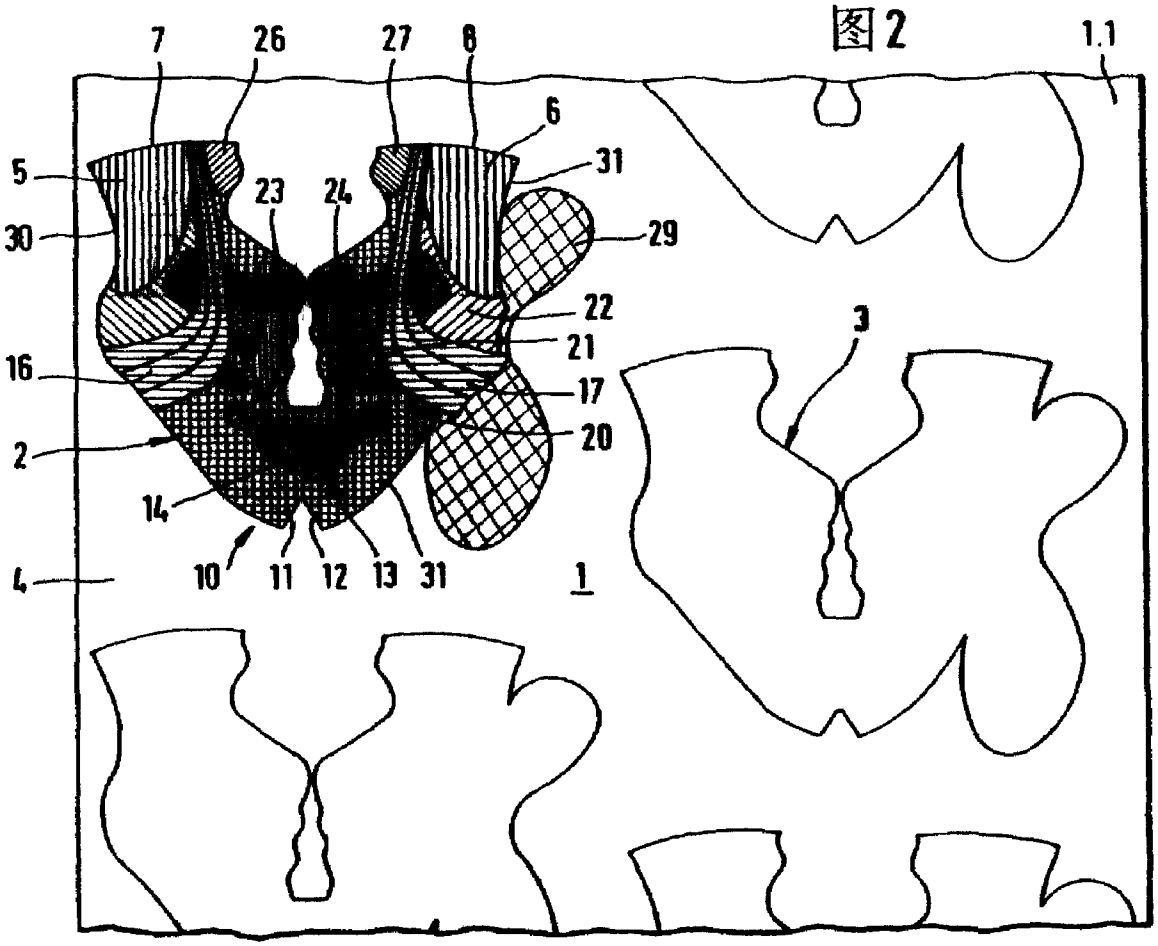
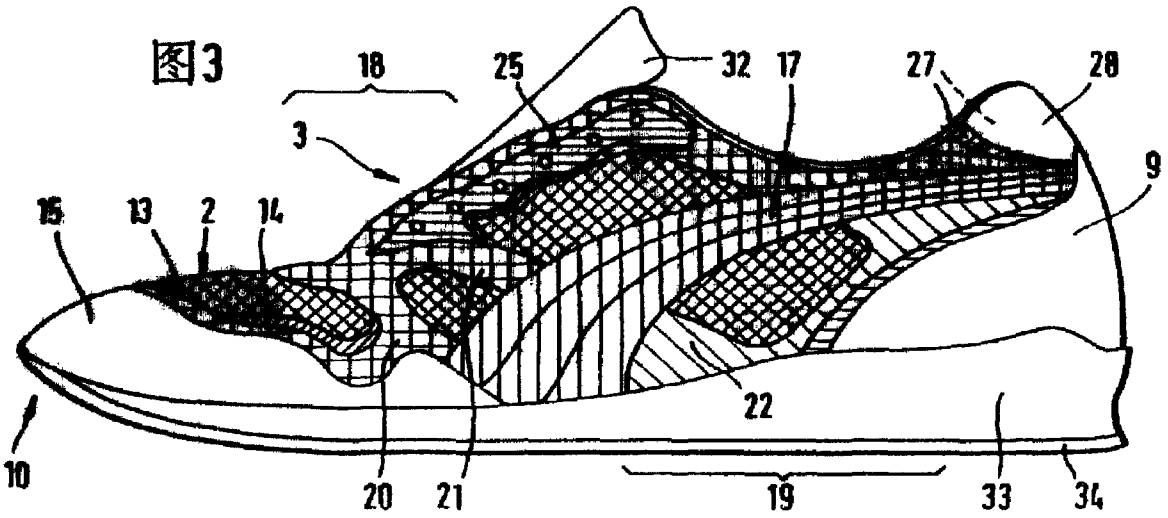



图3






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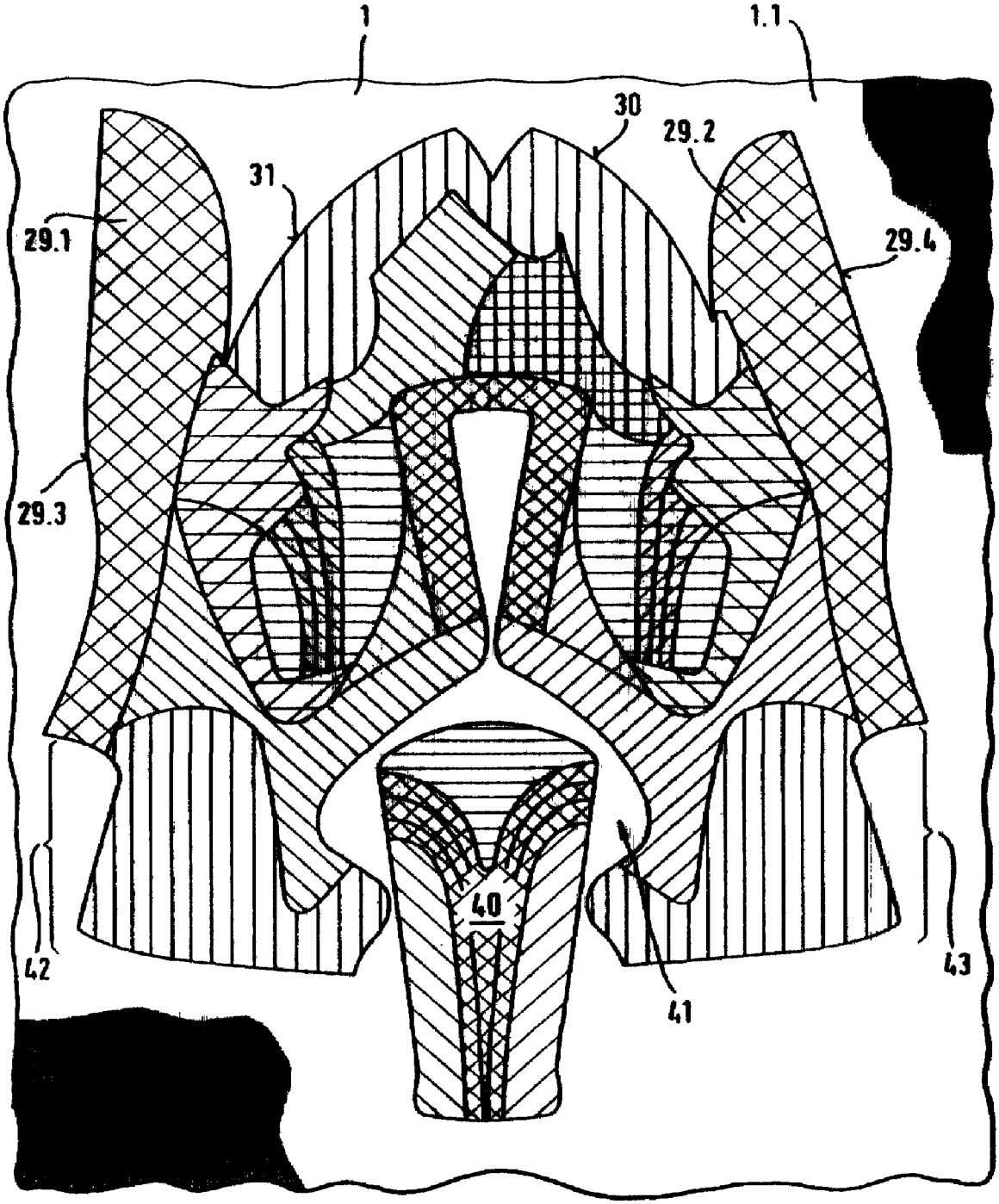



图4



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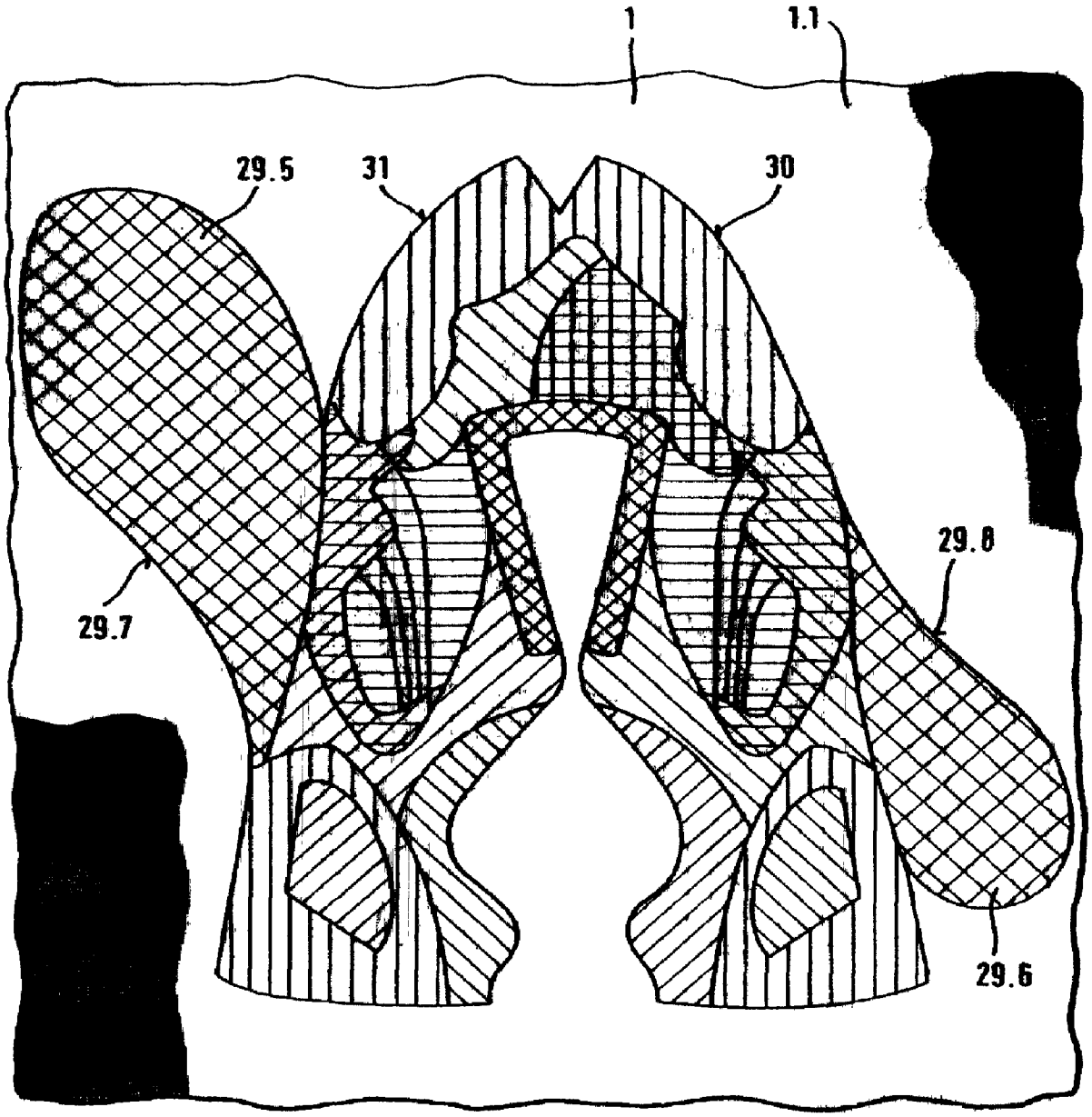



图5



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A43D 8/16

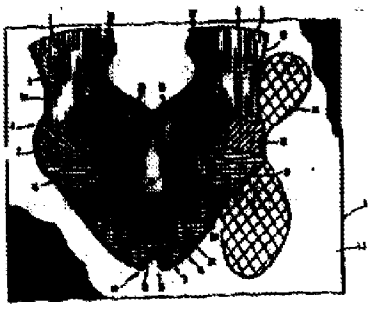
Number of pages of Specification: 9
Number of pages of Drawings: 4

[54] Title of Invention

A Method for Making Shoe Forming Part with Fabric and the Shoe Forming Part Such Made

[57] Abstract

A method for making an upper by cutting out the upper from a breadth of fabric according to the shape of an unfolded surface, wherein the shape of the upper is made by joining the unfolded material part to form a seam. When processing a piece of fabric (1), different processing measures are taken for processing the unfolded surface (2) at the same time when the fabric (1) is prepared, such as different making methods, different thread materials, colors and thicknesses, use of one or multiple materials, and so on, and furthermore, the fabric is cut into an extended upper surface and processed into an upper so that the upper is made economically with less time.



(BJ) No. 1456

## Claims

1. A method for making the shoe forming part from fabric with a plurality of patterns in the shape of an unfolded surface of an upper, wherein the unfolded surface is cut out from the fabric and sewed with the upper to form an upper part, and the matching sole part is set in the edge zone of the uncut outer edge of the configured unfolded surface, characterized in that the method comprises the following procedures:

-- When processing the fabric (1), by means of the printing process on the fabric and/or textile processing process inside the fabric, the patterns or partial patterns on it not only follow the shape of the unfolded surface (2) of the upper (3), but also follows the shape of the sole part (29);

-- The unfolded surface (2) of each the upper (3) is directly configured with a sole part (29), and the sole part (29) is mounted on the correct position of the unfolded surface (2) of the upper (3);

-- When processing the fabric (1), the unfolded surface (2) or the area where the unfolded surface (2) is located is processed to serve as the sole part (29) or the area for setting these patterns according to other weaving mode and/or knitting mode;

--The area of the unfolded surface (2) and/or the sole part (29) with different loads when the shoe is loaded is made in weaving and/or knitting mode matching the loads;

-- Mutually configured unfolded surface (2) and the sole part (29) are not completely separated from each other when being cut out from the fabric (1), and instead they maintain mutual connection through related fabric sectioning;



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-- Those separated units of the unfolded surface (2) with the sole part (29) first join the unfolded surface (2) into an upper (3) at a set seam position, and finally sew or nail the sole part (29) to the corresponding free outer edge of the unfolded surface (2).

2. The method according to Claim 1, characterized in that the unfolded surface (2) and /or the sole part (29) are located in the high load area of the upper (3) or the sole part (29), and should be configured with a reinforced structure before or after being cut out from the fabric (1).

3. The method according to Claim 1 or 2, characterized in that the outer contour (30, 31) of the unfolded surface (2) of the upper (3) is attached with an independent part which will extend over the full length of the sole to be formed later, its shape of partial section of a sole respectively (29.1, 29.2), its outer contour (29.3, 29.[*sic*:4]) can be joined into a longitudinal seam to form the sole part (29).

4. The method according to Claim 1 or 2, characterized in that a forefoot sole part section (29.5) is processed from the outer contour (30 or 31) of the unfolded surface (2) of the upper (3) and a heel sole part section (29.6) is processed from another outer contour (31 or 30), they face the outer contour (29.7 or 29.8) in the middle of the upper (3) and can be mutually joined through a transverse, slanted, S-shaped or similar extended seam, thus to form the sole part (29).

5. The method according to any one of Claims 1 through 4, characterized in that at least one embroidery is processed or set on the unfolded surface (2) before or after cutting of the sole part (29) of the unfolded surface (2).



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6. The method according to Claim 5, characterized in that the embroidery is at least partially processed as an eyelet embroidery.

7. The method according to any one of Claims 1 through 6, characterized in that an inner sole or insole is configured after processing of the upper (3).

8. The method according to any one of Claims 1 through 7, characterized in that a shoe tongue (32) is set on the unfolded surface (2) before or after cutting of the sole part (29) of the unfolded surface (2), which undergoes special sewing and/or bonding and /or nailing.

9. The method according to Claim 8, characterized in that the tongue (40) on the fabric (1) is made with different patterns, textile modes, colors and printings as well as other similar methods.

10. The method according to Claim 9, characterized in that the tongue (40) is made with the same fabric (1), that is, same as the making of the unfolded surface (2) and the sole part (29) or the sole sections (29.1, 29.2; 29.5, 29.6).

11. The method according to Claim 10, characterized in that the tongue (40) is at least partially configured in a free area (41) which is located between extended sections (42, 43) for forming the heel part.

12. The method according to any one of Claims 1 through 11, characterized in that the area (1.1) of the fabric (1) which is not prepared for the unfolded surface (2) or the unfolded surface (2) including the tongue (40) during making has a common quality and/or density and/or a light weight.



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13. The shoe forming part made with the method according to Claims 1 through 12, characterized in that each unfolded surface (2) looks having patterns resulting from at least five different processing modes.

14. The shoe forming part according to Claim 13, characterized in that each tongue (40) has patterns resulting from at least two different processing modes.

15. The shoe forming part according to Claim 13 or 14, characterized in that the sole part (29) or the sole part sections (29.1, 29.2; 29.5, 29.6) is composed of perfect hygroscopic material, particularly cotton textiles.

16. The shoe forming part according to Claim 15, characterized in that, the hygroscopic material accounts for at least 25% of the total materials.



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**Specification**

# Method for Making Shoe Forming Part from Fabric and the Made Shoe Forming Part

The invention relates to a method for making a shoe forming part from a breadth of fabric. 1. The method involves making the shoe forming part from fabric with a plurality of patterns in the shape of an unfolded surface of an upper, wherein the unfolded surface is cut out from the fabric and sewed with the upper to form an upper part, and the sole part is set in the edge zone of the uncut outer edge of the configured unfolded surface. The invention also relates to the shoe forming part made according to the above-mentioned method.

The above-mentioned method is known from DE-PS627876. Here the breadth of fabric is made in this way: it looks like three kinds of continuous horizontal stripes of different fabrics, and the horizontal strips are printed with a pattern in the shape of a U-shaped unfolded surface of an upper. The horizontal stripes are made in this way, that is, the first kind is used for the heel cover, the second kind for the vamp and side part, and the third kind for the forefoot cover. Therefore, the second kind of horizontal stripes should be processed into elastic and multi-layered stripes, and other two kinds of horizontal stripes should be processed into non-elastic and durable stripes. Reinforced threads can also be added, and horizontal stripes for use with heel can also be processed into a hollow fabric which can accommodate a heel cover. The U-shaped part can be cut out from the fabric, it forms a heel cover on the open U-shaped side, which is sewed and mounted on the sole of a shoe according to a method not detailed here.



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The purpose of the invention is to further improve the known prior methods. A plurality of forms can be taken for combination of uppers and the related sole part, and can be processed together with stripe logos and decorations, so as to make the upper processing to be economic and cost-effective.

Therefore, the invention uses the method for making the shoe forming part from fabric with a plurality of patterns in the shape of an unfolded surface of an upper, wherein the unfolded surface is cut out from the fabric and sewed with the upper to form an upper part, and the sole part is set in the edge zone of the uncut outer edge of the configured unfolded surface. When processing the fabric, by means of the printing process on the fabric and/or textile processing process inside the fabric, patterns or partial patterns not only follow the extended shape of the upper, but also follow the shape of the sole. The unfolded surface of each the upper is directly configured with a sole part, and the sole part is mounted on the correct position of the unfolded surface of the upper. When processing the fabric, the unfolded surface or the area where the unfolded surface is located is processed to serve as the sole part or the area for setting these patterns according to other weaving mode and/or knitting mode. The area of the unfolded surface and/or the sole part with different loads when the shoe is loaded is made in weaving and/or knitting mode matching the loads. Mutually configured unfolded surface and the sole part are not completely separated from each other when being cut out from the fabric, and they maintain mutual connection through related fabric sectioning. Those separated units of the unfolded surface with the sole part first join the unfolded surface into an upper at a set seam position, and finally sew or nail the sole part to the corresponding free outer edge of the unfolded surface.

For the method according to the present invention, only those fabric parts need to be processed according to required quality, thickness and multi-layer, that is, to comply with patterns or a certain range of the patterns of the upper and the sole part, while other fabric parts can be composed simply or with cheap materials and are only joined to patterns or area with such



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a pattern of the fabric after being processed. Therefore, leftover materials cut in this way are a simple and cheap kind of textiles. To the contrary, all leftover materials on known fabric with horizontal stripes are expensive hollow fabrics, multi-layered fabrics, and so on.

Another advantage of the method according to the present invention is that a single pattern or partial patterns can be processed directly from the fabric according to the required shoe size. Therefore, leftover materials can be further limited, since a single pattern or partial patterns can be mutually joined directly according to the preset size. According to future load or required model, the single pattern or partial patterns can be configured as soft, rigid and elastic ones or configured with different colors, and so on. Only supplemental mounting of internal and/or external reinforcing elements, such as internal and/or external forefoot cover, heel cover, and so on, is needed.

When a piece of program-controlled processing equipment is used, almost optional selection can be made for the weaving or knitting mode of half an area or shape and the type and/or color of threads and fibers according to the created program and the size of the unfolded surface of future shoe size. Therefore, only a few individual parts are processed separately and then mounted on the upper.

Details of other advantages of the invention will be given in the following claims and detailed description will be given for preferred embodiments with combination of drawings. As shown in the figures:

Figure 1 is a top view of a section of fabric which has an unfolded surface processed during fabric making for use with an upper.

Figure 2 shows a part cut from the fabric which has a plurality of unfolded surfaces for use with different uppers.



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Figure 3 is a side view of a shoe which has an upper part composed of unfolded surfaces of the fabric shown in Figures 1 and 2.

Figure 4 shows a part cut from the fabric with an unfolded surface on both sides of which a section of sole part and a tongue are configured.

Figure 5 shows a part cut from an extended piece of fabric. On one side of the unfolded surface is a section of the forefoot heel part, and on the other side is a section of the sole part of the rear foot or heel part.

Fabric is marked with "1" in Figures 1 and 2. The fabric is made with conventional weaving mode, for example, independent or a large quantity of unfolded surfaces (2) for use with uppers are generated through weaving and/or knitting and/or embroidering, such as the side of an upper shown in Figure 3.

Fabric base (4) can be a conventional braid or knitting such as one composed of warp and weft threads. The unfolded surface (2) is separated based on individual parts or areas which match mutually through different material manufacture and/or different fibers or threads, such as wools, wools with metal threads, silks, silks with metal threads, cotton with manmade fiber or similar materials and/or fibers or threads of different colors, including those metals or fiber ropes or combinations of fiber ropes with different printing colors or in different processing processes (such as twisted or parallel processing).

The individual parts or areas of the upper (3) can be such an area on which a lace is configured, for example, with a wearable part. For example, the setting of areas (5 and 6) is to get an internal or external heel cover (9) (Figure 3). After the unfolded surface (2) is cut out from the fabric (1), edges (7 and 8) are sewed to form a heel seam. Finally the heel cover (9) is gotten from the joined areas (5 and 6) shown in Figure 3, for example, the bonding and/or sewing can be used.



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Accordingly, at toe (10), the shape is formed by sewing edges (11 and 12) to form a seam at the toe. To reduce friction, a toe cover (15) as shown in Figure 3 can be added to the front edge (13) close to the toe area (14) in the front area, which is specially bonded and/or sewed.

Since normally the toe area (14) is quite soft or elastic and should be air permeable if necessary. According to the present invention, fabric for the toe area (14) is fabricated through weaving and knitting modes and/or through appropriate material selection, such as use of silk threads or manmade materials. Such a manufacture mode can bring about such a result, that is, perfect air permeability of the toe area (14).

For example, these purposes can be achieved by mesh braids or mesh knitting structure.

Areas marked with positions (16 and 17) are independent parts for logos, for example, the industry-famous "FormStrip" is a mark of the applicant.

As shown in Figure 3, from the instep area (18) to the heel area (19), extended areas (20, 21 and 22) not only should be designed as an elastic band shape, but also should be made with special stretching resistance. To achieve the required effect, the upper area can be completed specially by taking appropriate measures during the making of the fabric (1). For example, fibers or threads with a special stretching resistance can be used here. If necessary, the above-mentioned material can be double-layered or multi-layered material or a fabric with a special thickness or a weaved or embroidered fabric.

Particularly (as shown in Figure 3), when no additional lace of last shape for mounting shoelaces is configured, shoelace areas (23 and 24) can be processed according to the requirement for shape stability.

Finally, in the embodiment shown in Figures 1 and 2, areas (26 and 27) of said unfolded



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surface (2) of the fabric (1) are processed according to shapes, colors and processes different from other areas, and after forming, the heel seam is mounted with a heel cover (28) as shown in Figure 3.

Obviously, any quantity of unfolded surfaces (2) of different shapes and/or patterns and sizes can be made from the fabric (1). Therefore, first appropriate equipment is program-controlled equipment, particularly computer-controlled processing equipment, so that processing processes, colors, patterns and sizes can be changed at will.

A further advantageous composition according to the present invention, the unfolded surface (2) of the upper can be configured with an independent part (29) of sole shape processed together. After being cut out, the independent part (29) is joined to the unfolded surface (2), and during or after forming and fixation of the upper composed of the unfolded surface (2), the independent part (29) is folded to the sole plane and reaches the lower edge area of the upper (3), and is determined by contours (30 and 31) of the unfolded surface (2), which can be fixed according to know methods such as bonding, sewing and nailing.

During making the fabric (1) or after fabric making and if necessary, after cut-out of the unfolded surface (2), an embroidery such as an eyelet embroidery, factory's logo or other symbols or logos can be configured at an appropriate or preferred position of the unfolded surface (2).

Finally a tongue (32) (Figure 3) can be added to the forefoot area before or after cutting out of the unfolded surface. On the upper (2), after being processed, an internal sole and/or an insole can be added or formed when necessary.

The processed upper (3) is then sent to a bonding, injection or plastic injection mold to form the insole (33) and heel sole (34) shown in Figure 3 in such a mold by known measures.



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Up to date, the advantage of the method of the invention described here lies in that a developed textile machine can be used to particularly weave as much as seven kinds of textile fibers or threads and colors into fabric in one operating procedure. As mentioned earlier, a computer-controlled program (based on related basic patterns) can be used to process any sizes and different upper models. Uppers processed from fabric in this way features very light weight, for example, an upper of a shoe of size 8 only weights about 70 to 80 grams. Compared with known prior methods, the manufacture cost of such an upper part is very low.

Position number 1.1 in Figures 1 and 2 indicate unprocessed planar area which is located outside the unfolded surface (2) of the upper (3) or tongue (40).

According to further advantageous structure of the invention, the sole part (29) can be further improved. The sole (29) expressed with independent parts in Figures 1 and 2 are separated longitudinally, transversely or obliquely, so that the sole can comprise two or more parts, and thus at least a sole section is configured respectively on each contour (30, 31) of the unfolded surface (2).

According to the embodiment shown in Figure 4, On the outer contour (31) is a sole section (29.1) extended over the full length of the sole to be formed, about half of the sole (29), and on the outer contour (30) is configured with a sole section (29.2) comprising other part of the sole (29). The soles (29.1, 29.2) complement each other to form a complete sole part (29). In the meantime, its outer contours (29.3, 29.4) preferably use a longitudinal seam for mutual connection, such as by means of sewing and/or bonding and /or hot pressing.

In the embodiment shown in Figure 5, a forefoot sole section (29.5) is configured on the outer contour (31) of the unfolded surface (2) of the upper (3), and a heel sole section (29.6) is configured on the outer contour (30). The outer contours (29.7, 29.8) facing the middle of the



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upper (3) will be mutually joined to form a complete sole (29) later. In this case, the seam formed by related contours (29.7, 29.8) is a transverse, oblique, or slanted and a bit S-shaped extension. The preferred seam route is such that it will not apply any uncomfortable pressure to the sole in any cases.

According to the embodiment shown in Figure 4, a tongue (40) is also configured, which is made by use of different weaving structure and/or weaving pattern and/or embroidery or one or a plurality of printings during the processing procedure of the fabric (1). Different types of tongues (40) can be made from the fabric (1) according to related shoe models and/or sizes, based on a plurality of shapes, sizes, colors, and patterns. Preferably, the unfolded surface (2) is always processed from the same fabric (1) as the tongue (40).

The preferred area utilization of the fabric (1) is to place the tongue (40) in the free area between two extended sections (42, 43). The extended sections (42, 43) form the rear part of a shoe later, that is, the heel part.

Preferably, each unfolded surface (2) has at least five different patterns (i.e., with different appearances) processed differently (preferably, over 10 patterns), and the tongue (40) has at least two patterns (preferably at least three patterns).

A further advantage of the structure of the invention is that the fabric (1) is made in following method, that is, the area (1.1) without configuration of the unfolded surface (2) and tongue (40) is composed of material as simple, cheap and light as possible. For example, the area (1.1) can be made in gauze mode or by use of a little or very little warp and/or weft threads and/or hairlines, and so on. This will guarantee the forming part of a shoe can be processed economically, such as, the upper part, i.e., the sole part and sole and/or tongue.

Preferably, the textile part of the material used for the unfolded surface (2) and the sole part (29), particularly the sole part sections (29.1, 29.2) or the areas (29.5, 29.6) is hydroscopic. Therefore, it is much better to



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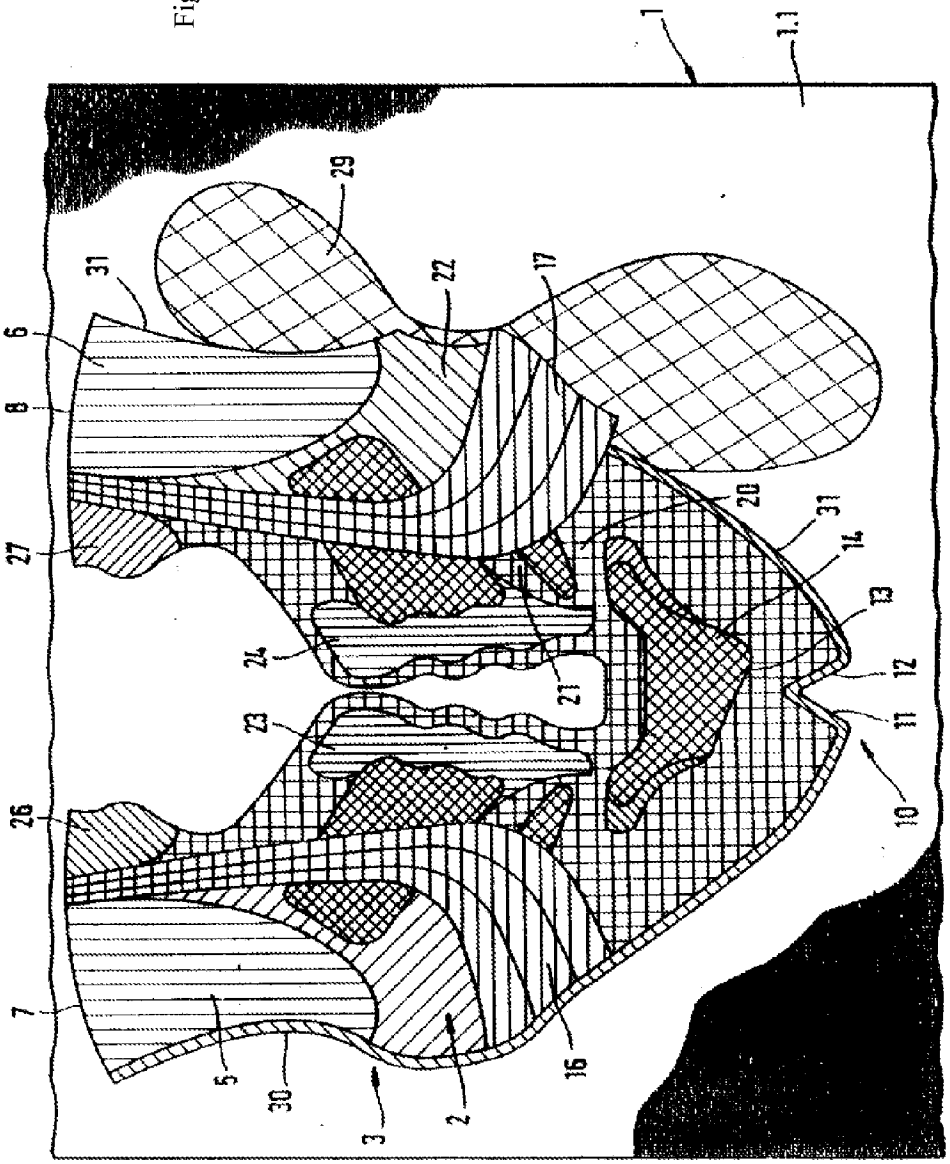
use cotton material. The composition of the hydroscopic material accounts for at least 25% of the total material used. And this proportion can be as high as 100% based on actual conditions.

As described earlier, the necessary fabric can be manufactured with a piece of program-controlled fabric processing equipment. After proper adjustment of its programs, the equipment can almost be applicable to any change of the size of the unfolded surface of each upper, weaving or knitting model of each section or contour, thread or fiber type and/or color.



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Figure 1






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Figure 2

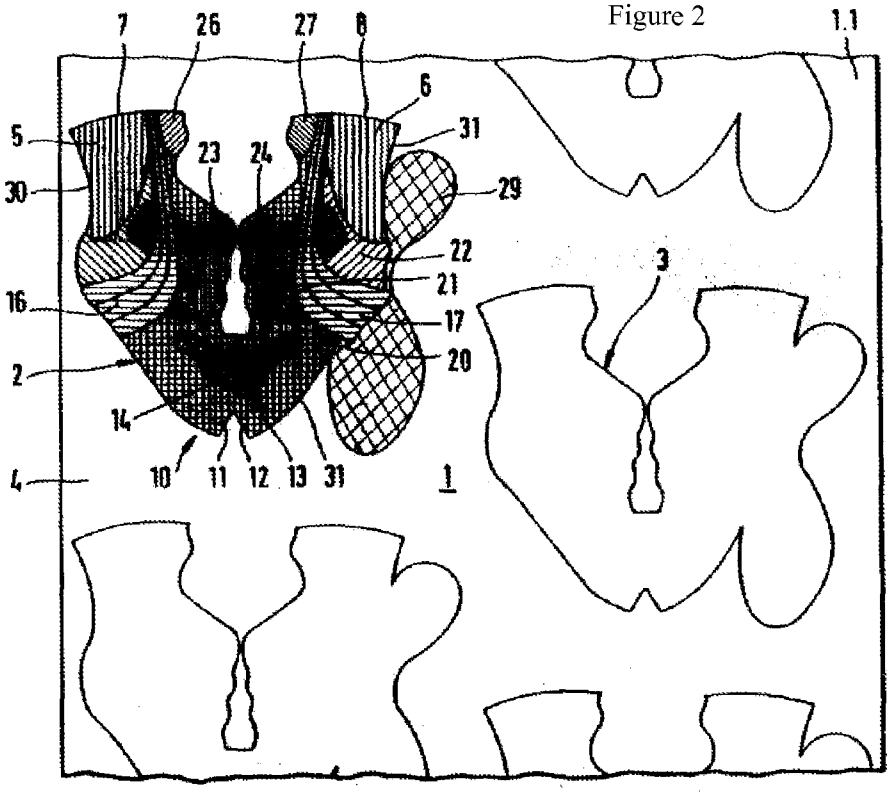
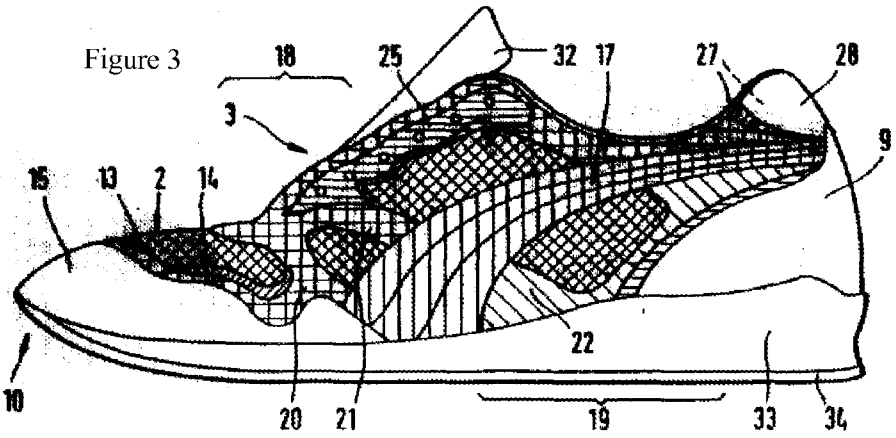



Figure 3






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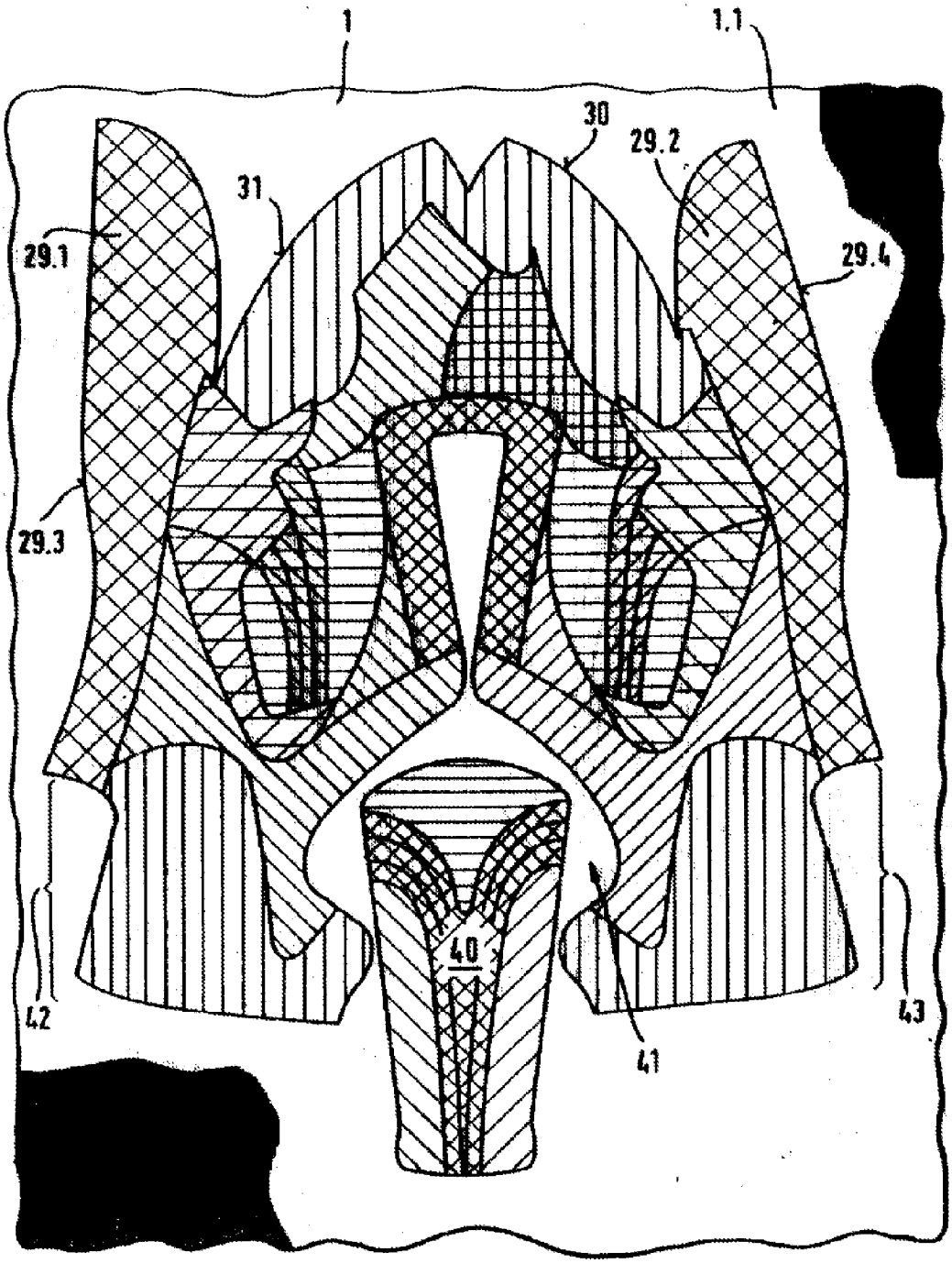



Figure 4



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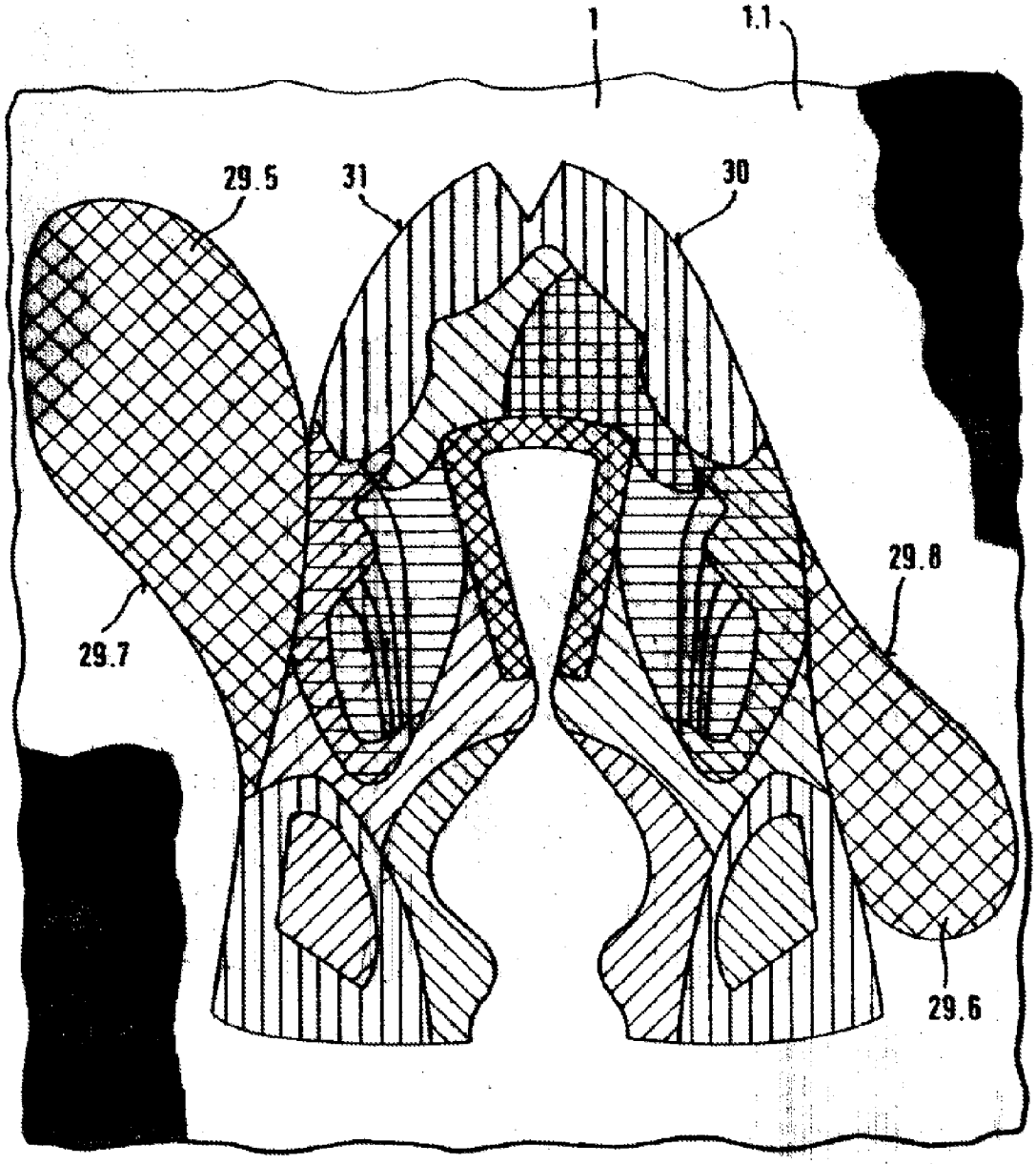



Figure 5



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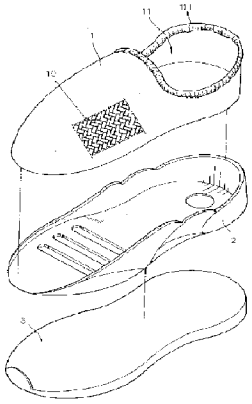
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权利要求书 1 页 说明书 3 页 附图 5 页

[54] 发明名称 鞋子

[57] 摘要

本发明一种鞋子。其主要是以多数股弹性编织带经连续交义编织，使其形成具有伸缩弹性的圆筒形编织鞋面基材，尔后于鞋面基材一侧的预设适当位置予以裁切有鞋口，并经适当的修裁塑型后，再与预先已成型的中底进行结合，以此而形成一舒适、透气性佳且耐用的鞋子产品。



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1、一种鞋子，其特征为：以多数股弹性编织带经连续交叉编织，使其形成具伸缩弹性的圆筒形编织鞋面基材，尔后于鞋面基材一侧的预设适当位置予以裁切有鞋口，并经过适当的修裁塑型后，再与预先已成型的中底进行结合，以此而形成一舒适、透气性佳且耐用的鞋子产品。

2、如权利要求 1 所述的鞋子，其特征在于：圆筒形编织鞋面基材采用30-60 度交叉编织法编织而成。

3、如权利要求 1 所述的鞋子，其特征在于：在鞋面基材的鞋口周缘车缝滚边条。

4、如权利要求 1 所述的鞋子，其特征在于：鞋面基材与中底采用粘胶贴合、线材车缝、或先粘胶贴合再予以线材车缝、或其他等效的方式结合。

5、一种鞋子的鞋面，其特征在于：其主要是以多数股弹性编织带经连续交叉编织，使其形成具伸缩弹性的圆筒形编织鞋面基材，尔后于鞋面基材一侧的预设适当位置予以裁切有鞋口，并经适当的修裁塑型后，以此而形成一具有舒适、透气性佳且耐用的鞋面。

6、如权利要求 5 所述的鞋子，其特征在于：圆筒形编织鞋面基材采用30-60 度交叉编织法编织而成。

7、如权利要求 5 所述的鞋子，其特征在于：在鞋面基材的鞋口周缘车缝滚边条。



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# 鞋子

## 技术领域

本发明属于一种鞋子的技术领域，尤其涉及一种形成具伸缩弹性的圆筒形编织鞋面的鞋子。

## 背景技术

习知传统的鞋子制程，尤指休闲、运动用的布面球鞋（如图 1、2 所示），主要具有一裁切呈预设大小的鞋面布 A，而鞋面布 A 于里层并以粘胶帖附一层内衬（里）A1，另在鞋面布 A 的周缘底部内折一道底缘 A2，再以底缘 A2 粘贴或车缝于一布底 B 上，而布底 B 的下层粘贴一中底 C，中底 C 并再与鞋布面 A 粘贴或车缝结合，该中底 C 的底部再由一大底 D 粘贴或射出结合，而此一结合制程由于步骤复杂、手序烦琐，且制作时需大量运用粘胶，不但浪费人工与制作成本外，同时较不符合环保。

如图 1 所示，再者，由于习知鞋子的鞋面布 A 先以直角交义编织呈一胚布 A0，再以胚布 A0 经冲裁而成鞋面布 A 的里层以粘胶贴附内衬（里）A1 层，而粘胶本身不具透气性，因此在穿着时其包覆性不良且透气性极差，除了造成闷热不适外，也容易孳生微菌而致使恶臭或香港脚（脚气）。

由于习知鞋子的鞋面布 A 是以底部所投设的底缘 A2 粘贴或车缝于布底 B 上，再与中底 C 实施粘贴或车缝结合，而此一结合结构因存在单点受力的问题，所以极容易因剧烈跑跳使鞋面布 A 与布底 B 间产生爆裂而损坏。

经由上述的说明可知，传统鞋子不论是构成或制作方法，由于设计未臻完善，而存在多项为人诟病的缺失与不便，严重影响到鞋类产品的经济价值，实有彻底解决其缺失的必要。

## 发明内容



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有鉴于此，本案发明人乃籍由多年从事鞋类相关产品研发与制造的经验，积极寻求解决的方案，经长期努力的研究与试作，终有本发明的产生，针对现有技术存在的缺点，本发明提供一种鞋子；本发明采用的技术方案是：一种鞋子，其特征为：以多数股弹性编织带经连续交叉编织，使其形成具伸缩弹性的圆筒形编织鞋面基材，尔后于鞋面基材一侧的预设适当位置予以裁切有鞋口，并经过适当的修裁塑型后，再与预先已成型的中底进行结合，以此而形成一舒适、透气性佳且耐用的鞋子产品。

圆筒形编织鞋面基材采用 30-60 度交叉编织法编织而成。

在鞋面基材的鞋口周缘车缝滚边条。

鞋面基材与中底采用粘胶贴合、线材车缝、或先粘胶贴合再予以线材车缝、或其他等效的方式结合。

一种鞋子的鞋面，其特征在于：其主要是以多数股弹性编织带经连续交叉编织，使其形成具伸缩弹性的圆筒形编织鞋面基材，尔后于鞋面基材一侧的预设适当位置予以裁切有鞋口，并经适当的修裁塑型后，以此而形成一具有舒适、透气性佳且耐用的鞋面。

圆筒形编织鞋面基材采用 30-60 度交叉编织法编织而成。

在鞋面基材的鞋口周缘车缝滚边条。

本发明鞋子的结构，使鞋子的结合制程易于实施例，同时能节省较多的内衬（里）组件与粘胶量，以符合环保要件，另，筒状鞋面是采直接与中底结合，其成品除富具极佳的包覆性与透气性使穿着更为舒适外，且耐用度更显卓越，避免产生爆裂损坏之虞。

本发明还提供的鞋子鞋面具有良好包覆性及透气性。

## 附图说明

图 1 为习知鞋面基材的成型示意图；

图 2 为习知鞋子的大部分分解立体示意图；

图 3 为本发明的鞋子基材编织状态示意图；

图 4 为本发明的大部分解立体示意图；

图 5 为本发明的穿着实施例示意图。



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**具体实施方式**

下面结合附图及具体实施例对本发明作进一步的详细说明。

如图 3 所示，本发明一种鞋子，其主要是以多数股弹性编织带 10 经连续交叉编织，使其形成具伸缩弹性的圆筒形编织鞋面基材 1。

如图 3、4 所示，尔后于鞋面基材 1 一侧的预设适当位置予以裁切有鞋口 11，并经适当的修裁塑型后，以形成一具有舒适且透气性佳的鞋面。

再者，预先制作一所需造型、功能的鞋中底 2，并在中底 2 下方贴附或一体射设有大底 3，再将上述已成型的鞋面基材 1 与中底 2 进行结合，以此而形成一舒适、透气性佳且耐用的鞋子产品（请参阅图 5 所示）。

如图 3 所示，本发明的圆筒形编织鞋面基材 1、采 30-60 度交叉编织法编织而成。

如图 4 所示，另外，本发明是在鞋面基材 1 的鞋口 11 周缘车缝滚边条 111，其材质以具弹性者为佳。

本发明的鞋面基材 1 与中底 2 是采用粘胶贴合、线材车缝、或先粘胶贴合再予以线材车缝、或其他等效的方式结合。

通过上述的说明，由于本发明采用鞋面基材 1 与中底 2 直接结合，据此使得鞋子的结合制作过程易于实施外，且耐用度更显卓越，除能避免产生爆裂损坏之虞，同时又能节省较多的内衬（里）组件与粘胶量，以达到符合环保的要件，其为本发明的一优点。

再者，本发明的筒状鞋面 1 是采用弹性编织带 10 经过连续交叉编织而成，其成品的包覆性与透气性极佳，籍此，使其穿着时具有舒适的效果外，并可防止微菌孳生或导致使恶臭、香港脚，此乃本发明另一优点。

此外，本案在实际使用时，可视情况使用鞋垫，以增加其舒适性。

归纳上述的说明，本发明可有效解决传统鞋子的缺失与不便，同时具有上述众多的效能与实用价值，因此本发明确为一创新、新颖、进步的创作，且在相同的技术领域未见相同或近似的产品公开使用，故本发明符合专利的申请要件，现依法提出申请。



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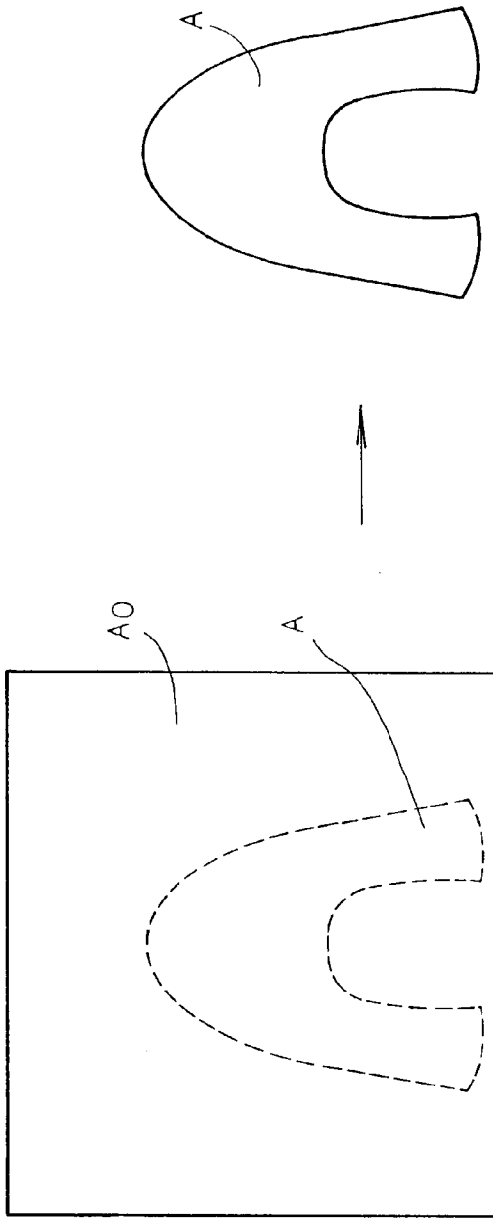



图 1



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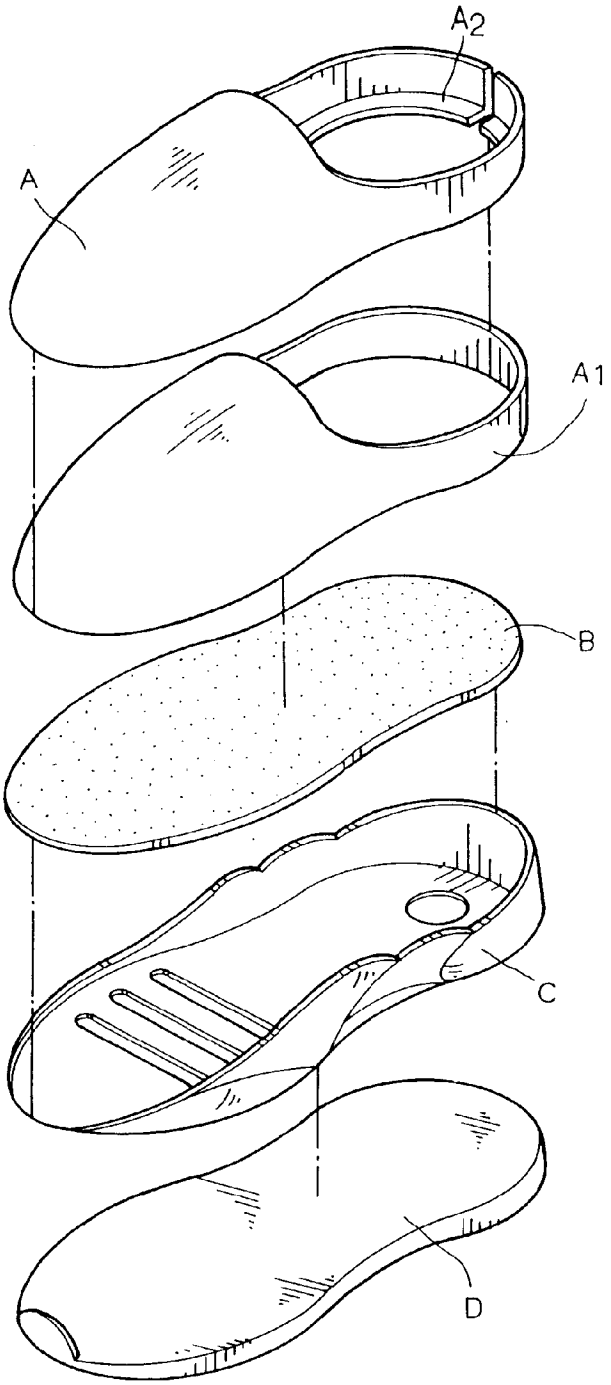



图 2



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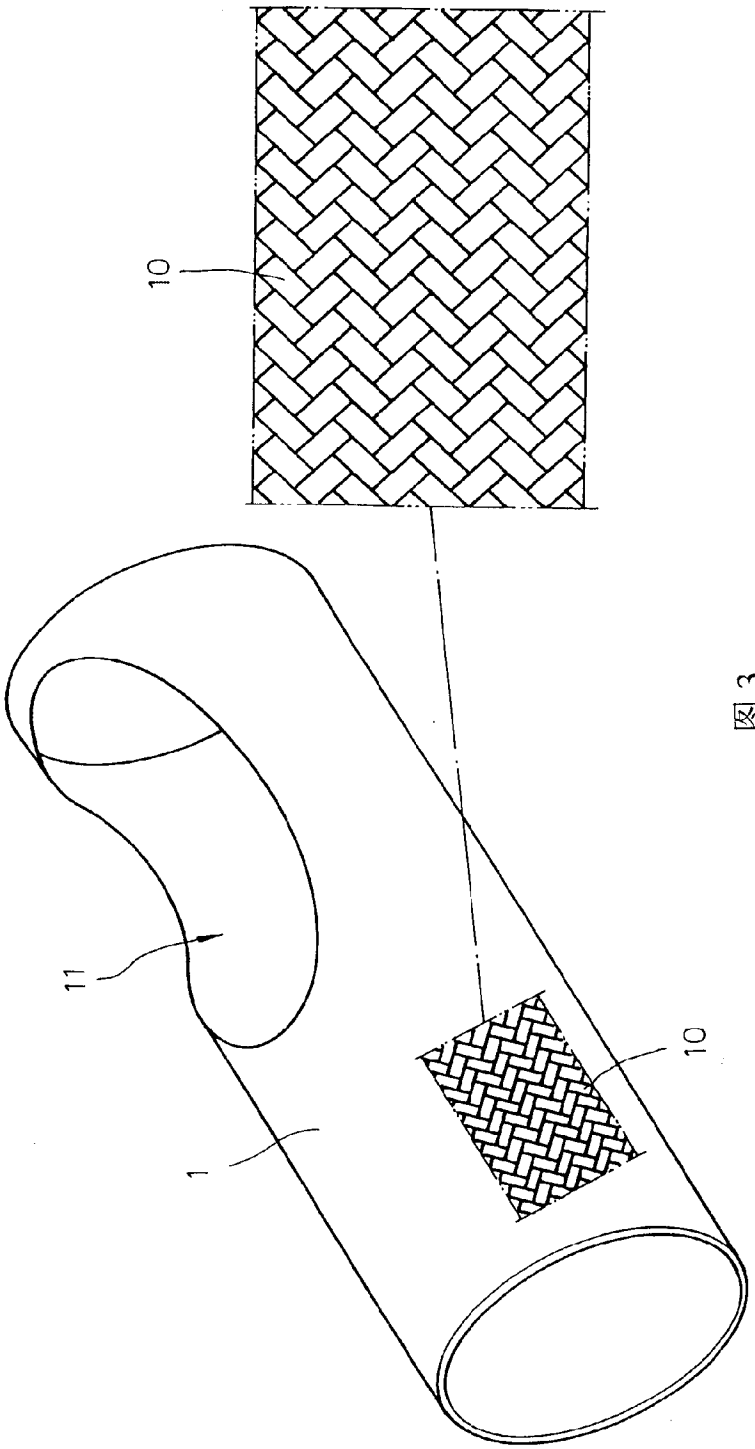



图 3



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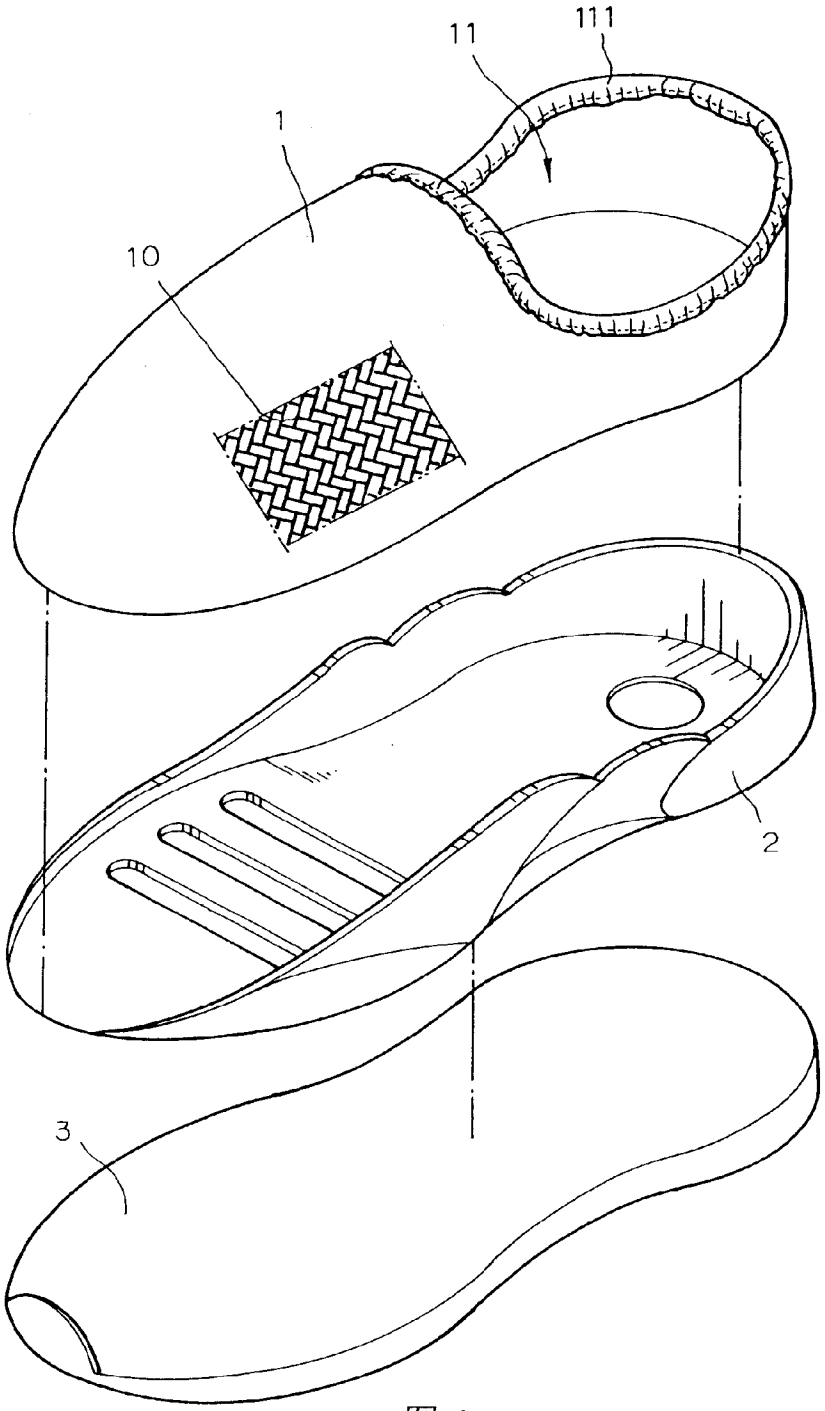



图 4



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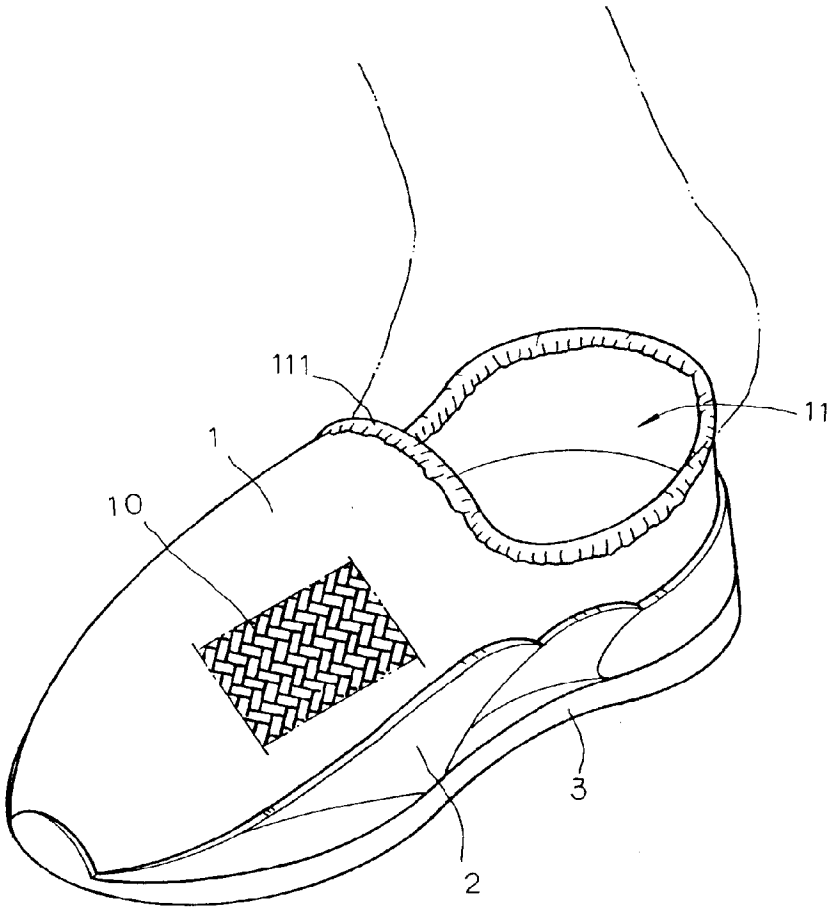



图 5



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[19] State Intellectual Property Office of the People's Republic of China

[51]Int. Cl[7].
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**[12] Published Specification of Invention Patent Application**

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[21] Application No.: 01136395.9
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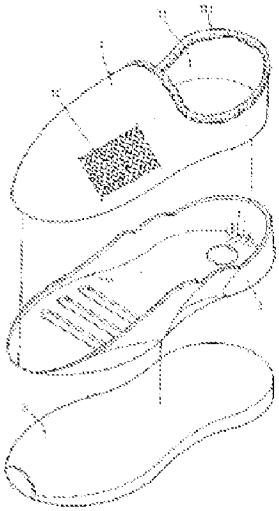
[74] Patent agency: China Science Patent & Trademark Agent Ltd.
Agent: Liguang Zhu, Zhanbang Zhang

One page of Claims, three pages of Specification and five pages of Drawings

[54] Title of Invention Shoe

[57] Abstract

The invention relates to a shoe, which is made by continuously interleaved braiding with a plurality of strands of elastic braids to form an elastic cylindrical braided vamp base material, and then cutting a topline in an appropriate preset position at one side of the vamp base material, and trimming and modeling it properly, and then combining it with a pre-molded insole to form a comfortable and durable shoe product with a good air permeability.



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1. A shoe, characterized in that it is made by continuously interleaved braiding with a plurality of strands of elastic braids to form an elastic cylindrical braided vamp base material, then cutting a topline in an appropriate preset position at one side of the vamp base material, and trimming and modeling it properly, and then combining it with a pre-molded insole to form a comfortable and durable shoes product with a good air permeability.

2. The shoe according to Claim 1, characterized in that the cylindrical braided vamp base material is made by braiding using the method of 30~60° interleaved braiding.

3. The shoe according to Claim 1, characterized in that a piping is sewed along the circumference of the topline of the vamp base material.

4. The shoe according to Claim 1, characterized in that the vamp base material is combined with the insole by means of gluing, thread sewing or first gluing and then thread sewing, or other equivalent means.

5. A vamp of a shoe, characterized in that it is made by continuously interleaved braiding with a plurality of strands of elastic braids to form an elastic cylindrical braided vamp base material, and then cutting a topline in an appropriate preset position at one side of the vamp base material, and trimming and modeling it properly, and then combining it with a pre-molded insole to form a comfortable and durable vamp with a good air permeability.

6. The shoe according to Claim 5, characterized in that the cylindrical braided vamp base material is made by braiding using the method of 30~60° interleaved braiding.

7. The shoe according to Claim 5, characterized in that a piping is sewed along the circumference of the topline of the vamp base material.



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# Shoe

## Field of the Invention

The present invention relates to the technical field of a shoe, and more particularly to a shoe with an elastic cylindrical braided vamp.

## Background of the Invention

The prior traditional shoe process, particularly for gym shoes with a cloth vamp for leisure and sports purpose (as shown in Figures 1 and 2), mainly comprises the combination of cutting a piece of vamp cloth A of the preset size, gluing a layer of lining (inner lining) A1 to the inlay of the vamp cloth A, folding a bottom edge A2 at the bottom of the circumference of the vamp cloth A, then gluing or sewing the bottom edge A2 to a cloth sole B, and gluing an insole C to the lower layer of the cloth sole B, and further gluing or sewing the insole C to the vamp cloth A, and then attaching an outsole D to the bottom of the insole C by gluing or injection. This process of combination involves complicated steps and troublesome procedures, and uses a large amount of mucilage glue, which not only wastes labor hours and manufacture costs, but also is not good to the environment.

As shown in Figure 1, furthermore, since the vamp cloth A of the prior shoe is first made by perpendicularly interleaved braiding to become a gray cloth A0 and the gray cloth A0 is blanked to become the inlay of the vamp cloth A and is glued to the lining (inner lining) A1 layer. However, the glue itself is not air permeable, leading to poor coverage and bad air permeability of the shoe when worn, which in turn not only gives rise to frowziness and discomfort, but could also easily cause growth of germs an microbes, resulting in stink or "Hong Kong-foot" (dermatophytosis).

The vamp cloth A of the prior shoe is glued or sewed to the cloth sole B by using the bottom edge A2 set at the bottom, and is then combined with the insole C by gluing or sewing. The structure from this combination will have stress at a single point. These factors could easily cause popping cracks between the vamp cloth A and cloth sole B during vigorous running and jumping, resulting in damages.

It is know from the above description that, due to design defects, the traditional shoes, regardless of their composition or manufacture methods, have a number of shortcomings and inconveniences which are the frequently complaints and seriously affect the economic value of shoe products, so it is necessary to thoroughly solve these shortcomings.

## Description of the Invention



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In view of this, the inventor of the present invention has been actively looking for a solution, building on years of experience in research, development and manufacture of shoe-related products, and finally made the present invention after a long period of research and trial manufactures. Targeting at the disadvantages of the prior art, the present invention provides a shoe. The technical scheme of the present invention is: a shoe, characterized in that it is made by continuously interleaved braiding with a plurality of strands of elastic braids to form an elastic cylindrical braided vamp base material, then cutting a topline in an appropriate preset position at one side of the vamp base material, and trimming and modeling it properly, and then combining it with a pre-molded insole to form a comfortable and durable shoes product with a good air permeability.

The cylindrical braided vamp base material is made by braiding using the method of 30~60° interleaved braiding.

A piping is sewed along the circumference of the topline of the vamp base material.

The vamp base material is combined with the insole by means of gluing, thread sewing or first gluing and then thread sewing, or other equivalent means.

A vamp of a shoe, characterized in that it is made by continuously interleaved braiding with a plurality of strands of elastic braids to form an elastic cylindrical braided vamp base material, then cutting a topline in an appropriate preset position at one side of the vamp base material, and trimming and modeling it properly, and then combining it with a pre-molded insole to form a comfortable and durable vamp with a good air permeability.

The cylindrical braided vamp base material is made by braiding using the method of 30~60° interleaved braiding.

A piping is sewed along the circumference of the topline of the vamp base material.

The structure of the shoe of the present invention makes it easy to implement the shoe combination process, and can save a considerable amount of lining (inner lining) components and glue to meet environmental protection requirements, and furthermore, the cylindrical vamp is directly combined with the insole so that the finished product will have better durability to avoid the problem of cracking damages, in addition to excellent coverage, a good air permeability, and more comfort when worn.

The shoe and vamp provided by the present invention has good coverage and air permeability.

**Brief Description of the Drawings**

Figure 1 is a schematic diagram of forming of the prior vamp base material;
Figure 2 is a 3D schematic diagram showing the most decomposition of the prior shoes;
Figure 3 is a schematic diagram showing the braiding status of shoe base material of the present invention;
Figure 4 is a 3D schematic diagram showing the most decomposition of the invention;
Figure 5 is a schematic diagram showing an embodiment of wearing of the present invention.



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**Embodiments**

Further detailed description of the present invention will be given below in combination with drawings and embodiments.

As shown in Figure 3, the present invention provides a shoe, which is made by continuously interleaved braiding with a plurality of strands of elastic braids 10 to form an elastic cylindrical braided vamp base material 1.

As shown in Figures 3 and 4, then a topline 11 is cut in an appropriate preset position at one side of the vamp base material 1, then it is trimmed and modeled properly, and is finally combined with a pre-molded insole to form a comfortable and durable vamp with a good air permeability.

Furthermore, a shoe insole 2 with the required model and functions is made in advance, an outsole 3 is provided at the bottom of the insole 2 by bonding or by integrated injection, and then the said formed vamp base material 1 is combined with the insole 2 to form a comfortable and durable shoe product with a good air permeability (see Figure 5).

As shown in Figure 3, the cylindrical braided vamp base material 1 of the present invention is made by braiding using the method of 30~60° interleaved braiding.

Additionally, as shown in Figure 4, the present invention involves sewing of the piping 111 along the circumference of the topline 11 of the vamp base material 1, and preferably the material of the piping is elastic.

The vamp base material 1 of the present invention is combined with the insole 2 by means of gluing, thread sewing or first gluing and then thread sewing, or other equivalent means.

According to the above description, since the present invention uses direction combination of the vamp base material 1 and the insole 2, it is easy to implement the combination process of shoes, and the shoes have better durability to avoid the trouble of cracking damages while saving a considerable amount of lining (inner lining) components and glue to meet environmental protection requirements. This is an outstanding advantage of the present invention.

Furthermore, the cylindrical vamp 1 of the present invention is made by continuous interleaved braiding with elastic braids 10, so the finished product has excellent coverage and a good air permeability. As a result, it is not only comfortable to wear, but can also avoid the growth of gems and microbes that could lead to stink and Hong Kong foot. This is another advantage of the present invention.

Furthermore, in actual application of the present invention, a pad may be used as needed to improve comfort.

In summary, the present invention not only effectively solves the shortcomings and inconveniences of the traditional shoes but also has many functional and practical values as mentioned in the above, so the present invention is an innovative, novel and advanced creation, and public use of the same or similar products in this technical field has never been seen. Therefore, the present invention meets the requirements for patentability, and hereby an application is filed according to applicable laws.



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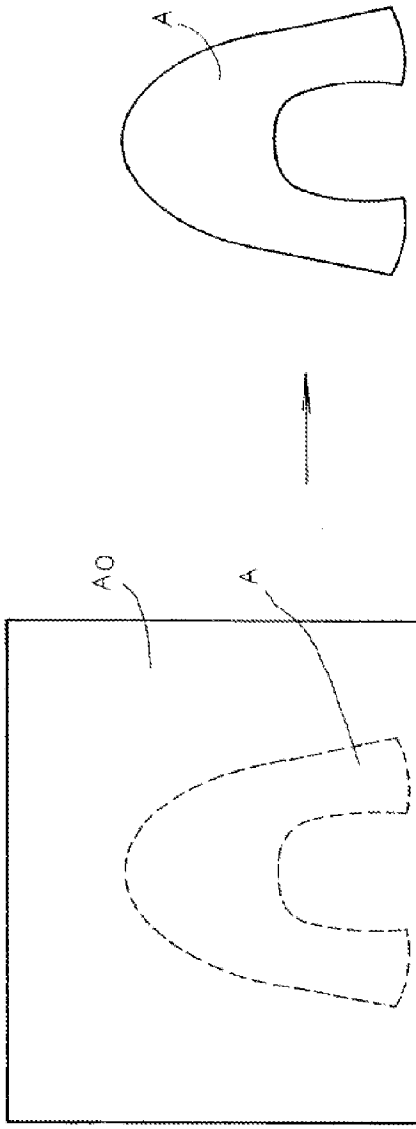



Figure 1



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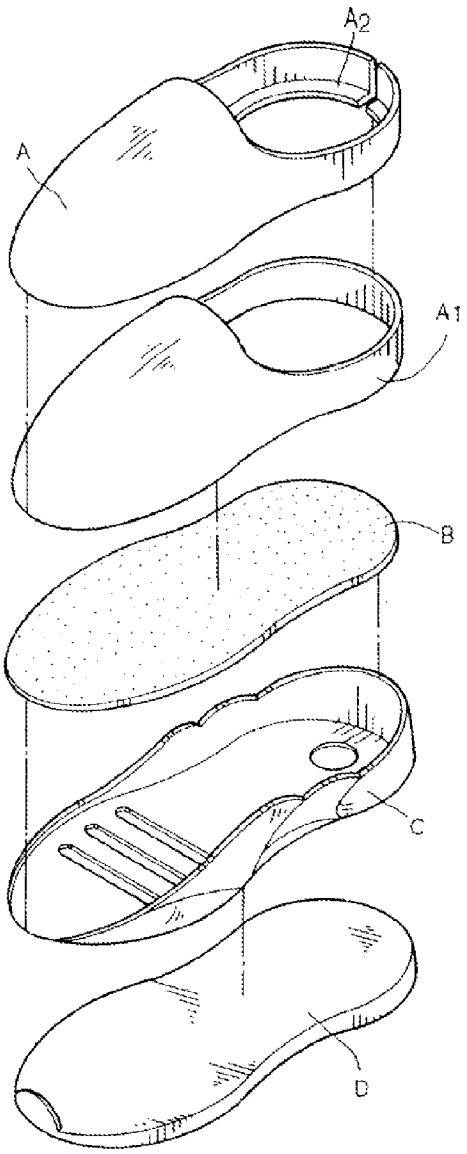



Figure 2



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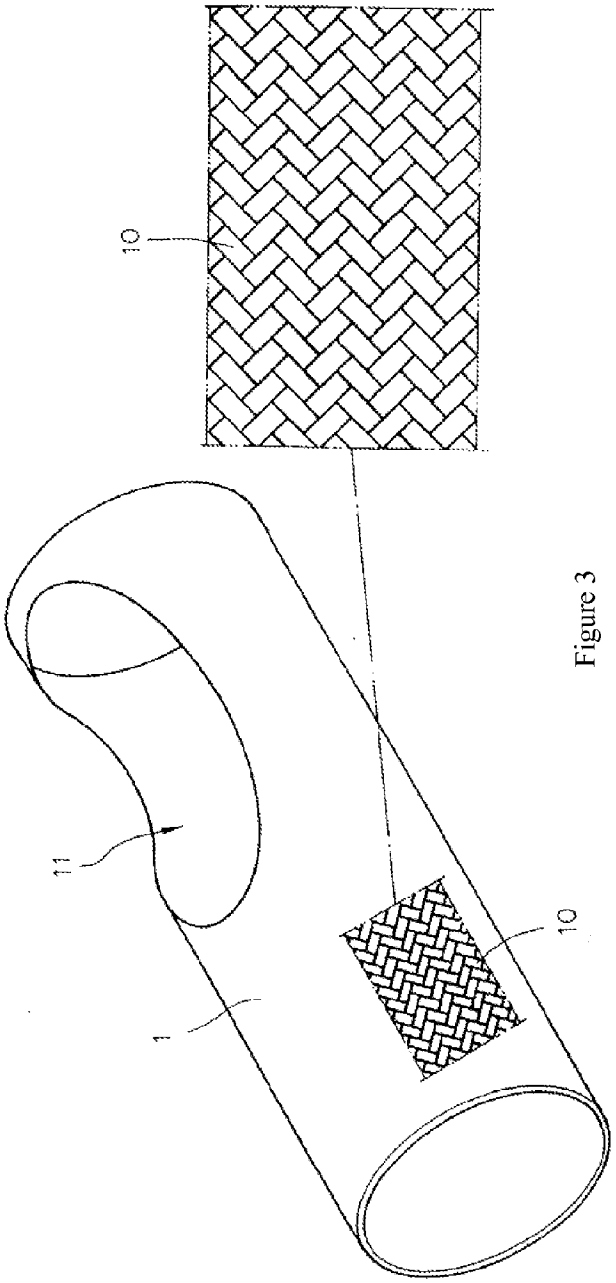



Figure 3



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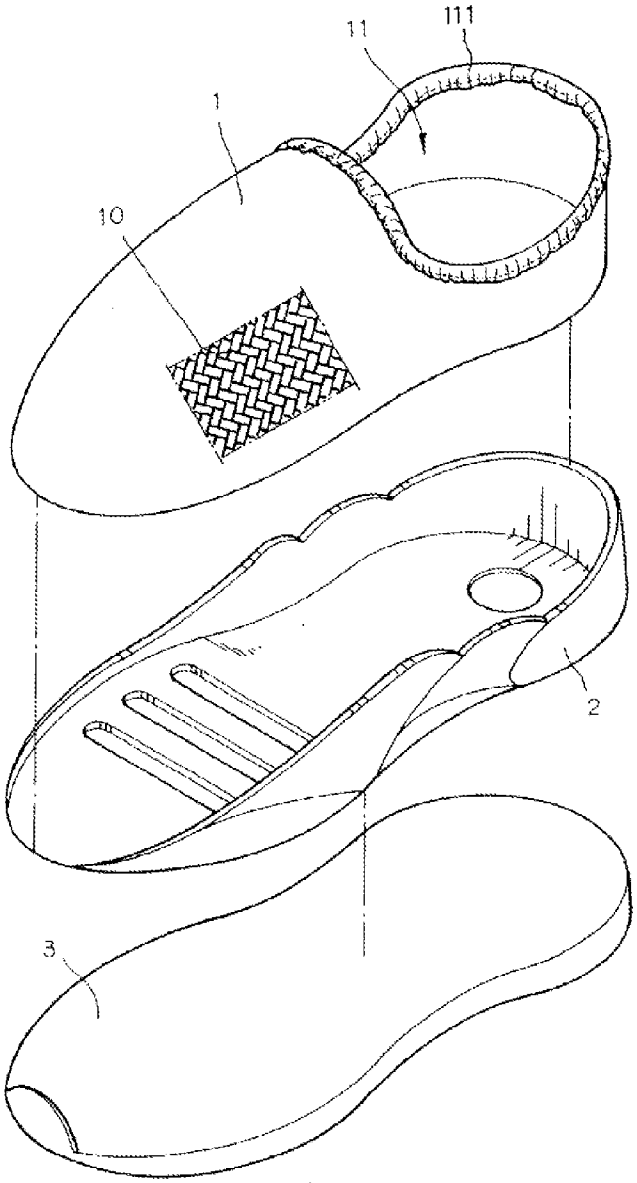



Figure 4



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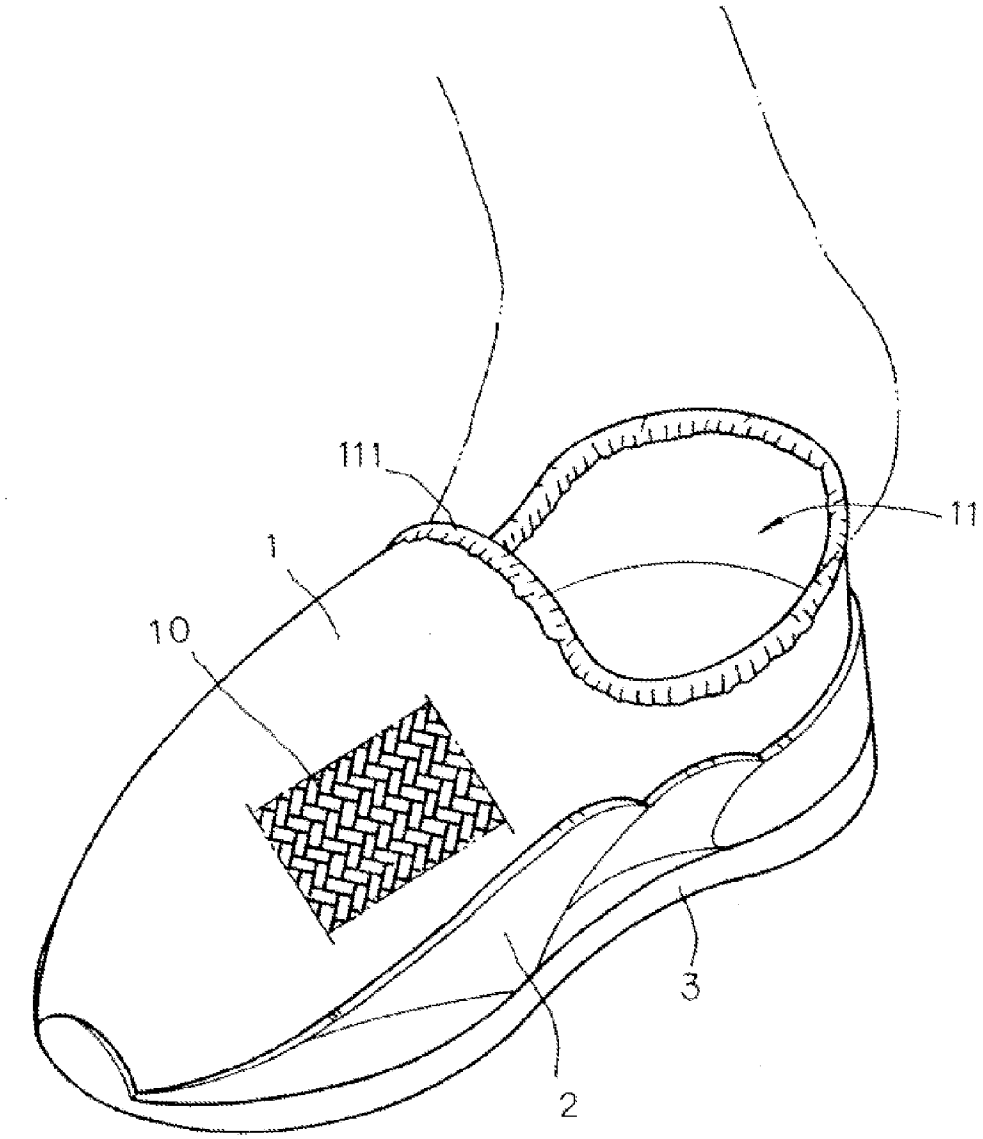



Figure 5



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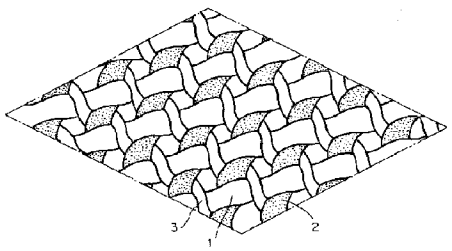
[74] 专利代理机构 中科专利商标代理有限责任公司
代理人 朱黎光 张占榜

权利要求书 2 页 说明书 3 页 附图 5 页

[54] 发明名称 三向立体鞋面

[57] 摘要

本发明提供一种三向立体鞋面，其主要是包含有经向带、纬向带及一支撑带，其中，经向带及纬向带分别在经、纬向交叠后，再由支撑带与经、纬向带略呈三角关系，并以波浪状上下穿过前述的经向带及纬向带，令经向带、纬向带、支撑带交叉编织后形成一呈三角立体形状结构的三向立体鞋面。本发明利用该一结构，使提供鞋面具有以不同方向可观得不同色彩及视觉变化，使成品能够呈显多重变化的效果，以之为消费者所广泛接受，同时本发明的立体效果是编织而成，故制作步骤简易、减少人工及成本浪费，进而使成品价格降低，据此以期提高鞋子的品质及经济价值。




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1、一种三向立体鞋面，其特征在于：包含有经向带、纬向带及一支撑带，其中，经向带及纬向带分别在经、纬向交叠后，再由支撑带与经、纬向带略呈三角关系，并以波浪状上下穿过前述的经向带及纬向带，令经向带、纬向带、支撑带交叉编织后形成一呈约三角立体状结构的三向立体鞋面。

2、如权利要求 1 所述的三向立体鞋面，其特征在于：该经向带、纬向带及支撑带是为一编织带。

3、如权利要求 1 所述的三向立体鞋面，其特征在于：该支撑带具有与经向带、纬向带不同的颜色。

4、如权利要求 1 所述的三向立体鞋面，其特征在于：该支撑带、纬向带、经向带具不同的颜色。

5、如权利要求 1 所述的三向立体鞋面，其特征在于：该支撑带、经向带、纬向带具有相同的颜色。

6、如权利要求 1 所述的三向立体鞋面，其特征在于：该经向带、纬向带及支撑带可为皮料、塑合材料或其他材质。

7、一种三向立体鞋面布，其特征在于：包含有经向带、纬向带及一支撑带，其中，经向带及纬向带分别在经、纬向交叠后，再由支撑带与经、纬向带略呈三角关系，并以波浪状上下穿过前述的经向带及纬向带，令经向带、纬向带、支撑带交叉编织后形成一呈三角立体状结构的三向立体鞋面布。

8、如权利要求 7 所述的三向立体鞋面布，其特征在于：该经向带、纬向带及支撑带是为一编织带。

9、如权利要求 7 所述的三向立体鞋面布，其特征在于：该支撑带具有与经向带、纬向带不同的颜色。

10、如权利要求 7 所述的三向立体鞋面布，其特征在于：该支撑带、纬向带、经向带具有不同的颜色。



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11、如权利要求 7 所述的三向立体鞋面布，其特征在于：该支撑带、经向带、纬向带具有相同的颜色。

12、如权利要求 7 所述的三向立体鞋面布，其特征在于：该经向带、纬向带及支撑带可为皮料、塑合材料或其它材质。



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# 三向立体鞋面

## 所属技术领域

本发明涉及鞋子的鞋面技术领域，尤指一种具有以不同方向会呈显不同色彩及视觉变化的三向立体鞋面。

## 背景技术

已知传统的鞋面布，尤指编织鞋面，一般仅以简单的经、纬轴向交叉编织方式制成平面编织鞋面，此种已知鞋面布的外观较为呆板单调，若为求鞋面呈显多变化，则另需在鞋面印刷或车缝图案，商标或文字等，而此一加工方式不但步骤繁琐复杂，浪费人工增加成本，且仍无法满足时下年青人追求新鲜感的要求。

经由上述的说明可知，由于传统鞋面布的成型方式，普遍存在有呆板单调与加工繁琐、变化性不足等缺点，严重影响到鞋类产品的经济价值及竞争能力，实有彻底解决其缺点的必要。

## 发明内容

有鉴于此，本发明人乃以多年从事鞋类相关产品的研发与制造的经验为基础，积极寻求解决的方案，经长期努力的研究与试作，而有了本发明的三向立体鞋面的产生。

本发明主要的特征是：包含有经向带、纬向带及一支撑带，其中，经向带及纬向带分别在经、纬向交叠后，再由支撑带与经、纬向带略呈三角关系，并以波浪状上下穿过前述的经向带及纬向带，令经向带、纬向带、支撑带交叉编织后形成一呈三角立体状结构的三向立体鞋面。

本发明提供一种三向立体鞋面，其利用该一高度创作的结构，使提供鞋面具有以不同方向可观得不同色彩及视觉变化，使成品能够呈显多重变



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化的效果，以之为消费者所广泛接受，同时本发明的立体效果是编织而成，故制作步骤简易、减少人工及成本浪费，进而使成品价格降低，据此以期提高鞋子的品质及经济价值。

为使能进一步了解本发明的构成、特征及其它目的，以下乃举一较佳实施例，并配合附图详细说明如后，同时让熟习该项技术领域者能够具体实施。

附图说明

图 1 是本发明的编织平面示意图；

图 2 是本发明第一方向的立体示意图；

图 3 是本发明第二方向的立体示意图；

图 4 是本发明第三方向的立体示意图；

图 5 是本发明使用于鞋子的实施例示意图。

其中 1---经向带　　2---纬向带　　3---支撑带

具体实施方式

如图 1 所示，本发明是一种三向立体鞋面，其主要是包含有多股的经向带 1、纬向带 2 及支撑带 3，其中，经向带 1 及纬向带 2 分别在适当角度的经、纬向交叉互叠，互叠方式以经向带 1 在上纬向带 2 在下，再由支撑带 3 与经向带 1、纬向带 2 略呈三角关系，并以波浪状上下穿过前述的经向带 1 及纬向带 2，支撑带 3 的编织方式为跨越过经向带 1 之上，再往下穿设于纬向带 2 之下，如图 2 至图 4 所示，而利用前述的编织制造程序，得令经向带 1、纬向带 2、支撑带 3 交叉编织后的鞋面布，形成一呈约三角立体状的结构。

再者，本发明的经向带 1、纬向带 2 及支撑带 3 是为一编织带；或经向带 1、纬向带 2 及支撑带 3 可采用皮料、塑合材料或其它材质。

而本发明的支撑带 3 具有与经向带 1、纬向带 2 不同的颜色。

又，本发明的支撑带 3、纬向带 2、经向带 1 分别设具不同的颜色。



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而前述利用不同色彩的经向带 1、纬向带 2 及支撑带 3 制成的鞋面、鞋子可以从不同角度表现出不同的色彩及花纹变化，非常有趣。

另外，本发明的该支撑带 3、经向带 1、纬向带 2 设成相同的颜色。

如图 5 所示，而本发明经上述的编织制造程序后，除提供鞋面具有以不同方向可观得不同色彩及视觉变化外，且使得成品能够呈显多重变化的效果，以期为消费者所广泛接受，同时本发明的立体效果是编织而成，故制作步骤简易、减少人工及成本浪费，进而使成品价格降低，据此以期提高鞋子的品质及经济价值。

归纳上述的说明，本发明可有效解决传统鞋面布所致生的缺点，同时具有上述众多的效能与实用价值，因此本发明确实为一高度利用自然法则的设计，且在相同的技术领域中未见相同或近似的产品公开使用，于是提出发明专利申请。



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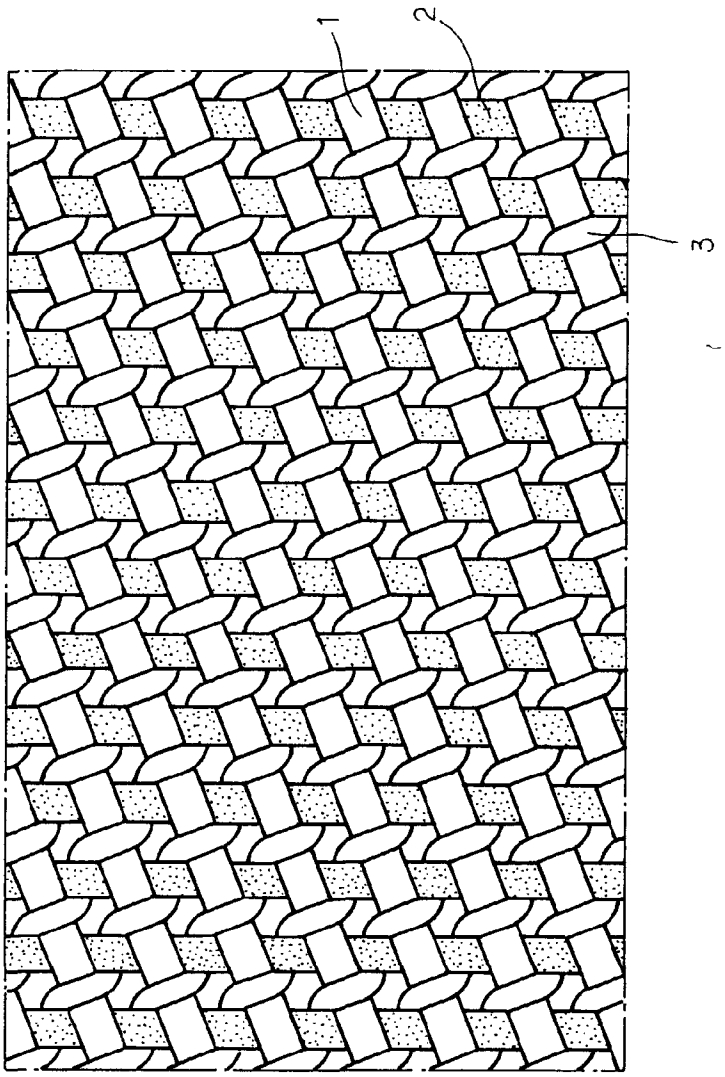



图 1



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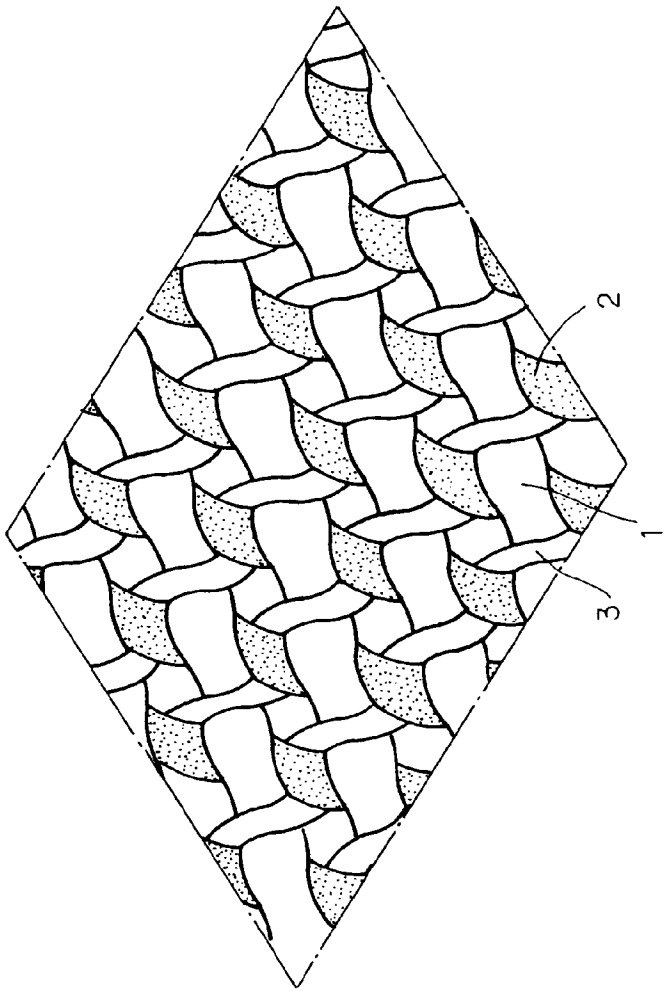



图 2



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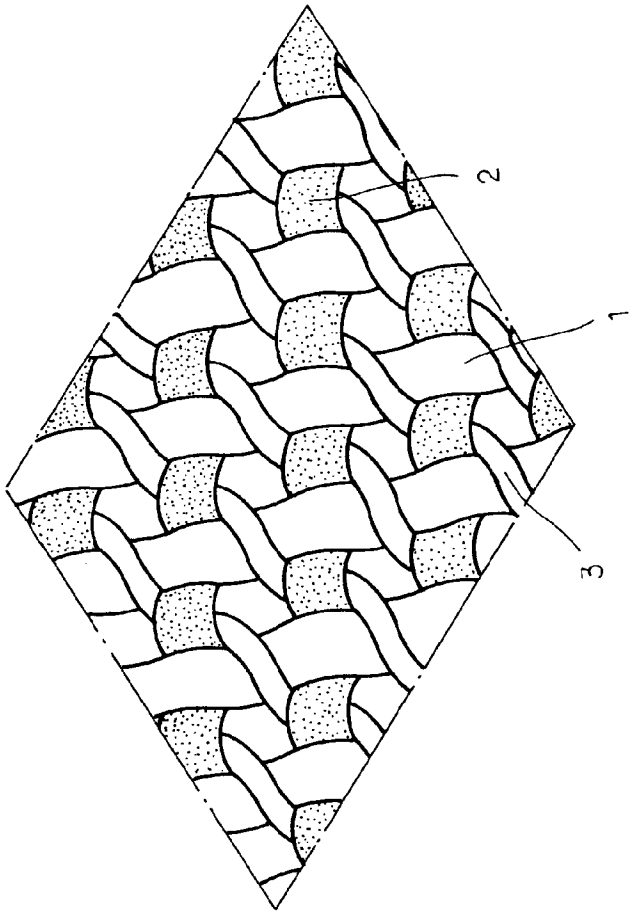



图 3



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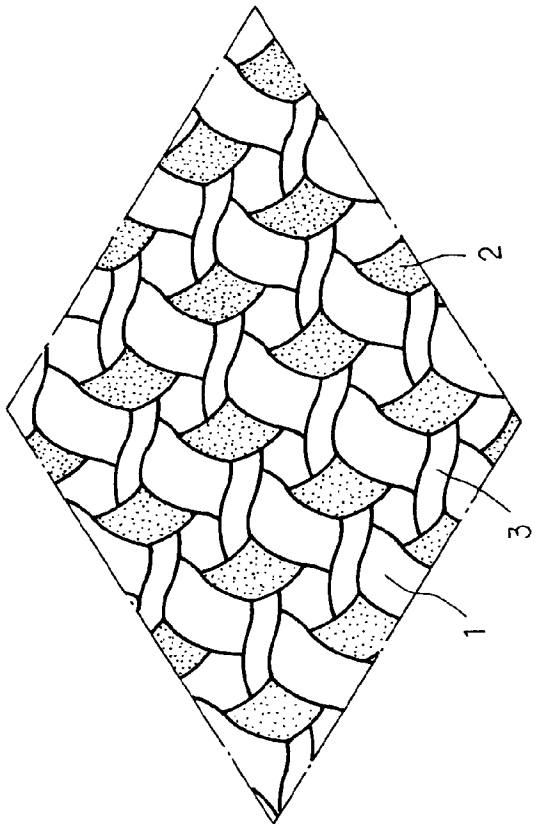



图 4



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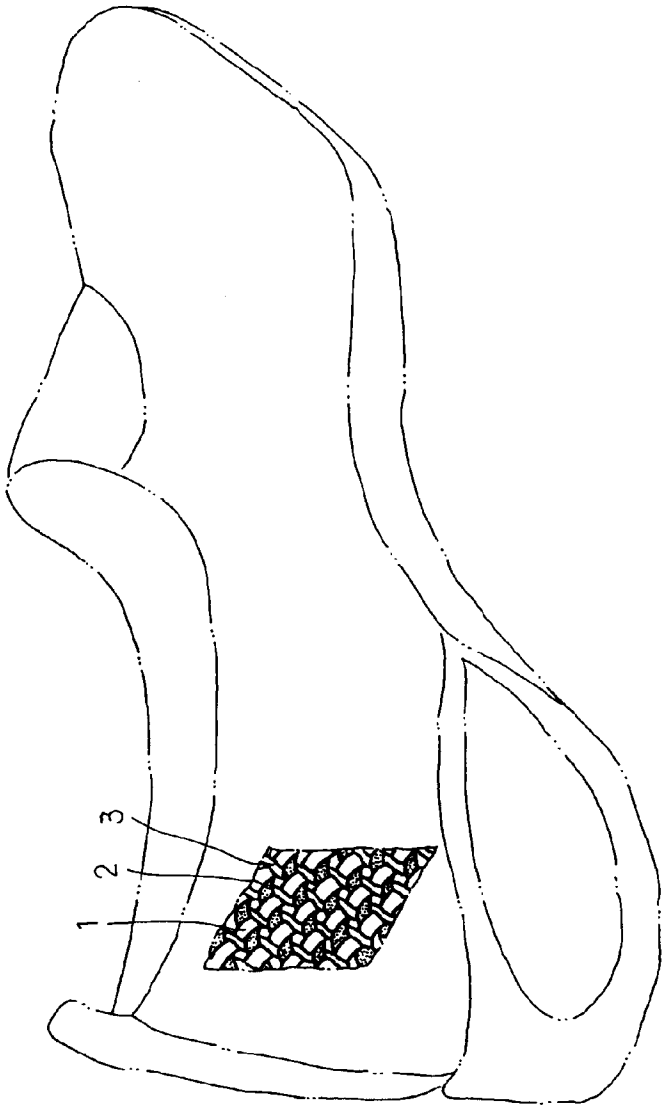



图 5



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[19] State Intellectual Property Office of the People's Republic of China

**[51]Int. Cl[7]**

**A43B 23/02**

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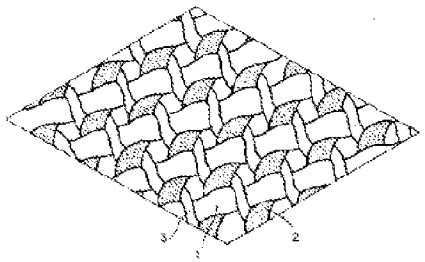
[74] Patent agency: China Science Patent & Trademark Agent Ltd.
Agent: Liguang Zhu, Zhanbang Zhang

Two pages of Claims, three pages of Specification and five pages of Drawings

[54] Title of Invention 3-dimensional Vamp

[57] Abstract

The present invention provides a 3-dimensional vamp comprising a warp braid, a weft braid and a supporting braid, wherein the warp braid and weft braid are overlapped in the warp and weft directions, the supporting braid forms a slightly triangular relationship with the warp and weft braids, and wavily weaves up and down through said warp and weft braids, so that the woven warp braid, weft braid and supporting braid form a 3-dimensional vamp of triangular 3D structure. The present invention uses this structure to provide a vamp that delivers different colors and visual changes when viewed from different directions so that the finished product has the effect of a plurality of changes, which will be widely accepted by consumers, and further, the 3-dimensional effect of the present invention results from weaving, so it is easy to make and reduces labor time and costs to lower the price of the finished product and improve the quality and economic value of the shoe.




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1. A 3-dimensional vamp, characterized in that it comprises a warp braid, a weft braid and a supporting braid, wherein the warp braid and weft braid are overlapped in the warp and weft directions, the supporting braid forms a slightly triangular relationship with the warp and weft braids, and wavily weaves up and down through said warp and weft braids so that the woven warp braid, weft braid and supporting braid form an 3-dimensional vamp of approximate triangular 3D structure.

2. The 3-dimensional vamp as described in Claim 1, characterized in that said warp braid, weft braid and supporting braid are a woven braid.

3. The 3-dimensional vamp as described in Claim 1, characterized in that said supporting braid has a different color from the warp braid and weft braid.

4. The 3-dimensional vamp as described in Claim 1, characterized in that said warp braid, weft braid and supporting braid have different colors.

5. The 3-dimensional vamp as described in Claim 1, characterized in that said warp braid, weft braid and supporting braid have the same color.

6. The 3-dimensional vamp as described in Claim 1, characterized in that said warp braid, weft braid and supporting braid can be made of leather, [synthetic] plastics or other materials.

7. A 3-dimensional vamp cloth, characterized in that it comprises a warp braid, a weft braid and a supporting braid, wherein the warp braid and weft braid are overlapped in the warp and weft directions, the supporting braid forms a slightly triangular relationship with the warp and weft braids, and wavily weaves up and down through said warp and weft braids, so that the woven warp braid, weft braid and supporting braid form a 3-dimensional vamp cloth of triangular 3D structure.

8. The 3-dimensional vamp cloth as described in Claim 7, characterized in that said warp braid, weft braid and supporting braid are a woven braid.

9. The 3-dimensional vamp cloth as described in Claim 7, characterized in that said supporting braid has a different color from said warp braid and weft braid.

10. The 3-dimensional vamp cloth as described in Claim 7, characterized in that said warp braid, weft braid and supporting braid have different colors.



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11. The 3-dimensional vamp cloth as described in Claim 7, characterized in that said warp braid, weft braid and supporting braid have the same color.

12. The 3-dimensional vamp cloth as described in Claim 7, characterized in that said warp braid, weft braid and supporting braid can be made of leather, [synthetic] plastics or other materials.



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# 3-dimensional Vamp

Field of the Invention

The present invention relates to the technical field of shoe vamp, and more particularly to a 3-dimensional vamp which can deliver different colors and visual changes when viewed from different directions.

Background of the Invention

The prior traditional vamp cloth, particularly a woven vamp, is generally a planar woven vamp simply made by cross weaving in the warp and weft axial directions. The appearance of such prior vamp cloth is relatively dull and tedious. The only way to allow the vamp to deliver various changes is to print or mechanically sew designs, trademarks or characters onto the vamp. This processing mode not only involves complicated procedures, wastes labor time and increases costs, but also cannot meet the current requirements of the young people for the feel of fashion and novelty.

It can be seen from the above description that, the forming method of the traditional vamp cloth generally results in a dull and tedious appearance, and has a complicated process and lack of changes, which has seriously affected the economic value and competitiveness of shoe products. Therefore, there is a need to thoroughly overcome these shortcomings.

Description of the Invention

In view of this, the inventor of the present invention has been actively looking for a solution, building on years of experience in research, development and manufacture of shoe-related products, and has invented the 3-dimensional vamp after a long period of research efforts and trial making.

The present invention is characterized in that it comprises a warp braid, a weft braid and a supporting braid, wherein the warp braid and weft braid are overlapped in the warp and weft directions, the supporting braid forms a slightly triangular relationship with the warp and weft braids, and wavily weaves up and down through said warp and weft braids, so that the woven warp braid, weft braid and supporting braid form a 3-dimensional vamp of triangular 3D structure.

The present invention provides a 3-dimensional vamp which uses this highly creative structure to provide a vamp that can deliver different colors and visual changes when viewed from different directions so



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that finished product has the effect of a plurality of changes, which will be widely accepted by consumers, and further the 3-dimensional effect of the present invention results from weaving, so it is easy to make and can reduce labor time and costs to lower the price of the finished products and improve the quality and economic value of shoes.

To further understand the composition, features and other purposes of the present invention, the following single preferred embodiment is given to give detailed description in combination with the drawings, and help those who are skilled in the art to implement the present invention.

Brief Description of the Drawings

Figure 1 is a planar schematic diagram of the weaving of the present invention;
Figure 2 is a 3D schematic diagram of the first direction of the present invention;
Figure 3 is 3D schematic diagram of the second direction of the present invention;
Figure 4 is a 3D schematic diagram of the third direction of the present invention;
Figure 5 is a schematic diagram of the preferred embodiment of the present invention for use in shoes.
Where, 1 – warp braid, 2 – weft braid, 3 – supporting braid

Embodiments

As shown in Figure 1, the present invention is a 3-dimensional vamp, comprising a plurality of strands of warp braid 1, weft braid 2 and supporting braid 3, wherein, the warp braid 1 and weft braid 2 are overlapped in the warp and weft directions at an appropriate angle with the warp braid 1 on top of the weft braid 2, then the supporting braid 3 forms a slightly triangular relationship with the warp braid 1 and weft braid 2, and wavily weaves up and down through said warp braid 1 and weft braid 2 in such a way that the supporting braid 3 passes over the warp braid 1 and then passes under the weft braid 2, as shown in Figures 2 through 4, so that said weaving procedure causes the vamp cloth woven by such cross weaving of the warp braid 1, weft braid 2 and supporting braid 3 to form a 3D structure.

Furthermore, the warp braid 1, weft braid 2 and supporting braid 3 of the present invention are a woven braid; or the warp braid 1, weft braid 2 and supporting braid 3 can be made of leather, [synthetic] plastics or other materials.

The supporting braid 3 of the present invention has a different color from the warp braid 1 and weft braid 2.

In addition, the supporting braid 3, weft braid 2 and warp braid 1 of the present invention are respectively configured with different colors.



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Viewed from different angles, the vamp and shoe made of the above-mentioned warp braid 1, weft braid 2 and supporting braid 3 in different colors can deliver interestingly different color and pattern changes.

In addition, the supporting braid 3, warp braid 1 and weft braid 2 of the present invention are configured with the same color.

As shown in Figure 5, after the above-mentioned weaving process, the present invention provides a vamp showing different colors and visual changes when viewed from different directions and will also allow the finished product to have the effect of a plurality of changes, which will be widely accepted by consumers, and further, the 3-dimensional effect of the present invention results from weaving, so it is easy to make and can reduce labor time and costs to lower the price of finished products and improve the quality and economic value of the shoe.

In summary, the present invention can effectively overcome the disadvantages of a traditional vamp cloth, and has a plurality of functions and practical values as mentioned in the above. Therefore the present invention is indeed an exquisite design that makes the most of the natural laws, and the public use of the same or similar products has never been seen in this technical field, so a patent application is filed hereby.



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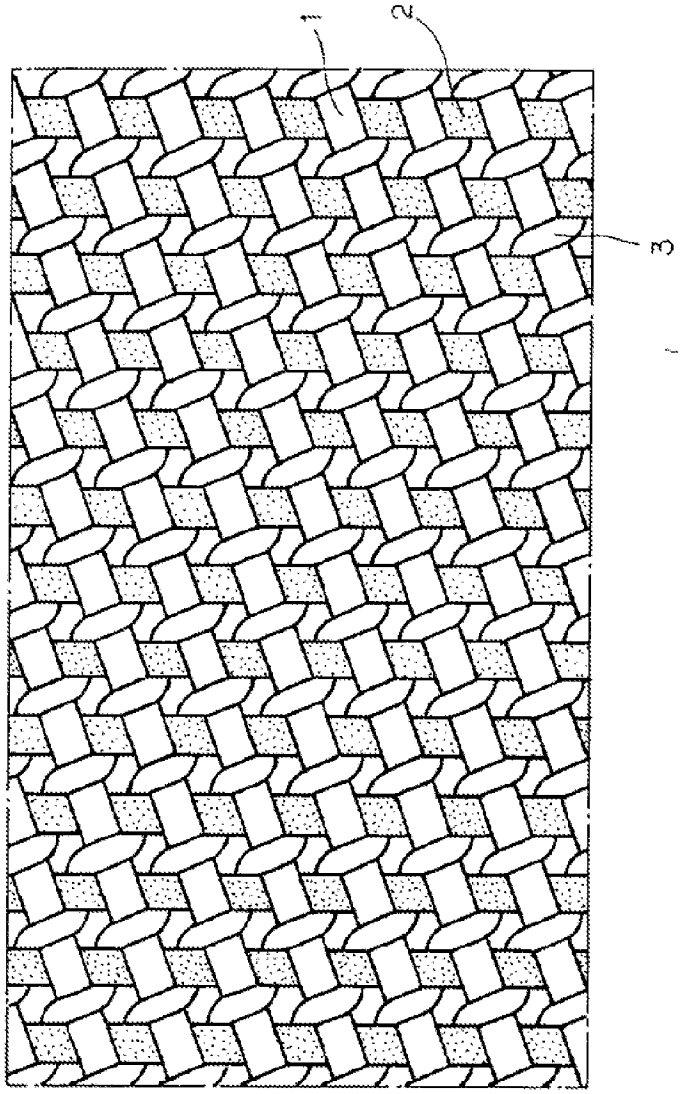



Figure 1



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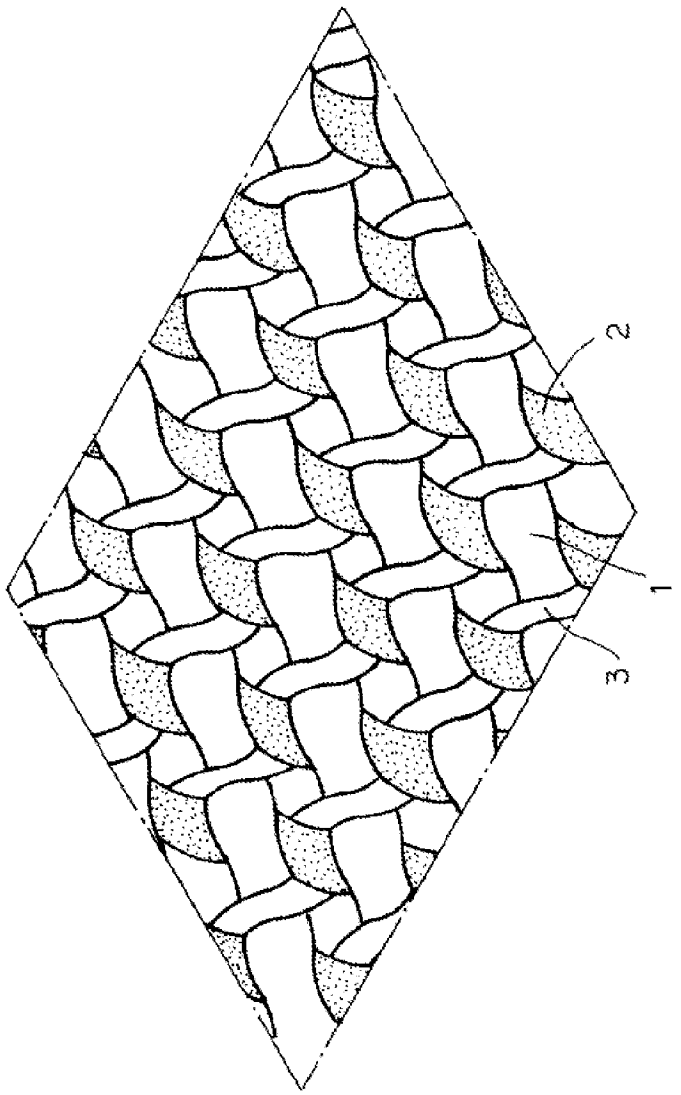



Figure 2



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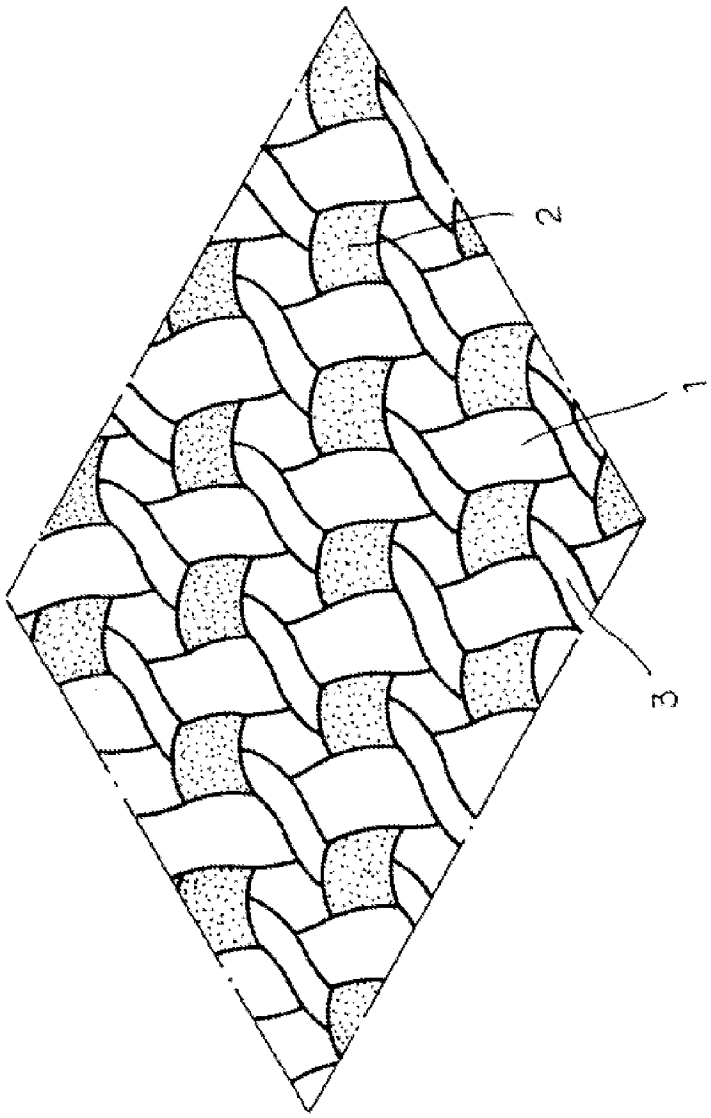



Figure 3



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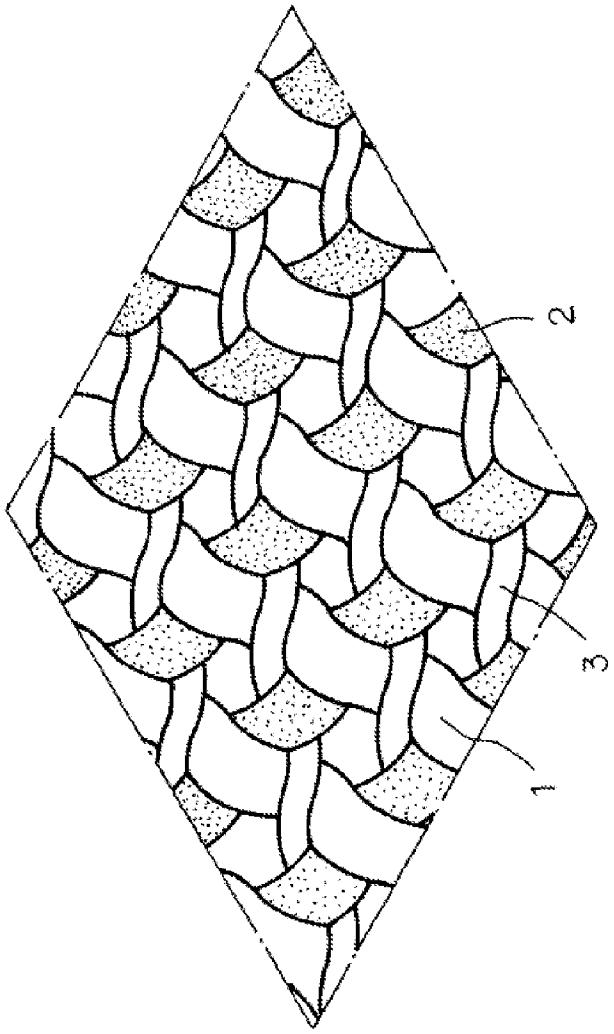



Figure 4



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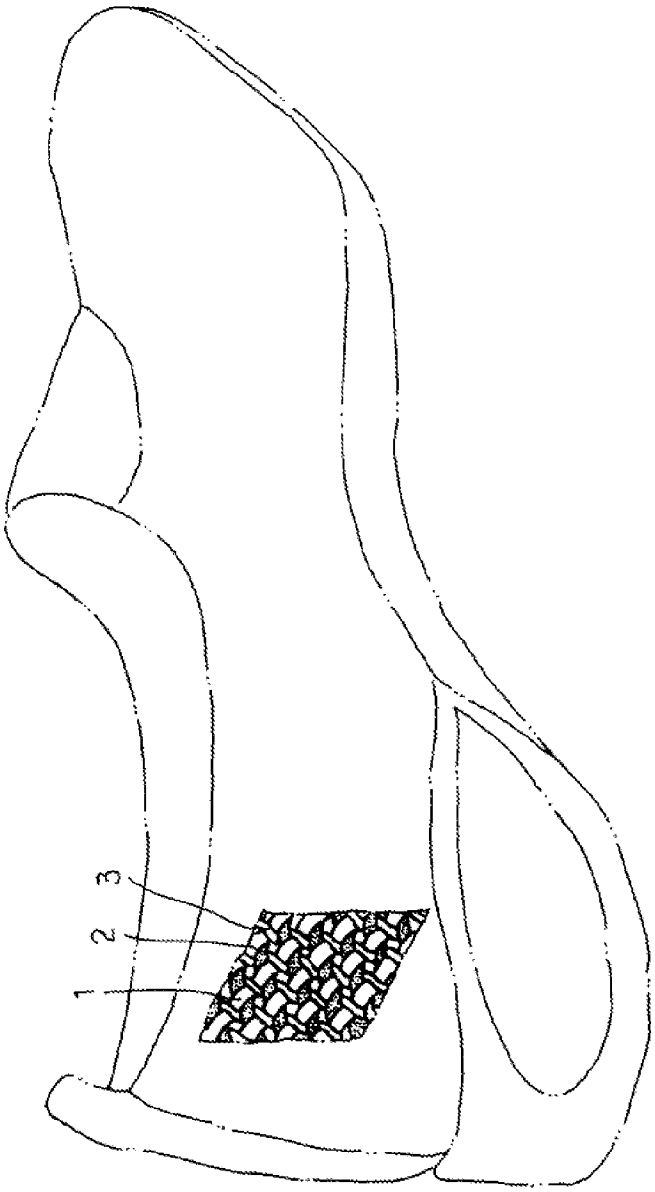



Figure 5



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1. JULI 1936

REICHSPATENTAMT

# PATENTSCHRIFT

№ 627878

KLASSE 71a GRUPPE 101

*H 133712 VII/71a*

*Tag der Bekanntmachung über die Erteilung des Patents: 12. März 1936*

Patentverwertung Dr. Martin Günther G. m. b. H. in Berlin

## Verfahren zur Herstellung von Schuhen mit Gewebeoberteil

Patentiert im Deutschen Reiche vom 25. Oktober 1932 ab

Zur Herstellung von leichten Schuhen werden meist Gewebe verwendet, die als Dickstoffgewebe mehrschichtig ausgebildet sind.

Bei derartigen Schuhen wurden auch bereits einzelne Teile, wie Vorder- und Hinterkappen, durch miteinander verklebte Gewebebahnen versteift ausgebildet. Wenn solche Versteifungen auch durch ausgestanzte Stellen mit Luftöffnungen versehen wurden, so war dieses jedoch oft nicht ausreichend, so daß sich Fußverletzungen durch Druck und Scheuern einstellten. Man hat auch bereits nahtlos gewirkte Füßlinge als Strumpf- bzw. Schuhteile einzeln hintereinander, z. B. auf Bandwebstühlen, hergestellt oder gewirkt, die eine einheitliche Gewebestruktur bzw. Maschenbildung aufweisen.

Es sind auch bereits an einzelnen Stellen verstärkte Gewebe hergestellt worden, sowie solche, die an bestimmten Stellen als Doppelgewebe ausgebildet sind, wobei die Verstärkung durch chemisch behandelte Textilfäden, doppelte Fadenführung etwa auch zur Bildung von Mustern o. dgl. erreicht wurde.

Erfindungsgemäß sind leichte Schuhe, insbesondere Sportschuhe, dadurch hergestellt, daß der Schuhoberteil aus einem Gewebe besteht, das in zusammenhängender Reihenfolge aus Gewebestreifen verschiedener Ausgestaltung erhalten wird. Diese Gewebestreifen entsprechen in ihrer Ausbildung den für den fertigen Schuh in allen seinen Teilen erwünschten Eigenschaften an Festigkeit, Steifigkeit, Elastizität usw.

Die für die verschiedenen zusammenhängenden Gewebestreifen erwünschten Gewebeeigenschaften können dadurch erreicht werden, daß die Gewebebahn an den bestimmten Stellen mehrschichtig ausgebildet ist. Es können auch an bestimmten Stellen des Gewebes harte oder härtbare Fäden eingebracht sein, deren Lage, Anzahl und Stärke sich nach den jeweils gewünschten Eigenschaften des betreffenden Schuhteiles richtet. Insbesondere für die Kappen können bestimmte Teile des zusammenhängenden Gewebes auch als Hohlgewebe ausgebildet werden, oder es können z. B. die Ober- und Unterschichten des Gewebes an bestimmten Stellen unverbunden bleiben. In die so entstehenden Hohlräume sind dann versteifende Werkstoffe eingeschoben, die der Vorder- bzw. Hinterkappe die gewünschte Festigkeit verleihen, ohne daß sich Druckstellen oder Verletzungen durch Scheuern bilden können.

Das Gewebe, die Zuschnitte oder auch der fertige Schuh können zur Erzielung der Versteifung an bestimmten Stellen einer Nachbehandlung unterzogen werden, die sich nach dem verwendeten Textilmaterial oder den besonderen Eigenschaften der Verstärkungen richtet. Die Nachbehandlung kann eine chemische sein oder z. B. durch Druck oder Wärme erfolgen. Durch die Nachbehandlung kann gleichzeitig ein Imprägnieren, Dichten oder eine sonstige Beschaffenheitsänderung des Gewebes erzielt werden.

Die einzelnen Schuhzuschnitte werden aus den entsprechend gewebten Bahnen heraus-

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geschnitten, wobei schon bei der Gewebeherstellung auf die Lage der einzelnen zusammenhängenden und zusammenzuwebenden Gewebestreifen in bezug auf die Anordnung der Schuhzuschnitte Rücksicht genommen ist.

Durch dieses Herstellungsverfahren wird der Vorteil erreicht, daß auf der ganzen Breite eines Gewebes entsprechend viele gleiche Schuhzuschnitte hergestellt werden können. Die Anordnung der einzelnen Schuhzuschnitte ermöglicht eine gute Ausnutzung des Gewebes bei geringstem Abfall. Die Schuhzuschnitte sind vollkommen für die Anbringung der Sohle fertig, und es ist nur eine Naht an der Hinterkappe erforderlich. Es lassen sich Schuhe jeder Größe durch entsprechende Wahl der Fadenanordnung herstellen, und es können z. B. auch Muster, Kennmarken o. dgl. für die einzelnen Schuhe in der fertigen Stoffbahn aufgedruckt oder sonst aufgetragen werden.

Auf der Zeichnung ist ein Ausführungsbeispiel des Erfindungsgegenstandes wiedergegeben, bei dem die einzelnen Schuhzuschnitte in besonders zweckmäßiger Weise auf einer zusammenhängenden Gewebebahn angeordnet sind.

Abb. 1 zeigt einen schematischen Querschnitt durch die in

Abb. 2 in einer Ansicht von oben dargestellten Gewebebahn, auf der die Lage der einzelnen Schuhzuschnitte angegeben ist.

Abb. 3 zeigt einen Teil des Querschnittes nach Abb. 1 mit Angabe einer beispielsweisen Ausbildung der einzelnen zusammenhängenden und zusammengewebten Gewebestreifen.

Abb. 4 gibt einen fertigen Schuh wieder.

Die Gewebebahn 1 stellt ein zusammenhängendes Gewebe dar, das jedoch aus verschieden gebundenen und ausgestatteten Streifen I, II und III besteht. Diese Streifen werden zweckmäßig so angeordnet, daß aus ihnen ein zusammenhängender, also aus einem Stück bestehender Schuhoberteil geschnitten werden kann, bei dem dann die Streifen I, II und III an den Stellen liegen, an denen, ihrer verschiedenen Ausgestaltung entsprechend, die gewünschten Eigenschaften an dem fertigen Schuh in Erscheinung treten können.

Bei dem dargestellten Ausführungsbeispiel ist die Anordnung so getroffen, daß die Schuhoberteile 2, 3, 4 und 5 mit ihrem Kappenteil so aneinanderliegen, daß die Gewebebahn 1 möglichst rationell ausgenutzt ist.

Hierbei ist der Gewebestreifen I als Hohlgewebe ausgebildet, da er zur Herstellung der Hinterkappe dient. Um die Hinterkappe zu versteifen, kann in den Hohlraum 6 zwischen der Gewebeober- und -unterschicht 7 und 8 Versteifungsmaterial eingeschoben oder eingewebt werden.

Der Gewebestreifen I geht in den Streifen II über, der bei dem dargestellten Ausführungsbeispiel zur Bildung des Blattes und der Schuhseitenteile bestimmt ist. Dementsprechend ist das Gewebe des Streifens II elastisch und mehrschichtig ausgebildet. Der Gewebestreifen II geht in den Gewebestreifen III über, der im vorliegenden Falle zur Bildung der Vorderkappe ausgebildet ist. Bei dem gezeichneten Ausführungsbeispiel sind die Schuhoberteile 2, 3, 4 und 5 mit ihrem Spitzenteil so aneinandergelegt, daß die ganze Breite des Streifens III zur Herstellung der Vorderkappen benutzt werden kann.

Der Streifen III geht dann wieder in einen Streifen II über, an welchem sich der Gewebestreifen I ohne Unterbrechung und in entsprechender Ausbildung anschließt.

Auf diese Weise bilden zwei Streifen I, zwei Streifen II und ein Streifen III einen Geweberapport $A$. Für die Herstellung eines Schuhes wird also ein halber Rapport $= {}^1/_2 A$ (Abb. 3) benötigt. Es können so viele Rapporte $A$ nebeneinander gleichzeitig hergestellt werden, wie dieses die Breite des verwendeten Webstuhles zuläßt.

Die Verbindung der einzelnen Gewebeschichten eines mehrschichtigen Gewebes kann in beliebiger Weise erfolgen; sie wird jedoch zweckmäßig, wie z. B. aus Abb. 3 ersichtlich, schon beim Weben selbst hergestellt.

Bei diesem Gewebe stellt die Schicht 7 die vollkommen gleichmäßige und glatte Oberfläche des Gewebes 1 bzw. des fertigen Schuhes dar. Zur Versteifung des Gewebestreifens III bzw. der Schicht 8 des Gewebestreifens I sind in das Gewebe Versteifungsfäden 9 eingebracht, die z. B. für die Versteifung der Hinterkappe in den meisten Fällen ausreichen dürften. Diese Versteifungsfäden sind entweder aus hartem Material hergestellt, wie z. B. die sogenannten Siriusfäden. Sie können auch mit Cellulose imprägniert und nachträglich härtbar sein. Es können auch, wenn eine Versteifung dieses Streifens gewünscht wird, in den Streifen II Versteifungsfäden eingebracht werden.

Bestehen die Versteifungsfäden aus nachträglich härtbaren Werkstoffen, so können diese in einer so großen Anzahl in das Gewebe eingebracht werden, daß bei der Härtung, die sowohl im Stoff als auch beim fertigen Schuh vorgenommen werden kann, die neben den Versteifungsfäden liegenden Textilfäden mitimprägniert und dadurch mitversteift werden, so daß eine dichte zusammenhängende Gewebeschicht entsteht. Es können auch nur bestimmte Fäden des Schuhgewebes z. B. aus Hartgarn hergestellt oder nachträglich härtbar sein. Auf diese Weise

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lassen sich alle Teile des Schuhes in der jeweils gewünschten Steifigkeit herstellen.

Die Anbringung der Schuhsohlen 10 (Abb. 4) erfolgt nach den bekannten Verfahren, und es werden auch Schnürlöcher 11, Ösen usw. in bekannter Weise an den Schuhen angebracht. Die einzelnen Schuhoberteile werden bei dem gezeichneten Ausführungsbeispiel an der Hinterkappe zusammengenäht.

Die Verteilung der einzelnen Zuschnitte 2 bis 5 auf der Gewebebahn 1 richtet sich je nach der Größe der herzustellenden Schuhe, worauf schon beim Aufbau des Gewebes Rücksicht genommen wird. Entsprechend kann der Musteraufdruck für die Schuhe im ganzen Stück vorgenommen werden, wie es auch möglich ist, gleichzeitig beim Ausstanzen entsprechende Kappen- oder Seitenteile mit gestanzten Zieröffnungen zu versehen.

Neben Sportschuhen lassen sich auch andere Fußbekleidungsstücke, wie z. B. Sandalen, Gamaschen, Überziehschuhe usw., bei denen bestimmte Stellen versteift sein sollen, in der beschriebenen Weise herstellen. Aus Abb. 4 ist die Anordnung der Gewebestreifen I, II und III ersichtlich.

## Patentansprüche:

1. Verfahren zur Herstellung von Schuhen mit Gewebeoberteil, dadurch gekennzeichnet, daß der Schuhoberteil aus einem Gewebe hergestellt ist, das in fortlaufender Reihenfolge aus in Dicke und Steifigkeit für die Bildung der Vorderkappe, des Blattes, der Seitenteile und der Fersenkappe geeigneten, zusammenhängend hergestellten Gewebestreifen besteht.

2. Verfahren nach Anspruch 1, dadurch gekennzeichnet, daß die für die Herstellung der verschiedenen, zusammenhängend hergestellten Gewebestreifen erwünschte Festigkeit und Steifigkeit durch mehrschichtige Ausbildung des Gewebes erreicht ist.

3. Verfahren nach Anspruch 1 und 2, dadurch gekennzeichnet, daß in das zusammenhängende Gewebe an bestimmten Stellen harte oder härtbare Versteifungsfäden eingebracht sind.

4. Verfahren nach Anspruch 1 bis 3, dadurch gekennzeichnet, daß das zusammenhängende Gewebe z. B. an den zur Bildung der Kappen bestimmten Teilen als Hohlgewebe ausgebildet ist.

5. Verfahren nach Anspruch 1 bis 4, dadurch gekennzeichnet, daß bestimmte Gewebeteile oder der fertige Schuh zur Versteifung einer Nachbehandlung unterzogen werden, die dem Werkstoff oder der Art der Versteifungsfäden, der gewünschten Steifigkeit des Gewebes, dem Werkstoff von eingeschobenen Einlagen o. dgl. entspricht.

Hierzu 1 Blatt Zeichnungen

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Zu der Patentschrift **627878**

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Abb. 1.

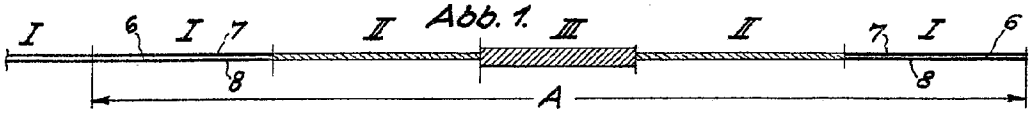



Abb. 2.

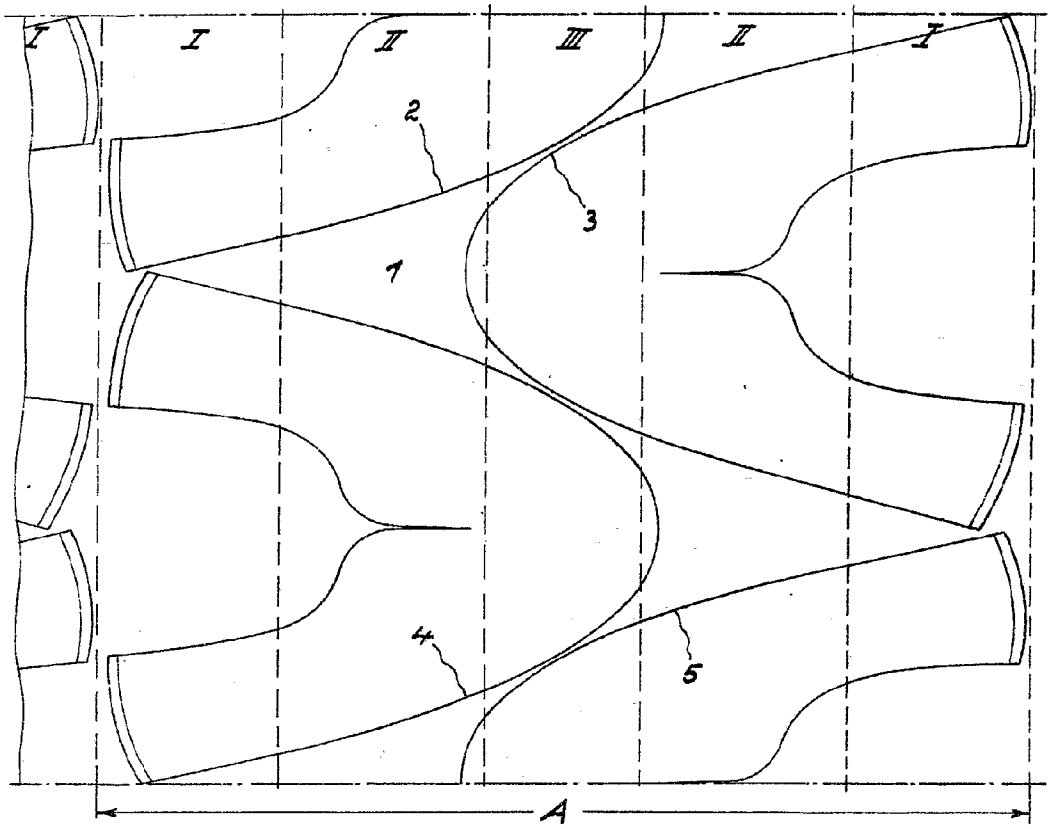



Abb. 3

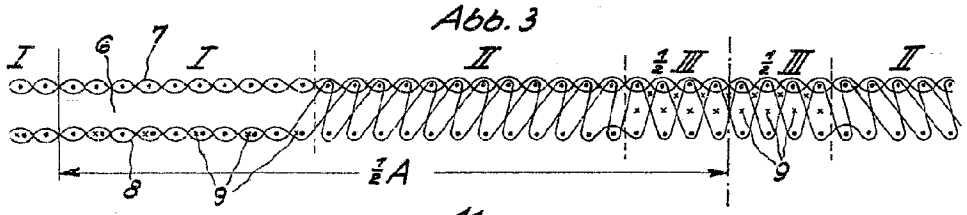
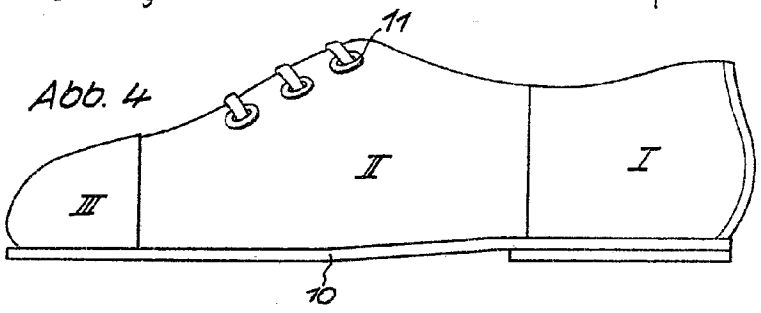



Abb. 4



**Machine Translation of DE 627878 (provided by the European Patent Office)**

Method to the preparation of shoes nmit fabric upper section The preparation of light shoes usually tissues become used, as Thick matter fabric multilayer formed are.

Slurry such Shoes also became reits single Parts, how Front one and rear one caps, through bonded with one another tissues clear reinforce formed. Even if such stiffeners by punched locations with air openings provide became, then however often was this not sufficient, so that itself foot injuries by pressure and shyness ern adjusted. One has also already approaches loose knitted Füsslinge as sock and/or. Shoe parts of single one behind the other, z. B. on smallwares looms, prepared or knitted, those one uniform Tissue structure and/or. Mesh education exhibit.

There is also already on single Locations amplified tissues prepared, as well as such, on particular locations as Double fabric formed is, whereby those amplifier acre kung by chemical treated textile threads, double thread guide about also to the formation of Patterns o. such. achieved became.

Is according to invention easy of shoes, in special athletic shoes, by the fact prepared that the shoe upper section out a tissue exists, that in continuous series follows from fabric strips more various from organization obtained becomes. This Gewebestrei fen corresponds in their formation for the finished shoe in everything its parts he properties at strength wished, Rigid industrial union keit; Elasticity etc. - . - . . ,. -- Those for the various are connected that Fabric strip desired fabric-own shanks can become by the fact achieved that the web at the particular locations is multilayer formed. Can do also on particular locations of the tissue hard or curable threads introduced its, of them Layer, number and starch itself after that in each case desirable properties of the respective shoe part arranges. In particular for the caps can certain parts of the continuous tissue also as hollow one fabric to be.ausgebildet, or z can do. B. the upper and lower layers of the Ge woven at particular locations remain unconnected. Into the so resultant cavities are then reinforcing materials eingescho ben, those that Front and/or. Hinterkappe those desired strength lend, without pressure points or injuries can form by scrubbing.

The tissue, those Cuts or also the finished shoe can to the achievement steifung on particular locations a after treatment to be submitted, itself after that used Fabric or properties that sonderen Reinforcement arranges. Those Post treatment can do one chemical its or z. B. by pressure or warm one pursue. By the Nachbehand lung can simultaneous its, impregnation, densities or an other condition change of the tissue achieved become.

Those. - .einzelnen_ shoe cuts become from the corresponding woven Webs - out. cut, whereby already with that. G: ewebe barking _aüf those I.age_ that single sammenhängenden and to together-weave Fabric strip in _Bezug on the arrangement of the shoe cuts Regard taken is.

By this Manufacturing method becomes the advantage achieved that on that whole Wide one a tissue corresponding many same Shoe cuts prepared to become to be able. The arrangement that singlenew Shoe cut possible a good Utilization the tissue smallest Waste. Those Thrust cuts are perfect for those Outer one. - bringing the

sole finished, and it is only, one Seam at that Hinterkappe required. Leave itself shoes of each size through speaking ent Choice of the thread arrangement ago place, and z can do. B. also patterns, Knowing marks o. such. for those single shoes in the finished Web printed or otherwise applied become.

On that Drawing is execution with play of the Invention article wiederge give, with that those eilnen Shoe cuts in particularly convenient white ones up its continuous Web arranged are.

Fig. i shows one schematic Crosswise cut through those in Abb. 2 in its top view web posed; on that those Days that single Shoe cuts indicated is.

Abb..3 shows : one Part of the Cross section after Abh. i with indication: one example-wise Formation that single are connected that. and together-woven Fabric strip.

Abb, 4 gives a finished Shoe again. Those Web i places a together suspended Tissues, however from separated bound and equipped: Strip 1,< B> 11< /B> and III existence. These strips become convenient so. arranged, that out them more continuous, thus out one Piece: more existing Shoe upper section cut become Tann, with then. those Strip, 1, IR and< B> 111< /B> because of the locations are, at those, their various Embodiment entspre. chend, those desirable properties at that finished shoe in Step appearance can.

With the represented Embodiment is those Arrangement so, met. that. those Shoe upper sections A, 3, 4 and 5 with their, Cap member so anessnanderhegen; that those. Ge. honeycomb course i as rationally as possible utilized is.

Here the fabric strip is 1 as hollow one fabric _ formed, there it to Preparation that Hinterkappe serves. Over, those Rear cap too reinforce, can into that Cavity: 6 between that Fabric upper and - lower layer 7 and & Reinforcement material eiugescheban: or eiagew--bt. become. The fabric strip I goes into the strip II over, with the represented Ausfüh rungsbeispiel to the formation of the Sheet and that Shoe side parts certain is. Dementia speaking is the tissue of the strip II elastic and multilayer formed. The fabric strip IL goes into the fabric strip III over, which is in present cases to image dung of the Vorderkappe formed. that. drawn Embodiment are those Shoe upper sections A, 3, and 5 with their Tip portion so together-placed, that the whole Freite of the Strip III to Preparation that Vorderkappen used will can.

The strip III goes then again in one Strip II over, at which itself that Ge weave-mature 1 without Interruption and in corresponding formation attaches.

In this way form two strips I, two Strip II and a strip III one GeweberapportA. For the preparation one Shoe becomes, thus . half Rapport =1/2 A (Abb.3) required. So many can do RapporteA next to each other simultaneous provided becomes ago, how this the width of the used loom permits.

Those Compound that single Gecvebe laminate one multilayer tissue can in more arbitrary Manner take place; it becomes however convenient, like z. B. out Fig. 3 it obviously, already with. Woven even herge places.

With this tissue the layer places; the perfect uniform and smooth Upper the flat tissue i and/or. the finished shoe. To Stiffener tissues of the strip III and/or. the layer 8 of the Fabric strip I are in the tissue Reinforcement threads g. introduced, the z. B. for those En steifung the Hinterkappe in most Cases to be sufficient might. This Verstei fungsfäden are more.entweder from hard Material prepared, like z. B:. those so called Sirius RTI ID= " 0002,0239 " WI= " 10 " HE= " 3 " LX= " 1218 " LY= " 1835 "> threads. It can also with Cellulose in prägniert and later curable its. It roughened, also, if a stiffener of this Strip desired becomes, in the strips II Reinforcement threads introduced become.

Exist those Reinforcement threads out post träglich curable Materials, then can these into one so large number into the Ge woven introduced become, that with the Här tung, - both in Fabric and with finished shoe made become: can, beside that Reinforcement threads located Textile threads along-impregnated and thereby along are reinforced, so that one dense zusam menhängende Fabric layer develops. Can do also only certain threads of the Shoe fabric z. B. out Hard yarn prepared or later more curable its. Up this Manner leave themselves all parts of the shoe in desired in each case Rigidity manufacture.

Those Mounting of the shoe soles i o (Fig. 4.) made after the prior art methods, and it become also tying holes i i, C) sen etc. in more known Manner at the shoes ange broke. Those single shoe upper sections become with the drawn Embodiment at the Hinterkappe together-sewn.

The distribution that : single cuts 2 to 5 on the web i arranges itself depending upon the size of the shoes which can be manufactured, on which already with the structure of the tissue regard taken becomes. Corresponding one can the sample print for those Shoes in whole piece made become, like it also possible are, simultaneous with out punch corresponding cap or Side divide with punched Zieröffnungen to see.

planar, athletic shoes leave themselves also different N< B> N< /B> Pieces of footwear, like z. B. Sandalen, Lower jaws, Covering shoes etc., with those particular locations to be reinforced are, manufacture in the described manner. Out Fig. q. the arrangement of the fabric strips is I, II and III apparent.

CLAIMS: i. Method to the preparation of shoes also Fabric upper section, thereby ge marks that the shoe upper section out one Tissue prepared is, .in away current sequence out in thickness and Rigidity for those Formation that front one cap, the sheet, that Side portions and that Heel cap suitable, continuous prepared Fabric strip exists. 2. Process according to claim i, thereby characterized that for the Herstel lung that various, continuous prepared Fabric strip desired strength and Rigidity through more schichtige formation of the tissue it is enough is. 3. Process according to claim i and 2, thereby characterized that into that sammenhängende Tissue on certain Locations hard or curable Reinforcement threads introduced are. q. Process according to claim i to 3, characterised in that the zusam menhängende tissue z. B. to to Formation of the caps certain parts as hollow fabrics formed is. 5. Process according to claim i to g 1, there through characterized that certain Ge weave-hurries or the finished shoe to steifung a post treatment to be submitted, those that Material or the type of the reinforcement threads, the desired Rigidity of the Tissue, that Material of pushed in Inserts o. such. ent speaks.

# WO9003744

Publication Title:

HEAT EMBOSSED SHOES

Abstract:

Abstract of WO9003744

A labor-saving shoe making process provides multilayered, heat embossed, shoe components including a one-piece upper. The components comprise a resilient foam layer and other layers for flexibility, strength and durability. Embossing of the shoe components serves to reduce the thickness of the material, provide sealing of the material, provide form and shape to the shoe, and allow strain control management. The connecting of shoe components is accomplished in part through the use of thermoplastic rivets which are heated and melted by the application of a high frequency field.

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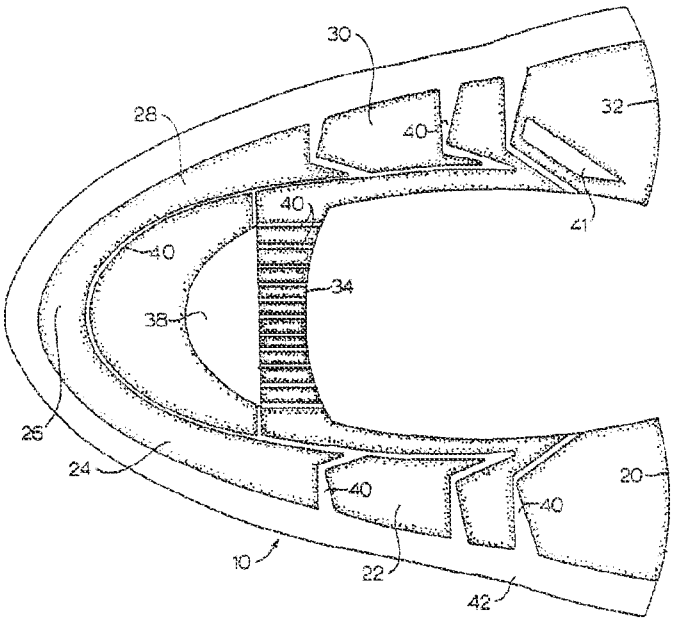
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(54) Title: HEAT EMBOSSED SHOES




(57) Abstract

A labor-saving shoe making process provides multilayered, heat embossed, shoe components including a one-piece upper. The components comprise a resilient foam layer and other layers for flexibility, strength and durability. Embossing of the shoe components serves to reduce the thickness of the material, provide sealing of the material, provide form and shape to the shoe, and allow strain control management. The connecting of shoe components is accomplished in part through the use of thermoplastic rivets which are heated and melted by the application of a high frequency field.

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# HEAT EMBOSSED SHOES

## Background of the Invention

The process of shoe manufacturing is generally very labor intensive and the most expensive component of the manufacturing process today is labor. For a particular shoe style, after the pattern is made for all sizes and the production schedule of manufacturing steps is determined, the labor-intensive assembly process occurs. The assembly process for a shoe having its specific design and number of pieces begins with the process of cutting the upper material. With a more complicated shoe pattern or with more pieces in the shoe design, more elaborate cutting procedures must be designed to minimize waste of materials.

In a typical shoe manufacturing process, after the upper pieces are cut, they are prepared for stitching in the fitting process. The upper pieces are first marked for stitching. The edges of the pieces that are to be joined to other pieces must be reduced in thickness in the skiving process in which a machine cuts a bevel on the edge of the material on the flesh side, or underside of each piece. Some or all of the upper parts, particularly thick leather uppers, may also need to be reduced in thickness or made more even in thickness by a "splitting" machine. Each of these steps requires handling of the individual upper pieces and skilled manipulation to achieve the desired change in the upper.

After the upper pieces are prepared by skiving and splitting, in a typical process, the interlining is cemented to the upper in the doubling process to add thickness and to improve the comfort and smoothness of the interior of the shoe. This requires careful

alignment of the interlining and the upper. To further improve the comfort and to add strength, the insides of the seams are often "rubbed" to reduce their bulk and then reinforced with fabric tape that is adhesive coated. Similar fabric tape is also often applied to the edges of the uppers that are around the top of the shoe opening. Each of these top edges as well as other visible edges may also have cement applied to them prior to folding them into a narrow fold and heat-cementing or stitching the fold in place to provide a neat appearance to the edge.

If the shoe has eyelets, these are applied by a machine that punches, spaces, and aligns the holes and sets the eyelets in the appropriate place. The eyelets then are laced by a machine with thread so that the piece(s) are held in the correct position in the subsequent steps.

The upper pieces are stitched together after or during the fitting process depending on the manufacturing steps for the particular shoe. The stitching process may be by machine or by hand and may include reinforcement stitching at the front corners in laced shoes and decorative stitching.

In the final segment of the traditional shoe manufacturing process, the uppers are then shaped over a last (a shoe form shaped like a foot). A variety of lasting techniques may be used to assemble the upper and interlining over the last and to fasten them to the insole. In this process the heel, toe and side portions of the shoe upper are pulled into place around the last so that they are in the desired shape of the final shoe product. The shoe upper may then remain in that pulled position for several days to set the shape.

Alternatively, the position of the upper may be set by a heat setting process. The bottoms of the shoes are added in the "bottoming" process by cementing, molding or sewing. Laces are then added and the product is boxed and warehoused.

Summary of the Invention

Provided with the present invention is a component of a shoe comprising a multi-layered material embossed in a manner which serves several functions, including but not limited to closing or sealing of edges, incorporation of functional design or pattern lines to facilitate flexing for contouring to maintain shape, and for strain management. The embossing seals the layers of the material together at the edge and reduces the thickness of the material in the embossed regions. One layer of the multi-layered material is a breathable porous foam which, when subjected to heat, or other forms of fusing energy, becomes viscous to a point that an internal bonding of the foam cell matrix is accomplished.

The shoe component is any one of a number of different elements of the shoe. Possible components include an entire one-piece upper or overlay portions. The shoe component may have embossing away from the edges of the material, such as embossing to facilitate design or pattern. Such embossing serves to control shape and texture of the shoe component, and may additionally serve to provide specific strain performance factors in end use application.

Also provided in the present invention is a method of fastening together portions of a shoe. The method involves aligning the shoe portions and inserting a thermoplastic connector through the material of the shoe

portions. The thermoplastic connector is then subjected to sufficient energy to soften the thermoplastic connector. The shape of the connector is then deformed such that when it hardens its new shape restricts the shoe portions from separating from one another.

The first thermoplastic connector may be inserted through a second thermoplastic member as well as the aligned portions of the shoe. The connector may be subjected to a high frequency electromagnetic field of sufficient energy to melt the two pieces of the connector to the point that they adhere to one another, thus securing the shoe portions together.

Brief Description of the Drawings

Figure 1 is a sectional perspective view of the layered upper material prior to heat embossing.

Figure 2 is a sectional perspective view of the layered upper material after heat embossing.

Figure 3 is a plan view of a first embodiment of an embossed pattern for an upper.

Figure 4 is a plan view of a second embodiment of an embossed pattern for an upper showing one side of the upper.

Figure 5 is a plan view of a third embodiment of an embossed pattern for an upper.

Figure 6 is a plan view of a fourth embodiment of an embossed pattern for an upper.

Figure 7 is a plan view of a fifth embodiment of an embossed pattern for an upper.

Figure 8 is a perspective drawing of a shoe made from the first embodiment of the upper.

Figure 9 is a schematic drawing of placement of uppers in a multiple-upper cutting pattern.

Figure 10 is an elevational view of an embossing mold as used in the process of the invention.

Figure 11 is a partial sectional side view of the upper material on the bottom mold plate prior to embossing.

Figure 12 is a partial sectional side view of the upper material on the bottom mold plate after embossing.

Figure 13 is a perspective view of a mold used according to the process of the invention.

Figure 14 is a side view of a shoe having a quarter overlay secured by a thermoplastic rivet.

Figure 15 is a side view of the thermoplastic rivet of Figure 14.

Figure 16 is a plan view of a one-piece upper used in the shoe of Figure 14.

Figure 17 is a side view of a shoe having a quarter overlay, a forefoot stabilizer, and a tougue secured by thermoplastic rivets.

Figure 18A is a plan view of the one-piece upper used in the shoe of Figure 17.

Figure 18B is a cross section of Figure 18A.

Figure 19A is a plan view of two quarter overlays of a thermal plastic urethane material.

Figure 19B is a cross section of Figure 19A.

Figure 20A is a plan view of a forefoot stabilizer of a thermal plastic urethane material.

Figure 20B is a cross section of Figure 20A.

Figure 21A is a plan view of two quarter overlays of a heat embossed foam/fabric material.

Figure 21B is a cross section of Figure 21A.

Figure 22A is a plan view of a forefoot stabilizer of a heat embossed foam/fabric material.

Figure 23A is a perspective view of a thermoplastic fastener.

Figure 23B is a side view of an unfolded thermoplastic fastener.

Figure 23C is a rear view of a shoe upper partially fastened at the heel by a thermoplastic fastener.

Figure 24 is a side view of a casual shoe embodying the present invention.

Figure 25 is a plan view of a main upper portion used to form the shoe of Figure 24.

Figure 26 is a plan view of a quarter overlay in the shoe of Figure 24.

Figure 27 is a cross sectional view of the overlay of Figure 26 taken along line 27-27.

Figure 28 is an alternative quarter overlay.

Figure 29 is a side view of a shoe using the upper of Figure 28.

Detailed Description of the Preferred Embodiments

The present invention comprises a method for making shoes and shoe components and the shoes and shoe components made by this process.

Most types of shoes may be made with the method of the invention. Thus, flat heeled shoes, high-heeled shoes, and shoes with buckles, straps connected to both sides of the shoe and extending across the top of the foot, lacing, velcro attachment straps or other fasteners may be made with the process of the invention. Additional decorations or cut outs may also be added to the basic show pattern.

As shown in Figures 1 and 2, the upper 10 is preferably comprised of a plurality of layers and most preferably of three layers. Additional layers may be

added for durability or strength. A process known as a combining process which is well known in the footwear manufacturing field, may be used to make a layer of fabric adhere to each side of a foam core 12 layer. In the preferred embodiment, the layers are held together by neoprene cement. The bottom sheet (lining) is placed in a mold and coated with cement and then the foam layer is placed on the lining. Finally, another layer of cement is applied and the fluid layer is added. The mold is then closed to press the layers together. Other methods of layer formation may be used.

In a preferred embodiment, the layers are held together by adhesive systems of a thermo-set (cross-linked) nature. However, adhesives in the thermoplastic family may also be used providing they exhibit melting properties in excess of the process temperatures associated with the other components of the material. Alternatively, flame lamination techniques can be used which eliminate the need for adhesives altogether.

A preferred core material 12 is a foam product of the polyurethane family of an ether origin (i.e. polypropylene glycol), which is treated with a diisocyanate in the presence of water and catalyst agents. Density of preferred foams run 1.5 - 4.0 lbs/ft but foams of higher and lower density have application in some end use catagories. Many foam core materials originate from variations inside of the polyurethane family. Others utilizing polymer backbones which fall outside the polyurethane group can also be used as core materials.

In one preferred embodiment, the outer layer is a warp knit fabric classified as "tricot." The term refers

to a fairly wide range of finished goods, some of which are acceptable in a shoe molding process, and some which are not. In particular, two bar knits such as full tricots and warp lockknit have shown particularly good characteristics with regard to the molding process as well as end use.

In another preferred embodiment, the outer layer is a weft knit fabric of jersey, rib, or purl designation. Variations of the jersey designation show particularly good properties due to their dimensional equality in elasticity. Many other variations of weft knitted fabric have also shown good success in the process and end use.

In still another preferred embodiment, the outer layer is of the woven classification. In utilizing woven structure fabrics in the fabrication process, success is more dependent upon yarn schemes than in knit fabrics. While a characteristic of knitted structures is fabric stretch or elasticity, wovens possess lower stretch values due to the somewhat linear relationship between fabric and yarn width/length. Therefore, in utilizing woven materials in the process, it is necessary to focus on yarn elasticity properties. Methods of incorporating elasticity in yarns are well known and may include texturing or using bi-component or bi-constituent yarn or fiber.

A different preferred embodiment uses an outer layer made of a product of the leather designation. Such leathers may be derived from cow, steer, bull, water buffalo, pig, calf, etc. Hides can be tanned by methods which produce leather products compatible to the shoe fabrication method of the present invention. Considering the durability of general leather products, a property necessary to use leather successfully is

multi-directional extension with a low corresponding loss of basic strength properties such as tear. In one application, this is accomplished by splitting the leather hide down to relatively low gauge (0.4 - 0.6 mm.) and laminating the resulting veneer to a substrate of substantial properties. Substrate nomination is contingent upon final component requirements.

In another preferred embodiment, the outer layer is of synthetic polymer products such as polyurethane, P.V.C., or synthetic rubbers, in either cellular or solid state. Industrial processes may be used to to fabricate products that use synthetic skins or coatings on a fabric substrate. Two such methods used extensively in the industry are "wet" and "dry" processing. Because of their low cost, such materials can be engineered in a multitude of methods to produce a wide range of physical properties and appearances.

Considerations governing choice of inner and outer layer materials include embossability of the outer layer, which includes scorch resistance to heat but also requires ability to take the embossing and retain the form in conjunction with the foam layer; sufficient tear strength of one or both layer; comfort of the inner layer; durability of both layers; appearance of the outer layer; and flexibility of both layers.

The uppers 10 are cut from the embossed, layered material using a variety of methods. These include, but are not limited to, standard knife edge die, knife edge gang die, dual function mold/die method, automated vertical die cutting, automated roller die cutting, automated laser method, and template/guide automated cutting. The die or template may be designed to cut one or more uppers at a time.

One example is the spacing of four upper patterns 18 as shown in Figure 9 on a single cutting die or template guide will allow interlocking of the patterns on the upper material and will minimize material waste. Generally, a square sheet of material about the size of the mold is used. After embossing, the embossed sheet is demolded and the molded upper is then cut out of the square sheet. A gang cutting die with a template guide is generally used for a multi-cavity mold.

The shape of the upper 10 is constrained by the shape and size of the foot but may be designed for a wide variety of shoe styles. As shown in Figure 3, beginning on one side of the shoe, the one-piece shoe upper 10 extends in a "U" or "V" shape from a first central back side 20 of the upper to a first shoe side 22 to the first side front 24, to the toe area 26; and then the second side extends in mirror image to the first side from the toe area 26 to the second side front 28, the second shoe side 30 and the second back side 32 of the upper 10. The dotted line in Figures 4-7 show the central point on each side of which the shape of the shoe is a rough mirror image of the other side, the difference between sides being that the shoe side 22 or 40 which is on the inside of the foot may be cut with a small indentation or other variation to assist in lasting the side of the shoe that will be on the inside of the foot. A strap 34 may extend over the top of the foot connecting the sides 22,30 or the side fronts 24, 28 (Figures 3 and 4); or each side may have a laceable strap 36 (Figures 5 and 6) or a strap from the other side. The upper 10 over the top of the foot may be solid without a cut away area 38 or there may be no strap(s) at all (Figure 7).

Before the layered material is cut (trimmed), it is placed in a heat molding press to emboss a design 40 on the material and to flatten the edges 42. The embossing process heat-fuses the edge seams including the upper edges 48 thus making the multi-layered material totally enclosed without stitching the edge seams and thus enables the labor-saving use of the one-piece upper.

Embossing 40 in the toe area 26 and side fronts 24,28 (Figure 3) helps maintain the toe box shape and embossing lines 40 on the strap 34 help curve the strap across the instep. Additional embossing adds to the rigidity of the shoe upper so that it better retains a desired shape. All of the embossing may be shaped for aesthetic styling. Edge 42 is the lasting margin that is lasted under during the lasting process. A logo may be placed on the shoe in a logo area 41 embossed on the shoe. The design may be formed on any portion of the shoe. In Figures 3-7, a variety of side designs are shown. The design may extend across the strap 34 as shown in Figures 3-4. It is important to note that the heat fusing and embossing of a design on natural materials such as cotton or leather as well as on nylons, polyesters, and other synthetic materials to form a three-layered laminate shoe upper is a unique and important aspect of this invention.

Embossing additionally serves to manage strain in end use. Since embossing lines are used extensively to create designs and patterns, it is possible to use these points, or add additional points which become part of the design pattern. This embossing then serves to control upper component strain by "locking off" outer shell or substrate fiber length. This technology serves to provide the shoe designer with unlimited control over

shoe upper end use dynamic properties, by allowing extensive adjustment of specific modulus properties in locations of stress and associated strain. For example, it is well known that basketball shoe top collars which are properly functional stretch to a degree to allow the wearer a snug fit around the lower portion of the leg when fully laced. However, the shoe portions known as the in/out quarters, when properly engineered, require stretch properties which are considerably less than those of the top collar. By using the described method, a shoe designer may make function an inherent part of the shoe design. The method allows function to be incorporated into the shoe in the fabrication step itself.

A typical embossing mold 100 which is used in the process of the invention is comprised of hydraulic cylinders 102 and 104 that drive a top press plate 106 against a bottom press plate 108, while mold 110 is located in between (Figure 10). Both of the press plates 106,108 contain heating elements 112 and 114. The heating elements 112,114 heat the press plates 106,108 which in turn heat the top mold plate 116 and the bottom mold plate 118 to the desired temperature. It is important to note that it is possible to use different temperature settings between the top press plate 106 and the bottom press plate 112 during the molding operation. This allows the top mold plate 116 to be either a higher or lower temperature than bottom mold plate 118 of mold 110 during the same molding process, thus allowing a more heat sensitive material such as thermoplastic urethane or PVC to be used on one of the surfaces.

For example, Figures 11 and 12 show partial cross sections of mold 110 and an upper prior to and during the embossing process. The use of mold alignment pins 120 on

one of the mold plates as shown in perspective view in Figure 13 and mold pin alignment holes 122 enables proper alignment of the mold plates 116, 118. If outer layer 14 happens to be a heat sensitive material such as PVC, mold press plate 106 may be set at a lower temperature so as not to heat top mold plate 116 above the softening point of layer 14. The temperature of bottom mold plate 118 may or may not need to be increased to compensate for the lower temperature of top plate 116 in order to achieve the proper heat fusing of layers 14 and 16 to foam core 12. After the desired heating time, the top press plate 106 is raised and the embossing mold 110 is removed. The embossed, molded upper is removed and is ready for trimming of the excess material. In a preferred method of the invention with polyurethane foam, a three minute heating cycle at 200 degrees C is used. This temperature, in the presence of molding pressure, is adequate to accomplish internal cell wall bonding. Such bonding is a consequence of the heat and pressure which renders the cell matrix viscous to a point of internal tack. This internal tack accomplishes setting of the areas of embossing. Although the heating of the foam is likely to be to a temperature less than its melting temperature, the embossed regions are here referenced as melted regions. Leather products, fabrics of natural and synthetic fiber, and synthetic material of P.V.C or polyurethane in combination with the foam can withstand this heating treatment without distortion or degradation of original physical properties.

As an alternate method of embossing, ultra-sonic or high frequency welding techniques could be used for embossing materials such as certain plastics that are not porous or discontinuous and have the requisite

characteristics to enable embossing upon exposure to the high frequencies. High frequency heat is produced by using a transformer to raise the main voltage, a rectifier to change alternating current to direct current, and an oscillator valve to stop and start the current at speeds of about 28 million cycles per second or greater, to establish a field between two metal plates.

High frequency heating differs from radiant and conducted heat in that the temperature is raised uniformly throughout a material without a necessary waiting period for heat to spread from an exterior heat source to the interior of the material. In using high frequency heating with the invention an oscillating electronic field is created between two surfaces between which is positioned the upper material. Exposure to this field results in movement of the molecules in the upper and uniform generation of frictional heat throughout the upper. The use of a high frequency heating field plus pressure from the protruding portions of a mold result in the embossed design on the upper. The mold may also be used to cut the perimeter of the upper by having a raised edge around the outside edge of the mold.

High frequency welding with a welding die also may be used to fuse two pieces of material, such as the two back edges of the upper, or to add extra components to the upper (such as a tongue, trim, buckles, etc.). High frequency (HF) welding is particularly suited to such materials as PVC and would allow the fusing of color pigments or appliques to the embossed areas.

After the upper 10 is completely embossed, a back strip 44 is attached to the back sides 20, 32 of the upper 10 using stitching methods known in the art as

shown in Figure 8. The back strip 44 may be a straight narrow strip of 3/8 to 1/2 inch width and approximately double the length of the backside so that it may be sewn to both the inside and outside of the back shoe seam forming a fold 46 at the top edge 48 of the shoe 50. Alternatively, the back strip 44 may only be placed on the exterior to the shoe 50. The back strip 44 may also be decoratively designed in color and/or shape. If the back strip 44 is omitted, an alternative method of attaching the back sides of the upper, such as overlapping the back sides and stitching, or heat embossing the two sides together may be used.

According to a method of the invention, the shoe 50 is lasted with any of several conventional techniques. Preferably, of these techniques, cold cement lasting is used because it is the simplest lasting method and is less costly than others, but California lasting (full sock lasting) may also be used. The insole board that is used is preferably made of non-woven, cellulose base fiber board prepared by conventional techniques, but it may be made of other hard or soft fiber lasting boards. The sock liner preferably is made of Tricot-covered rubber sponge, but it could be made of any fabric-covered cushioning material. When the shoe is lasted, lines A and B are aligned in parallel in shoes with a strap 34 (Figure 3).

Following attachment of the back strip and lasting, the bottom 52 of the shoe is attached, preferably by a cementing method. Cold cementing is preferably used because it is inexpensive and simple. The bottom 52 is preferably made using molded ethyl vinyl acetate (EVA) by methods known in the art; however cut EVA may be used as may thermal plastic rubber. Other bottoming methods that

do not entail the cement process may be used. These would require "direct-attached" polyurethane or thermal plastic rubber. Both of these latter techniques require California lasted shoes.

A preferred embodiment of the invention involves preparation of a three layered upper having an outer layer which is a warp knit, weft knit, woven fabric, leather product, or synthetic coated material. The central layer of the material is a polyurethane foam, and the inner liner may be any one of a number of materials. The laminate is heat embossed at 200 degrees C for approximately three minutes, after which the backsides of the the upper are attached together by means of stitching to a back strip. The upper is then lasted and attached to the bottom of the shoe by cold cementing or other conventional means.

A number of different components of a shoe may be made using heat embossing methods such as those previously described for the one piece upper. The heat embossing of shoe components is decorative as well as functional in several ways. For a multi-layered material having a layer of porous foam such as polyurethane foam, the heat and pressure of the heat embossing selectively causes the inner cell wall matrix to become viscous to a point that the resulting tack is adequate to accomplish bonding. Thus, when heated, the polyurethane foam becomes a strong bonding adhesive which adheres firmly to surrounding material. For a material having the foam as a central layer between two outer fabric layers, the embossing serves to firmly seal the three layers together. The shoe components of the present invention are embossed along the edges and are thus sealed along

the edges, removing the need for any edge stitching to hold the material layers together.

Another function of the heat embossing is to reduce the thickness of the material in the region of the embossing. Since shoe components are often joined at the edges, it is desireable to have the edges relatively thin compared to the rest of the material to prevent from forming an unusually thick region of the shoe where the connected shoe components overlap. Heat embossing along the edges of a shoe component provide this thinner region without the necessity of skiving, which is the traditional method of edge thickness reduction.

Shown in Figure 14 is a side view of a typical shoe 130 made with a heat embossing process. The shoe 130 has a heat embossed upper 132 and a quarter overlay 134 which is also heat embossed. The edges of the overlay 134 are embossed to reduce and seal them, while a more central region 135 of the overlay is embossed to hold eyelets 136, which in turn hold the laces of the shoe 130. The overlay 134 is stitched to the lasting margin of the upper and may be additionally secured by a thermoplastic rivet 138. During assembly, the two-piece rivet 138 is passed through aligned holes in both the overlay 134 and the upper 132.

A side view of thermoplastic rivet 138 passing through two pieces of material 139,141 shown in Figure 15. Front rivet plate 140 has two pins 142 which fit into the receiving holes 146 of back plate 144. Heating of the thermoplastic rivet 138 causes the two pieces of the rivet to melt and bond together forming a secure, permanent connection. This heating is preferably done with a high frequency electromagnetic field, which is particularly good for providing uniform heating of the

thermoplastic material. Alternative heating methods such as ultrasonic heating or thermal welding may also be used. The pins 142 of the front plate 140 of the rivet 138 may extend through holes 146 and beyond the rear surface of back plate 144. In such a case, pressure applied to the back of the rivet 138 during heating then causes the end of the pins 142 to spread and flatten out along the rear surface of the back plate 144. Thus when the rivet hardens, the pins 142 are even further prevented from moving back through the holes in the back plate 144.

Using certain thermoplastic materials, the thermoplastic rivet 138 may alternatively consist of just the front plate 140. Once the pins 142 pass through the material to be joined, they are heated and the pins 142 are flattened out to restrict the rivet 138 from passing back through the material. Such a deformation of the rivet 138 may be accomplished through the use of a pressure device which applies pressure to the rivet 138 during heating.

Figure 16 shows a plan view of the upper of the shoe in Figure 14. Quarter region 148 is embossed flat to provide a seat for a quarter overlay 134. The lasting margin 150 is also embossed to seal the edge and to reduce the thickness of the lasting margin 150 without skiving. The upper is shown with one of two quarter overlays 134 in place. The other quarter overlay is left out to show the quarter region 148 of the upper, which is embossed flat to accomodate an overlay 134. Embossing this region 148 prevents the shoe from being abnormally wide in the overlapping quarter region of the shoe. Rivet holes 149 are also shown in both the upper 132 and the quarter overlay 134.

In Figure 17 is shown a shoe 152 having an upper 153 and a number of overlay components. A heel stabilizer 154, a quarter overlay 156, and a forefoot stabilizer 158 are each attached to the shoe 152 during a bottoming process. A tongue 160 is also included, and both the tongue 160 and the forefoot stabilizer 158 are attached to the vamp 162 of the upper by way of a thermoplastic rivet 164. In this case the rivet 164 serves to secure both the tongue 160 and the forefoot stabilizer 158, thus providing an economical use of connection elements.

The overlay components 154,156,158 of the shoe 152 of Figure 17 are preferably made by an injection molding process using materials such as thermoplastic elastomers, or in some cases engineering thermoplastics. Some alternatives to the injection molding method include flow molding, casting, and extrusion process. The molded overlays are easy and inexpensive to produce and add support and aesthetic value to the shoe. Other materials such as the foam/fabric material of the upper or a natural material such as leather are also used as overlay material. A combination of different overlay components of different materials is often used on the same shoe.

Both the tongue 160 and the upper 153 of the shoe 152 are formed of a material with a central resilient foam layer. Heat embossing seals and reduces the material in selected areas. Figures 18A and 18B show a plan view and a cross sectional view, respectively, of the upper 153 of Figure 17. The lasting margin 156 of the upper 153 is embossed. Futher embossing of the upper 153 provides seats for the overlays shown in the assembled shoe of Figure 17. Since the non-shaded portions of Figure 18A are the regions depressed by heat embossing, it is apparent that the embossed regions seat

the heel stabilizer 154, the quarter overlay 156, and the forefoot stabilizer 156 perfectly. The cross section of Figure 18B shows the relative thickness difference between an embossed region 168 and a non-embossed region 170 of the upper 153.

Figure 19A is a plan view of the quarter overlays 156 and 156' of the shoe 152 of Figure 17 (overlay 156' is not shown in Figure 17). It can be seen from this view that the injection molded components are fabricated in a manner to reduce thickness gauge in the bottom region. These portions of the overlays are turned under during bottoming of the shoe, and it is therefore advantageous to have the thickness reduced in these regions 172. Figure 19B is a cross section of one of the quarter overlays 156, 156' and shows the difference in thickness in different regions of the TPU material. Much of the molded pattern is decorative, but it additionally serves to allow a certain degree of bending movement to the overlay. The mold also gives shape and texture to the surface of the overlay.

Shown in Figure 20A is a plan view of the forefoot stabilizer 158 of the shoe 152 of Figure 17. Like the quarter overlays 156, 156', this particular forefoot stabilizer 158 is made of a TPU material. The forefoot stabilizer is made flat in a central region 174 and at the ends 176 of the extending portions 177. Molded lines 178 in the remainder of the material provide texture and improve bending properties in this region. Holes 180 in the central region 174, support the pins 142 of thermoplastic rivet 138. The cross section of Figure 20B shows the difference in thickness between the different regions of the forefoot stabilizer.

Figure 21A is a plan view of an alternative embodiment of the quarter overlays 156 and 156' of Figures 17 and 19. Quarter overlays 180 and 180' still fit within the recessed regions of the shoe upper 153 of Figure 17, but are made of foam/fabric material instead of a TPU. The foam/fabric material is like that previously disclosed for the upper, and is embossed along the edges to seat the material. The quarter overlays 180 and 180' are also embossed at the bottom portions 182 and in the eyelet regions 184. The eyelets (not shown) are mounted in the regions 184, and the bottom portions 182 are attached to the lasting margin of the upper 153 prior to bottoming of the shoe. The raised non-embossed central regions 186 of the quarter overlays 180, 180' are instrumental in keeping the shape of the overlays. A cross section of one of the quarter overlays is shown in Figure 21B. From this cross section the thickness difference between the embossed and non-embossed regions of the foam/fabric material is apparent.

The forefoot stabilizer 188 of Figure 22A is similarly shaped to the forefoot stabilizer 158 of Figures 17 and 20, but is made of the foam/fabric material. The forefoot stabilizer 188 is embossed in the bottom regions 190, in the eyelet regions 192, in the rivet region 194, and along the edges. The embossing along the bottom region 190 allows proper attachment to the shoe upper. The embossing in the eyelet regions 192 provides a flat region for attachment of the eyelet (not shown). The embossing in the rivet region 194 provides a flat, recessed region in which the rivet 164 fits, passing through rivet holes 196. The raised, non-embossed region 198 gives shape and texture to the surface of the forefoot stabilizer 188. A cross section

of the forefoot stabilizer is correspondingly shown in Figure 22B.

Figures 23A-23C show a folding thermoplastic fastener 200 designed particularly for binding together the left and right heel portions of an upper. The fastener 200 is shown folded up in Figure 23A and partially unfolded in Figure 23B. Two rows of pins 202 on fastener rear plate 204 align with the two rows of holes 206 on fastener hole plate 208 when the fastener is folded over. As shown in Figure 23C, the reduced areas of the heel portions 210 of a shoe upper 212 are punched with holes 214 which align with the pins 202 of the fastener 200 when the heel portions 210 are pulled together. The pins 202 of the fastener 200 are then pushed through the holes 214 of the heel portions 210. The fastener is then closed along a hinge between the rear plate 204 and the hole plate 208, such that the holes 206 in the hole plate 208 engage the ends of the pins 202 sticking through the heel portions 210. Once engaged, the fastener is heated to melt the pin/hole connections such that when rehardened they are permanently secured. Decorative cover plate 216 is hinged to hole plate 208 and is folded over to cover the pin/hole connections. The cover plate 216 has a lip which meshes with a lip on the hole plate 208 to keep it tightly secured when folded over and pressed into engagement with the hole plate 208.

As noted above, the embossing allows for control of stress, contouring and flexibility of various portions of the shoe. Figure 24 illustrates a women's casual shoe which utilizes such functional embossing. The shoe upper is formed of a one-piece upper, illustrated in Figure 25, and quarter overlays, one of which is illustrated in

thickness of the embossed lines 226 and 228 also allows bending along the embossing lines.

Figure 28 illustrates an alternative quarter overlay, and a shoe incorporating that overlay is illustrated in Figure 29. In this design, stretch from the eyelets to the sole is controlled by the horizontal embossing lines such as 236. Depending on the weave of the fabric layers, some stretching is allowed between the embossing lines. In this design, stretching from the eyelets to the shoe must be limited to a larger extent by the weave of the fabric than in the prior design, but the embossing lines allow for greater flexibility which allows the overlay to fold over the foot more readily.

The invention has great industrial applicability particularly in countries with a labor shortage or where it is essential to minimize labor costs to be competitive. The method of the invention may be used in the shoe manufacturing industry to make durable, attractive, inexpensive shoes through elimination or diminishing of most of the labor-intensive shoe fitting steps, such as skiving, multiple-piece stitching, prefitting, splitting, interlining, and edge taping.

While the invention has been described with reference to specific embodiments thereof, it will be appreciated that numerous variations, modifications, and embodiments are possible, and accordingly, all such variations, modifications, and embodiments are to be regarded as being within the the spirit and scope of the invention.

CLAIMS

1. A shoe comprising an upper portion formed substantially of resilient foam material sandwiched between inner and outer layers, the upper portion being embossed by melted, depressed regions of the foam.

2. A shoe as claimed in Claim 1 wherein the upper portion has an embossed lasting margin.

3. A shoe as claimed in Claim 1 wherein edges of the upper portion are embossed to seal said edges.

4. The shoe component of Claim 1 wherein the resilient foam material is a porous breathable foam which in the presence of heat and pressure transforms internally to a point that the inner cell wall matrix of the foam becomes viscous, providing sufficient tack to accomplish a bonding within the matrix.

5. The shoe component of Claim 1 wherein embossing of the shoe component provides a predetermined functional design pattern on the shoe component.

6. The shoe component of Claim 1 wherein embossing of the shoe component contributes to specific strain performance factors in the shoe component.

7. The shoe component of Claim 1 wherein the embossing of the shoe component contributes to the maintaining of the proper shape of the shoe component.

8. The shoe component of Claim 1 wherein the shoe component is a one-piece upper.

9. The shoe component of Claim 1 wherein the shoe component is an eyestay overlay.

10. The shoe component of Claim 1 wherein the shoe component is a quarter overlay.

11. A component of a shoe comprising a multi-layered material embossed along the edges of the material, the embossing sealing the layers of the material together at the edge and reducing the thickness of the material in the embossed regions.

12. The shoe component of Claim 11 wherein the multi-layered material includes a layer of porous breathable foam which in the presence of heat and pressure transforms internally to a point that the inner cell wall matrix of the foam becomes viscous, providing sufficient tack to accomplish a monogamous bonding within the matrix.

13. The shoe component of Claim 1 wherein the shoe component is further embossed away from the edges of the material.

14. A shoe comprising an upper portion having back sides, sides and a toe area formed from a single sheet of material, the material being selectively embossed relative to the shoe structure such that depressions embossed in the material help maintain a proper shape of the shoe.

15. A shoe as claimed in Claim 14 wherein the shoe comprises a depression curved about the toe area to separate upper and side portions of the toe area.

16. A shoe as claimed in Claim 14 wherein said upper portion comprises a strap formed between sides of the shoe, the strap having transverse depressions thereacross.

17. A shoe as claimed in Claim 14 wherein said upper portion has a depressed lasting margin.

18. A shoe as claimed in Claim 14 wherein upper edges of back sides and sides of said upper portion are sealed by depressions.

19. A shoe as claimed in Claim 14 wherein the sheet of material comprises a resilient foam layer sandwiched between inner and outer layers.

20. A shoe as claimed in Claim 14 wherein the said upper portion has a depressed lasting margin.

21. A shoe as claimed in Claim 14 wherein upper edges of back sides and sides of said upper portion are sealed by depressions.

22. A shoe comprising an upper portion having back sides, sides and a toe area formed in a single sheet of material, the sheet of material comprising resilient foam material sandwiched between inner and outer layers, the material being embossed by melted, depressed regions of the foam to help maintain the shape of the shoe, the depressed regions including a lasting margin and upper edges of the back sides and sides.

23. A shoe as claimed in Claim 22 comprising a depression curved about the toe area to separate upper and side portions of the toe area.

24. A shoe comprising a plurality of heat-embossed, multi-layered shoe portions fastened together with a thermoplastic connector, the connector passing through the material of the connected portions and being such that once heated it restricts separation of said materials.

25. A shoe as claimed in Claim 24 wherein the thermoplastic connector comprises a first member having pins which extend through the material being fastened together, and a second member having holes which engage the pins of the first member while they are extended through said material.

26. The shoe of Claim 24 wherein the shoe portions comprise the left and right heel portions of a one-piece upper.

27. The shoe of Claim 24 wherein the multi-layer composition of said shoe portions includes a central layer of porous foam sandwiched between an inner layer and an outer layer.

28. A method of making a shoe component, comprising:

fabricating the shoe component in a desired shape from a multi-layered material; and

embossing the shoe component in select regions, the embossing sealing the layers of the material together at the edge and reducing the thickness of the material in the embossed regions.

29. The method of Claim 28 wherein said embossing of the shoe component comprises embossing with heat.

30. The method of Claim 28 wherein embossing said shoe component comprises embossing with high frequency energy.

31. The method of Claim 28 wherein said shoe component comprises a one-piece upper.

32. The method of Claim 28 wherein said shoe component comprises a multi-layered material having an outer layer, a resilient central layer, and an inner layer.

33. The method of Claim 32 wherein said resilient central layer is a porous foam which when heated, melts to a bonding adhesive.

34. The method of Claim 32 wherein said outer layer and said inner layer are tricot.

35. The method of Claim 32 wherein said outer layer and said inner layer are woven cotton.

36. The method of Claim 32 wherein the outer layer comprises leather.

37. The method of Claim 32 wherein said central resilient layer comprises polyurethane.

38. A method of fastening together portions of a shoe, the method comprising:

aligning the shoe portions with one another in a desired fashion;

inserting a thermoplastic connector through the shoe portions such that the shoe portions are adjacent one another with the thermoplastic connector passing through each of them;

subjecting the thermoplastic connector to sufficient energy to melt the thermoplastic connector such that when rehardened, the connector restricts the shoe portions from separating from one another.

39. The method of Claim 38 wherein the thermoplastic connector comprises a first member having pins which extend through the shoe portions, and a second member having holes which engage the pins of the first member while the connector is subjected to the melting energy.



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40. The method of Claim 38 wherein the shoe portions comprise the left and right heel portions of a one-piece upper.

41. The method of Claim 38 wherein the shoe portions include a tongue.

42. The method of Claim 38 wherein the shoe portions include a portion formed of a multi-layer material, the material having a layer of porous foam, and heat-embossed depressed regions in the material.

43. The method of Claim 38 wherein the shoe portions include an overlay.

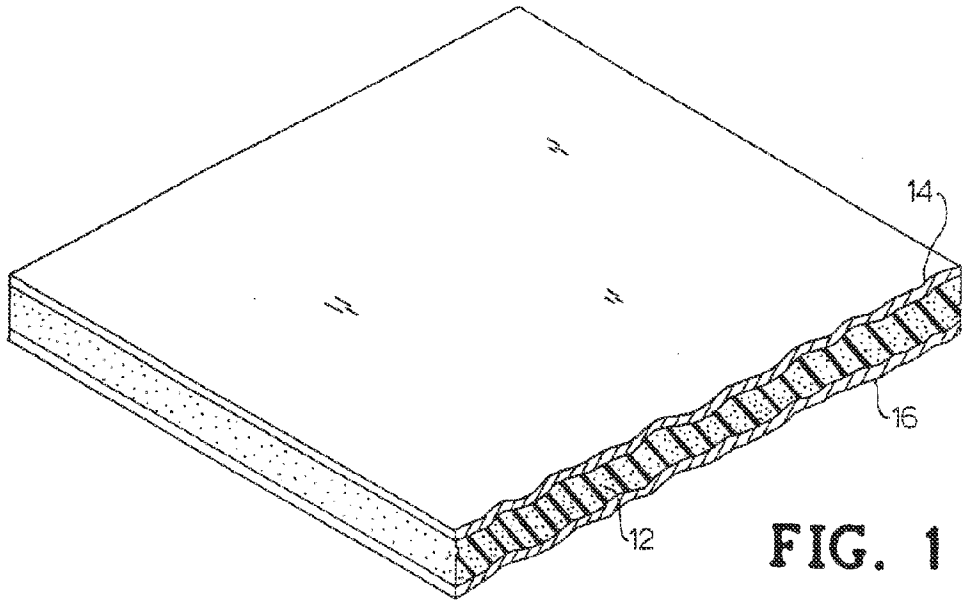



FIG. 1

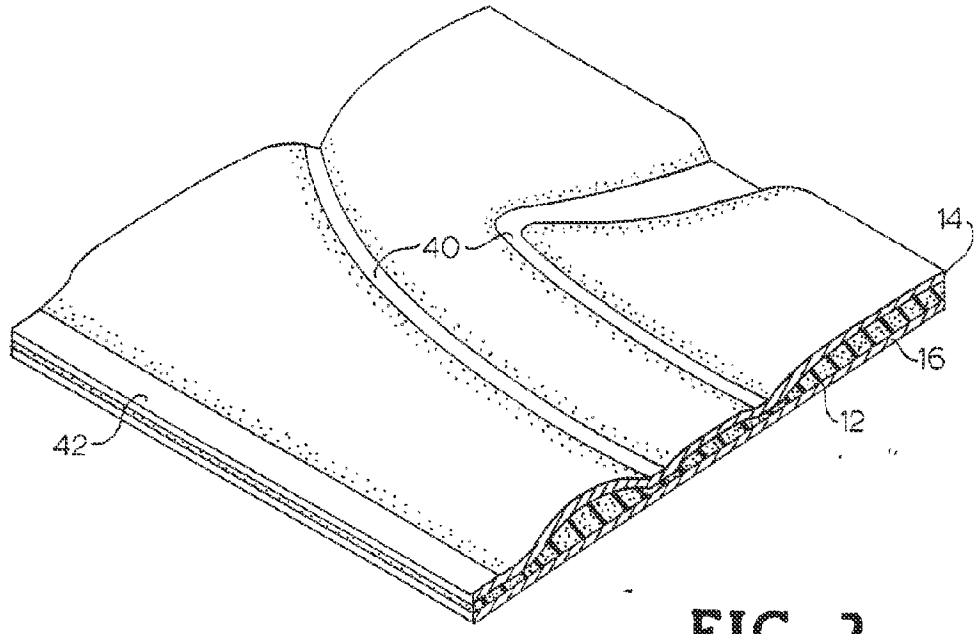



FIG. 2



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Skechers v Nike

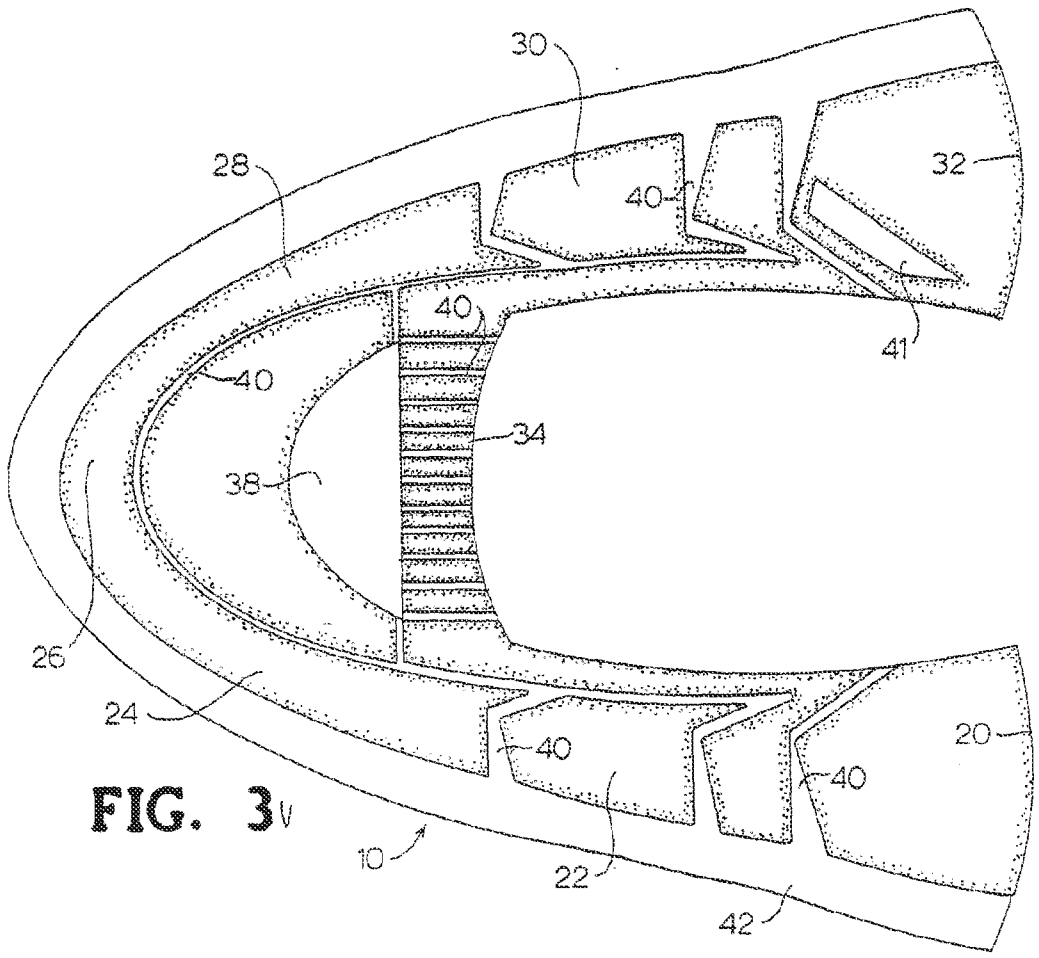



FIG. 3

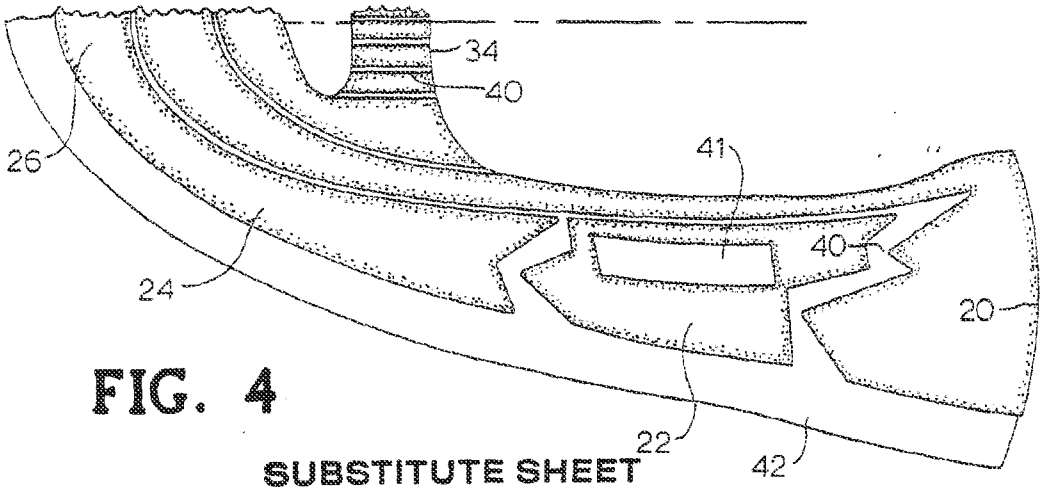



FIG. 4



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Skechers v Nike

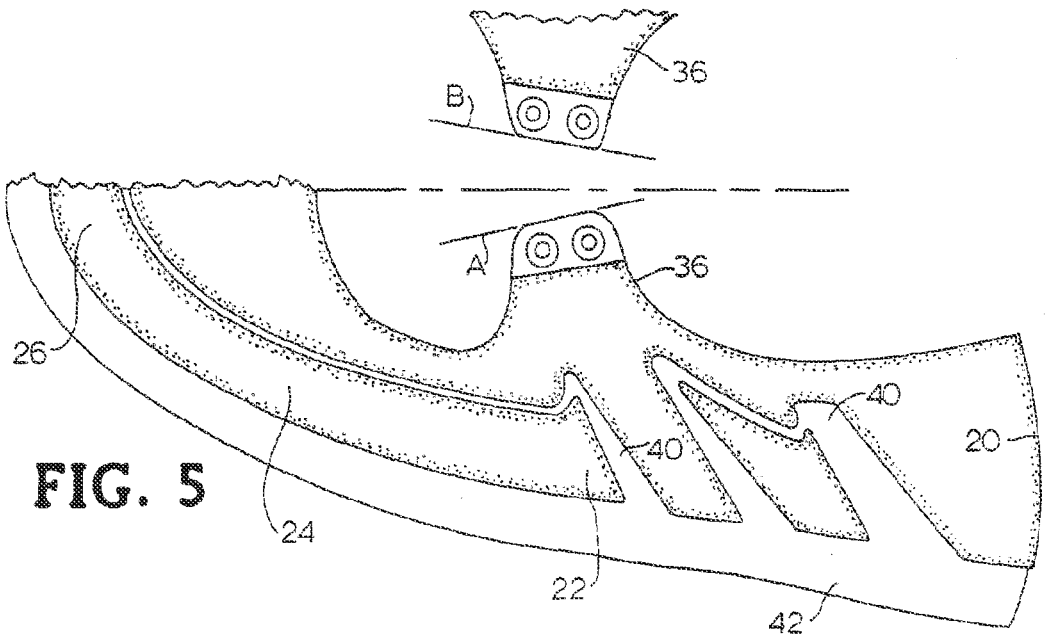



FIG. 5

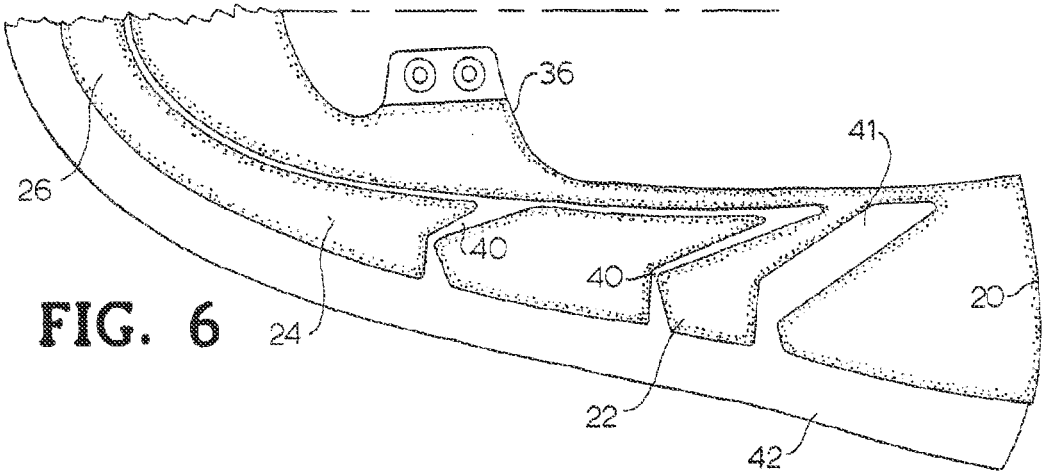



FIG. 6

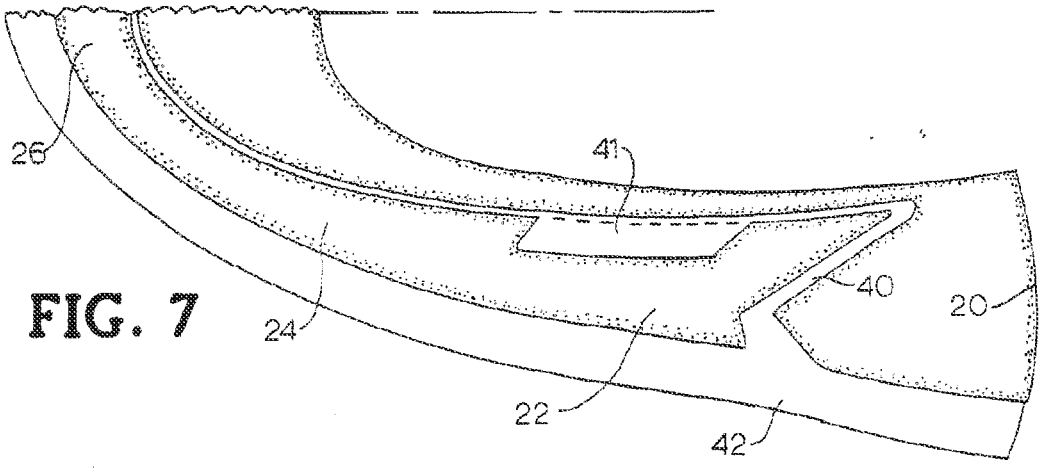



FIG. 7

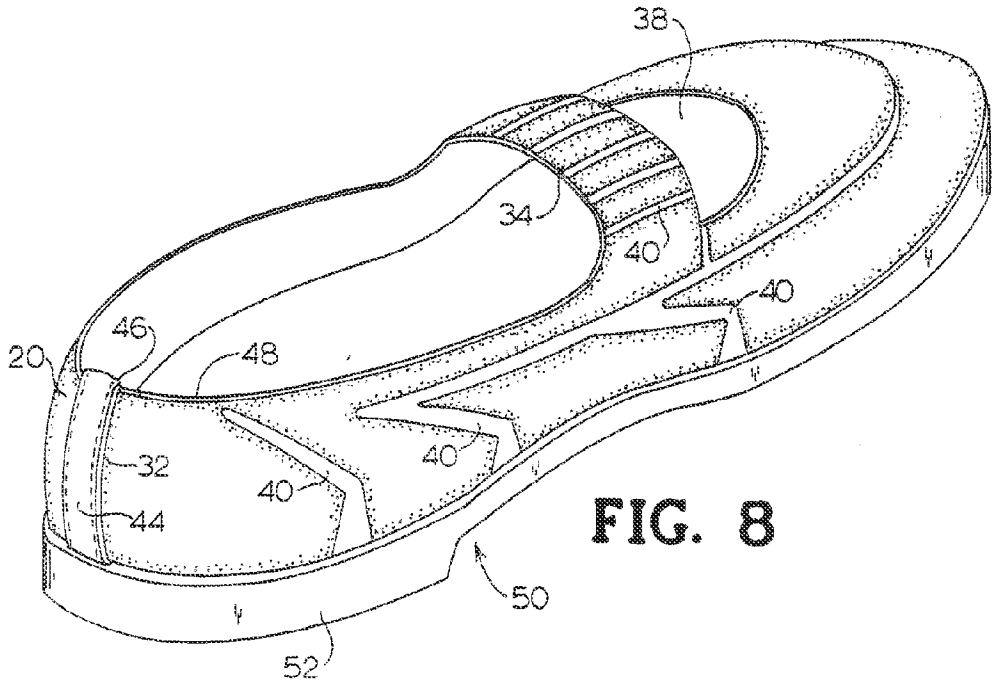



FIG. 8

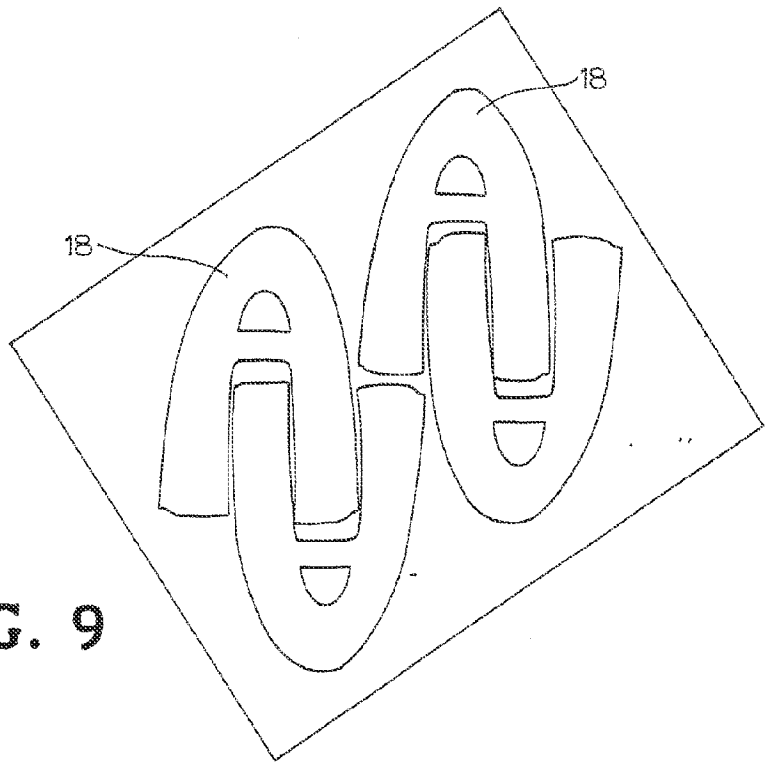



FIG. 9

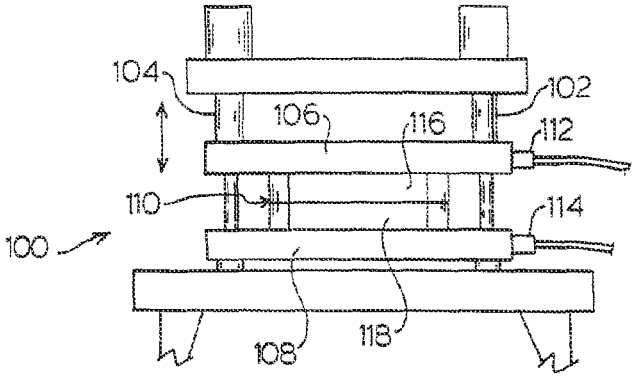



FIG. 10

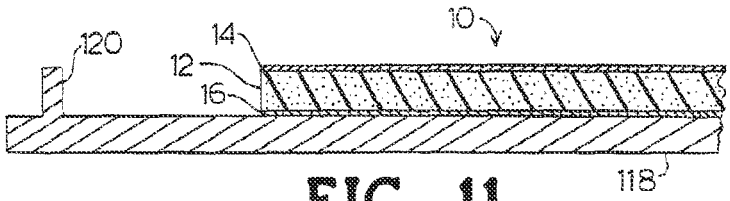



FIG. 11

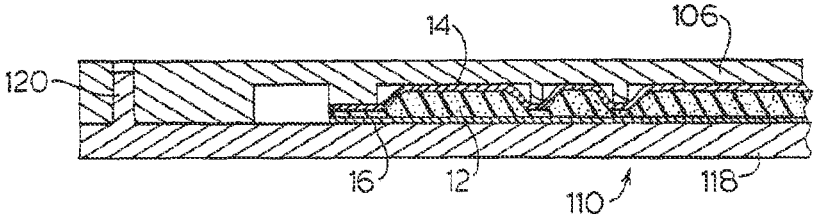



FIG. 12



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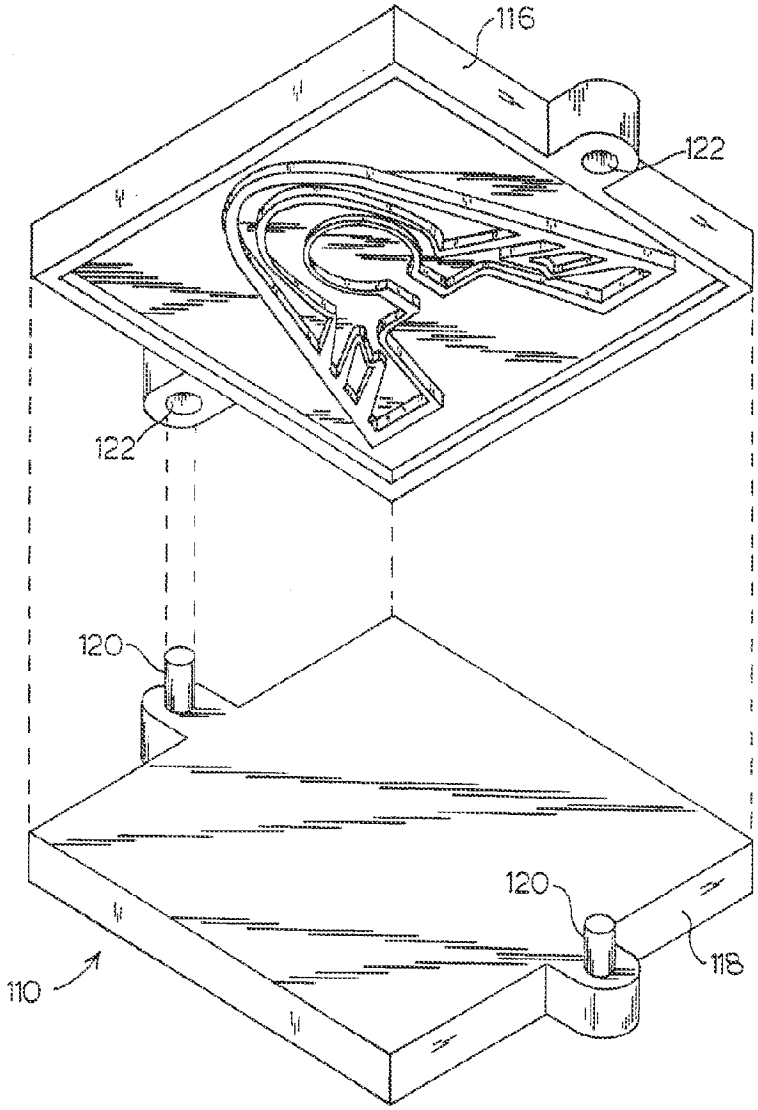



FIG. 13

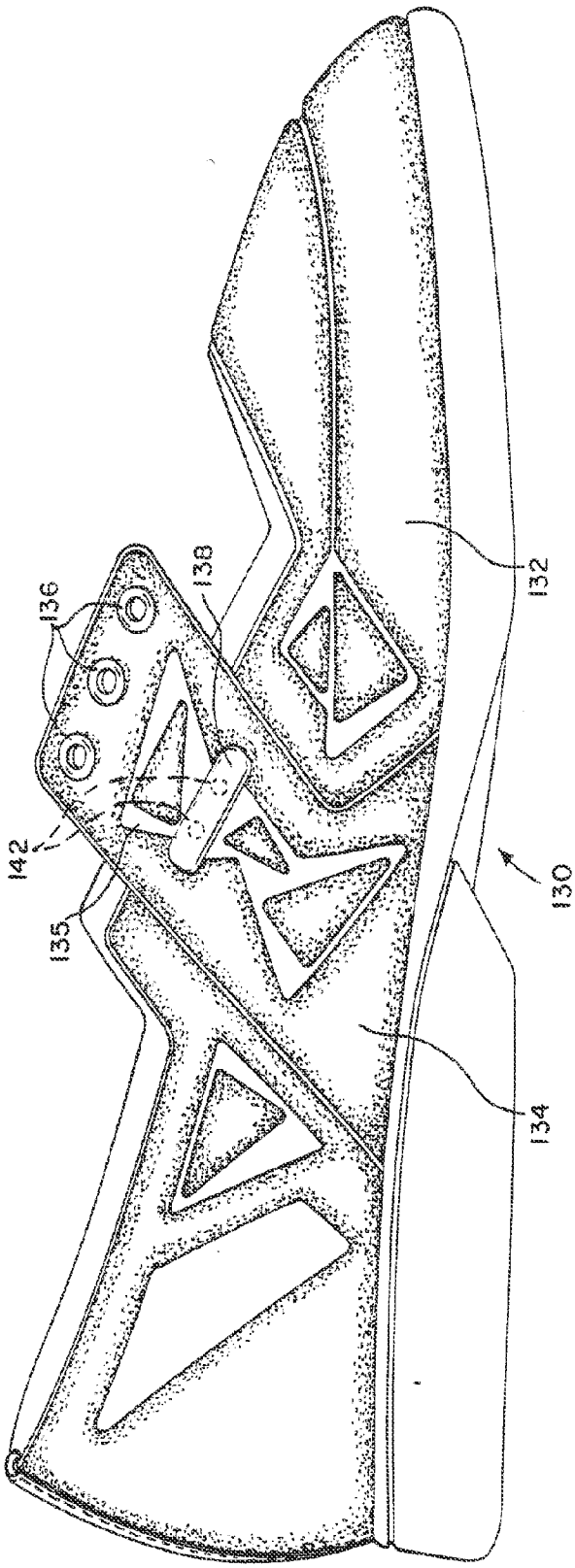



FIG. 14



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Skechers v Nike

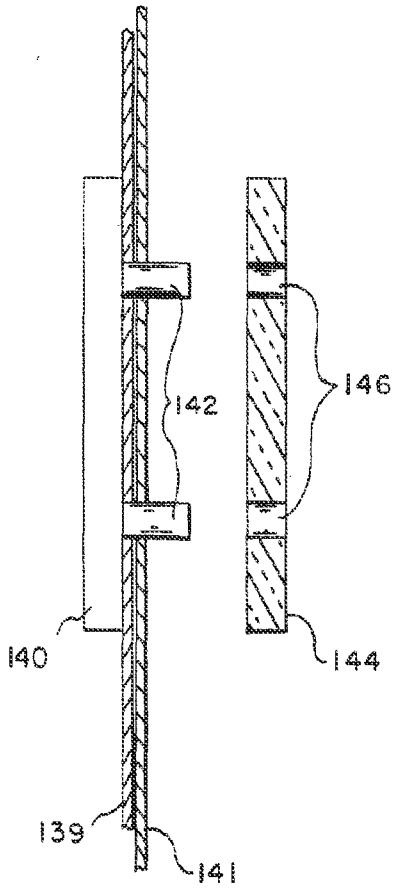



FIG. 15



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Skechers v Nike

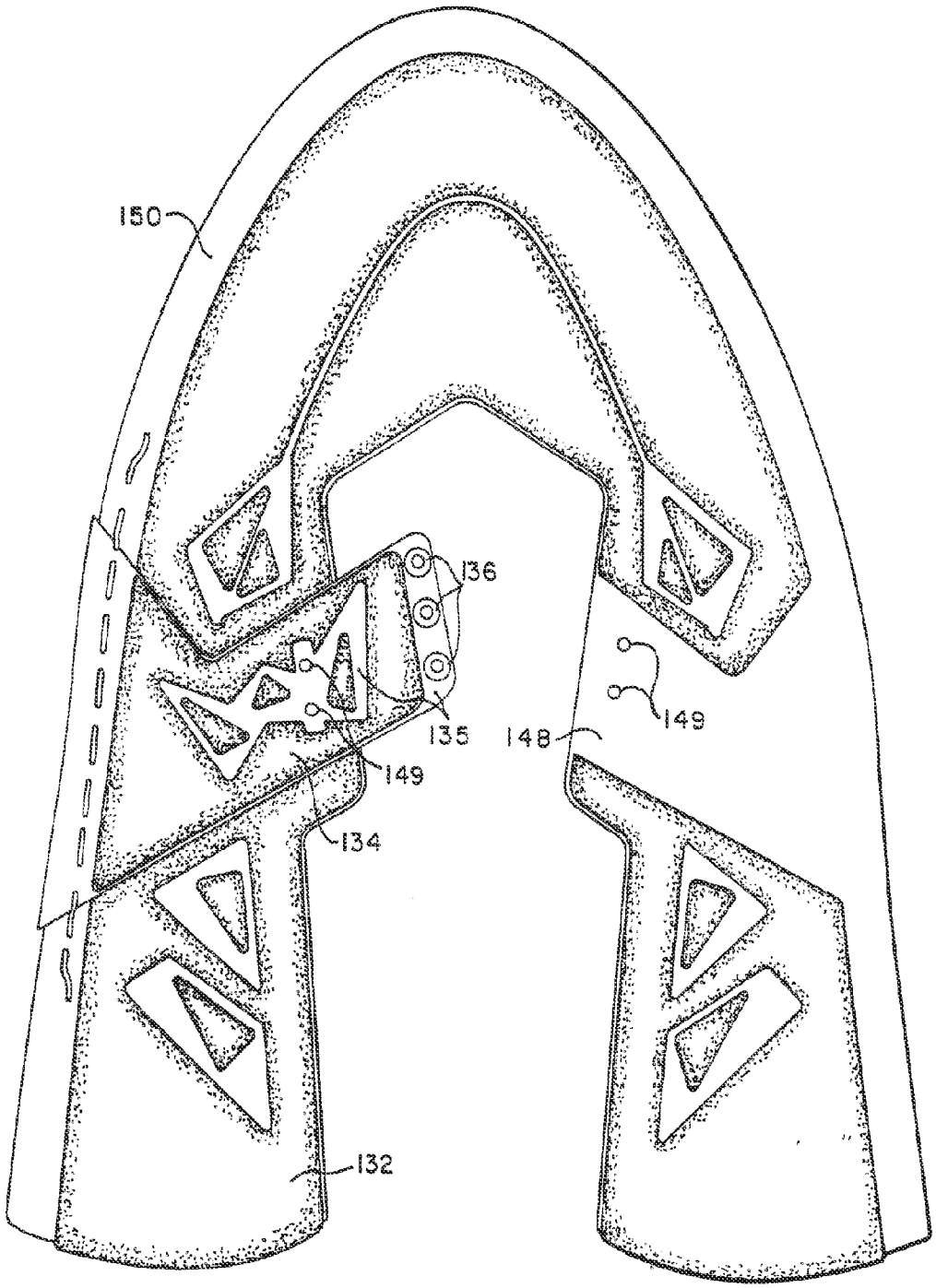



FIG. 16



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Skechers v Nike

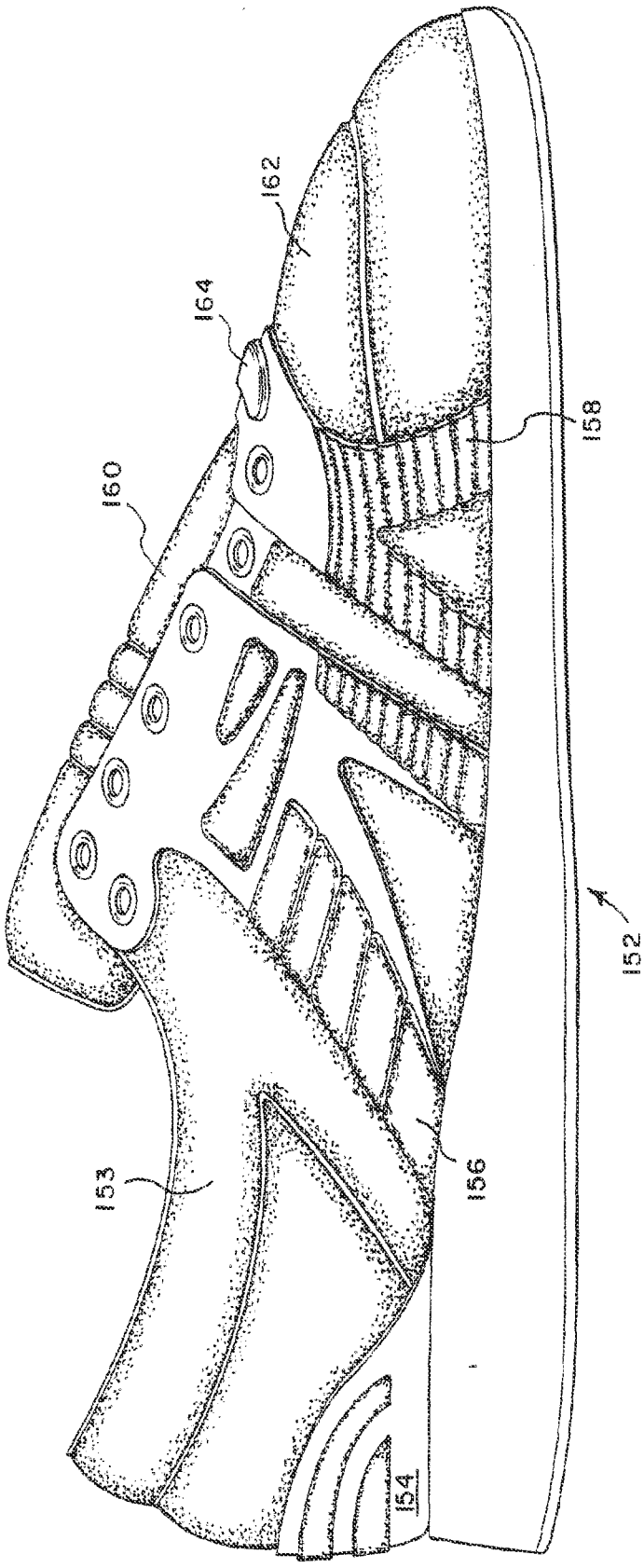



FIG. 17

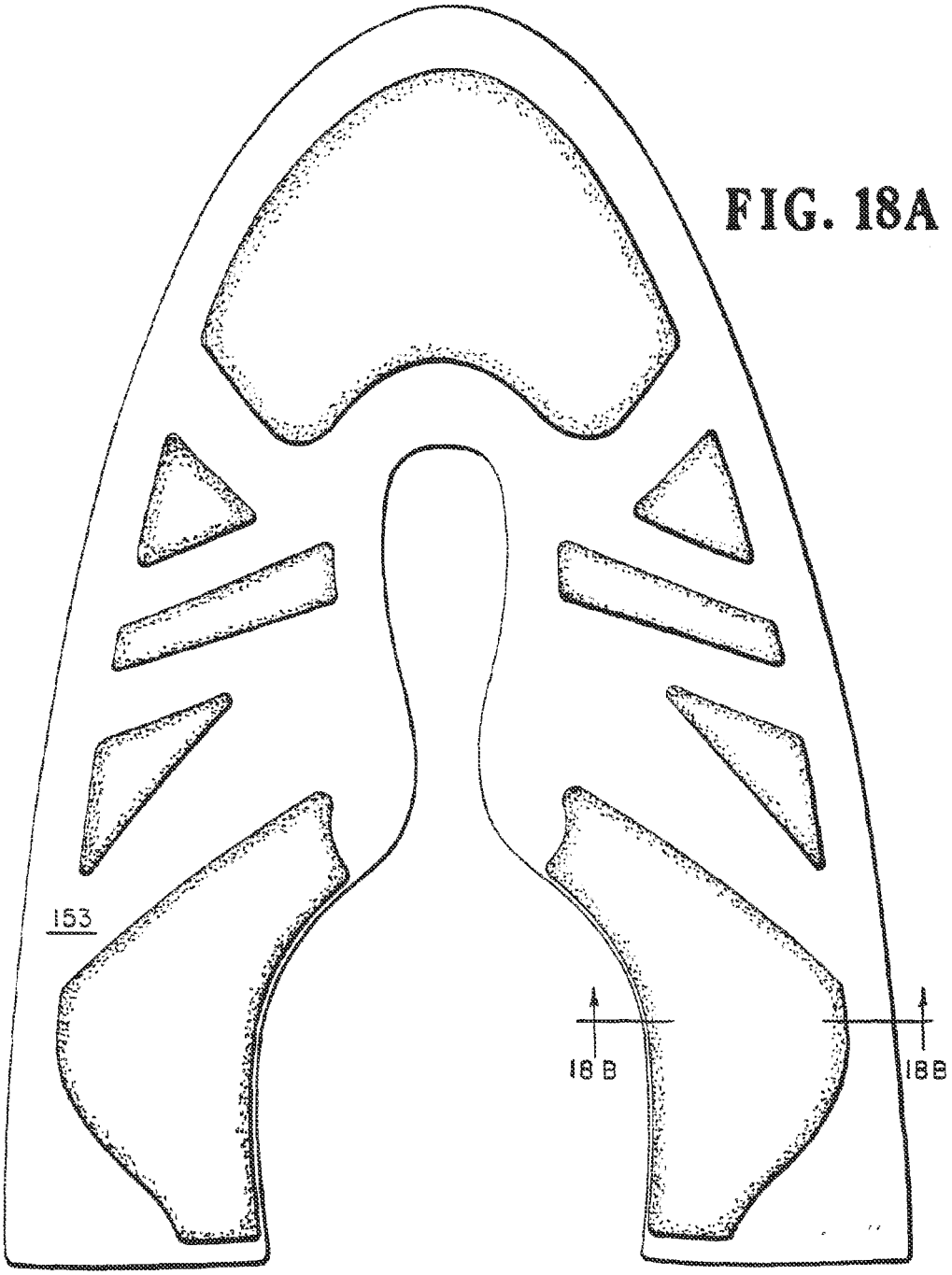



FIG. 18A

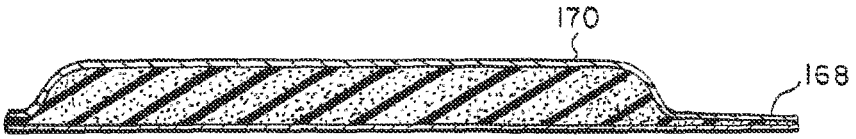



FIG. 18B



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Skechers v Nike

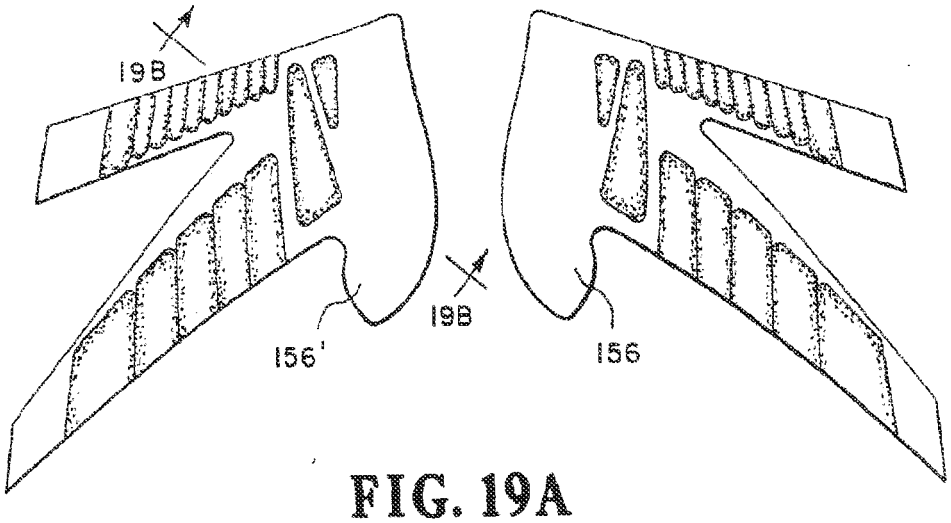



FIG. 19A




FIG.19B

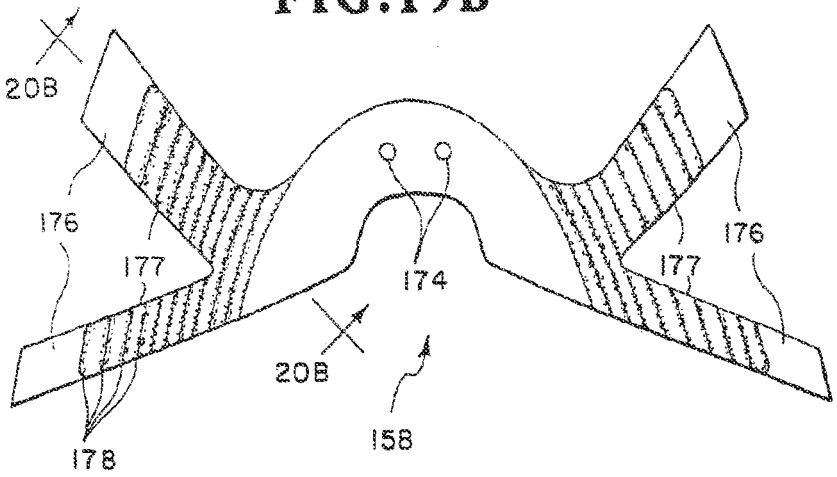



FIG.20A




FIG. 20B



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Skechers v Nike

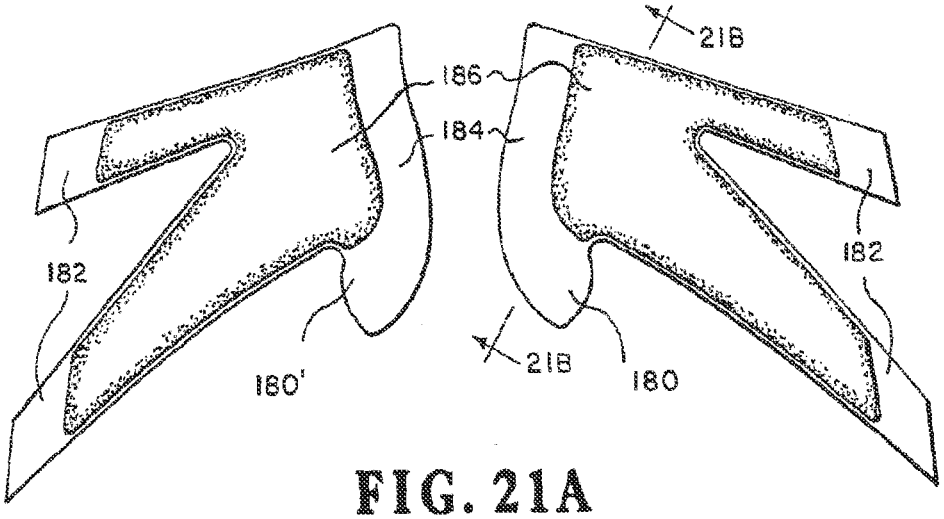



FIG. 21A




FIG. 21B

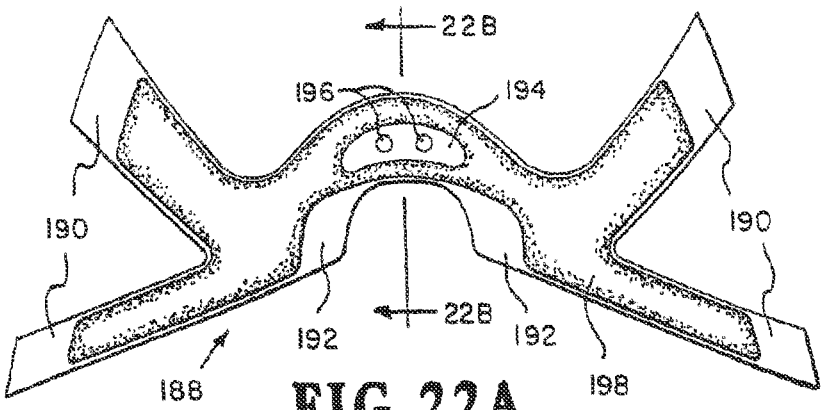



FIG. 22A




FIG. 22B

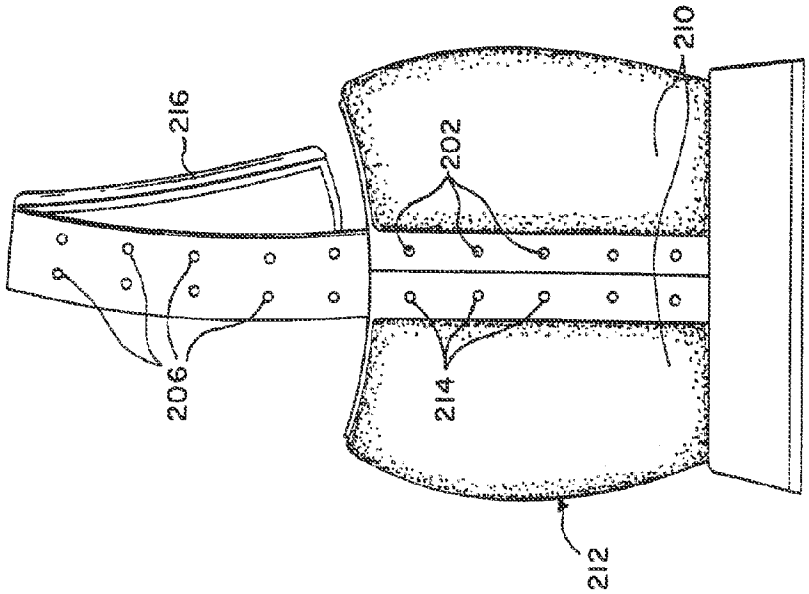



FIG. 23C

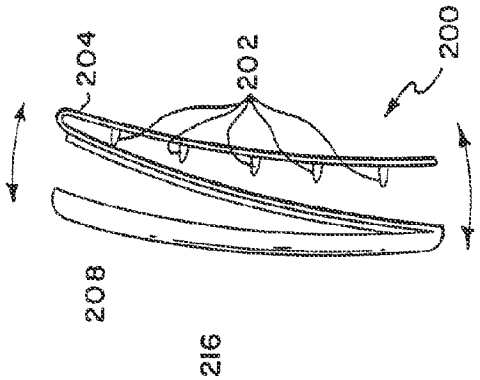



FIG. 23B

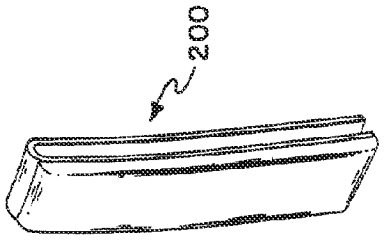



FIG. 23A

SUBSTITUTE SHEET

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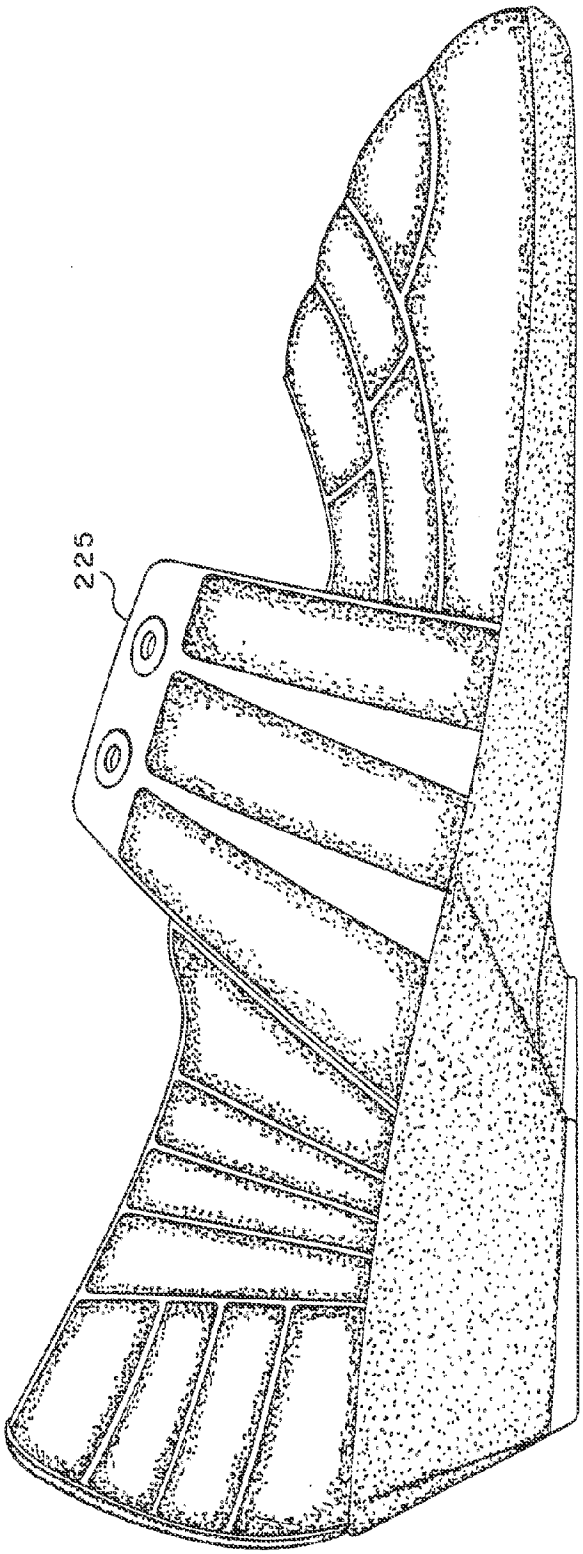



FIG. 24



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Skechers v Nike

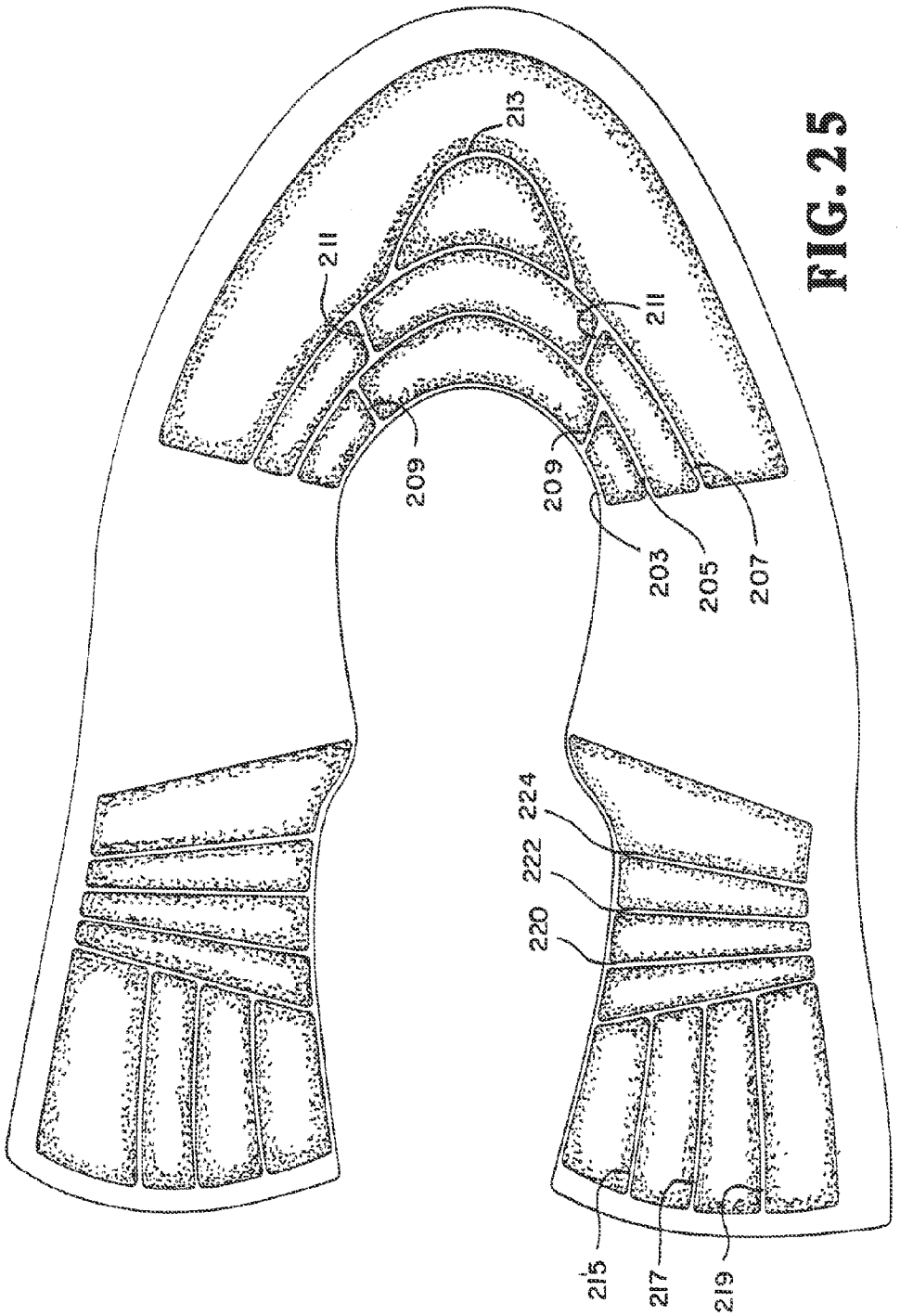



FIG. 25

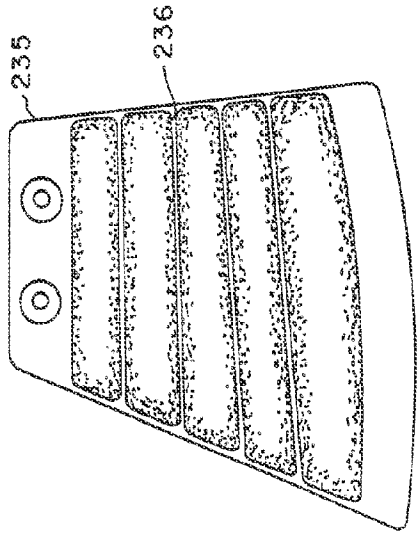



FIG. 28

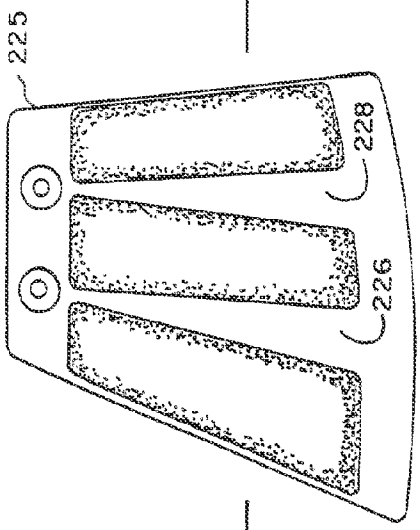



FIG. 26

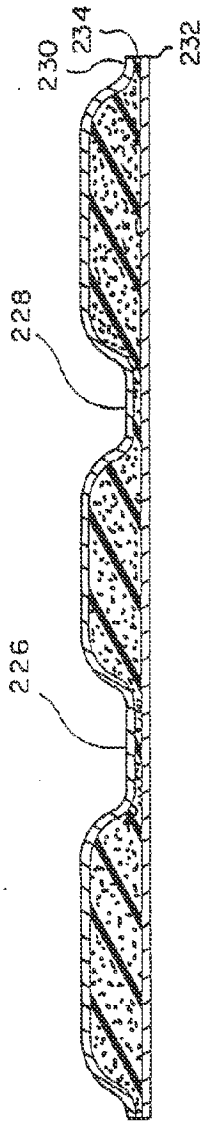



FIG. 27

FIG. 27

FIG. 27



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Skechers v Nike

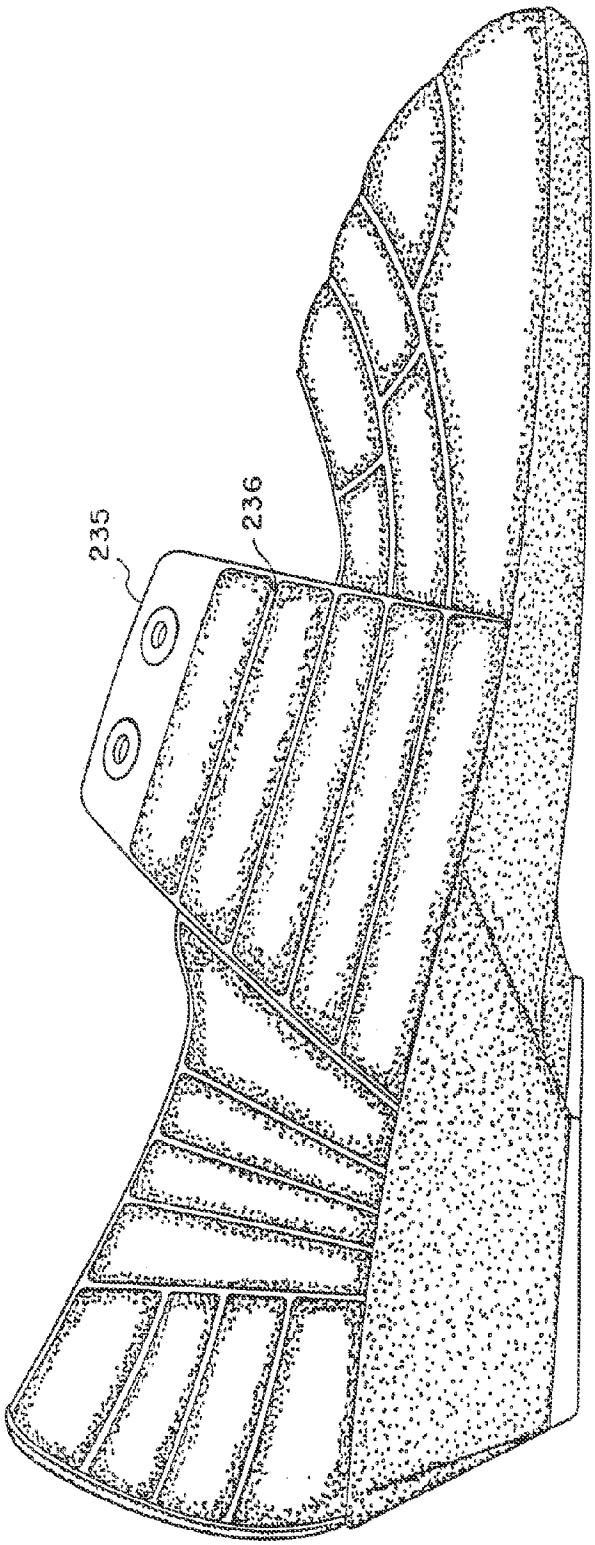



FIG. 29



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Skechers v Nike

# INTERNATIONAL SEARCH REPORT

International Application No PCT/US 89/04370

## I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC5: A 43 D 8/24

## II. FIELDS SEARCHED

Minimum Documentation Searched [7]

| Classification System | Classification Symbols |
|---|---|
| IPC5 | A 43 D; A 43 B |

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [8]

## III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

| Category [10] | Citation of Document, [11] with indication, where appropriate, of the relevant passages [12] | Relevant to Claim No. [13] |
|---|---|---|
| A | US, A, 2622052 (J.D. CHANDLER) 16 December 1952, see the whole document | 1-43 |
| A | US, A, 3130505 (I.I. MARKEVITCH) 28 April 1964, see the whole document | 1-43 |
| A | US, A, 3583081 (HIDEO HAYASHI) 8 June 1971, see the whole document | 1-43 |
| A | DE, B2, 2235819 (FRITZ WAGNER, MASCHINENFABRIK GMBH & CO KG) 14 February 1974, see the whole document | 1-43 |

* Special categories of cited documents: [14]

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

## IV. CERTIFICATION

| Date of the Actual Completion of the International Search | Date of Mailing of this International Search Report |
|---|---|
| 17th January 1990 | 12. 02. 90 |
| **International Searching Authority** | **Signature of Authorized Officer** |
| EUROPEAN PATENT OFFICE | C.D. v.d. Vliet |

Form PCT/ISA/210 (second sheet) (January 1985)

ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. PCT/US 89/04370

SA 31867

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the European Patent Office EDP file on 08/11/89
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent document cited in search report | Publication date | Patent family member(s) | | Publication date |
|---|---|---|---|---|
| US-A- 2622052 | 16/12/52 | NONE | | |
| US-A- 3130505 | 28/04/64 | NONE | | |
| US-A- 3583081 | 08/06/71 | FR-A- | 1578531 | 14/08/69 |
| | | GB-A- | 1223285 | 24/02/71 |
| | | DE-A- | 1785183 | 04/11/71 |
| | | DE-U- | 6753371 | 24/04/69 |
| | | DE-U- | 6753380 | 24/04/69 |
| DE-B2- 2235819 | 14/02/74 | DE-A- | 2265494 | 02/12/82 |

EPO FORM P0479

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

# EP1437057A1

Publication Title:

Light weight shoes

Abstract:

Abstract not available for EP 1437057

(A1)

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(19) Europäisches Patentamt
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(11) EP 1 437 057 A1

# (12) EUROPEAN PATENT APPLICATION

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**14.07.2004 Bulletin 2004/29**

(51) Int Cl.7: **A43B 1/00**, A43B 5/06, A43B 7/06, D04B 21/02

(21) Application number: **04000365.9**

(22) Date of filing: **09.01.2004**

(84) Designated Contracting States:
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**AL LT LV MK**

(30) Priority: **10.01.2003 JP 2003004903**
**25.11.2003 JP 2003394141**

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**Osaka-shi, Osaka 541-8538 (JP)**

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  **Osaka-shi Osaka 559-8510 (JP)**
- **Matsuzaki, Takeshi**
  **Osaka-shi Osaka 559-8510 (JP)**
- **Yamamoto, Tetsuo**
  **Osaka-shi Osaka 559-8510 (JP)**

(74) Representative:
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**DIEHL, GLÄSER, HILTL & PARTNER**
**Patentanwälte**
**Augustenstrasse 46**
**80333 München (DE)**

## (54) Light weight shoes

(57) A shoe (20) including an upper material using a double raschel warp knitted fabric is provided. The upper material includes a first surface having a non-mesh structure and a second surface having a non-mesh structure part (A)(1a-1d), a mesh structure part (B)(2) and a mesh structure part (C)(3a-3d). The burst strengths burst strengths A, B and C of the parts (A, B and C) satisfy the relationship: A > B > C. The non-mesh structure part (A)(1a-1d) is disposed in a part surrounding the tiptoe, a part connecting to a shoe sole and disposed in both sides of the foot for example, in a stripe. The mesh structure part (B)(2) is disposed in the vicinity of the surface of the toe and the mesh structure part (C)(3a-3d) is disposed in the both sides of the foot for example, in a stripe. Thus, a shoe having lightweight, air permeability and durability and a double raschel knitted fabric used for the shoe are provided.

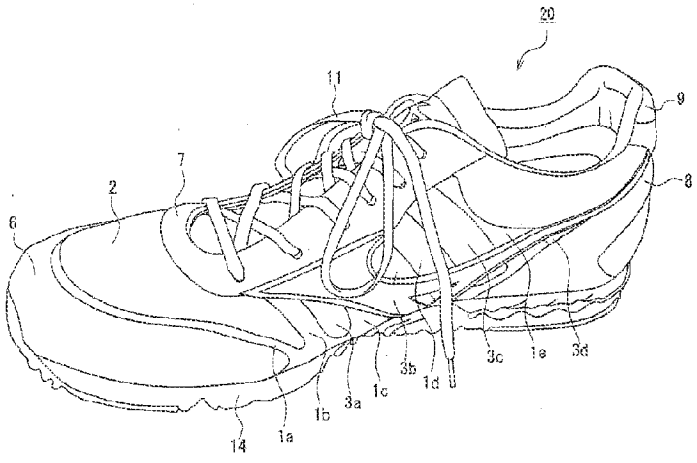



FIG. 2

EP 1 437 057 A1

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## Description

**[0001]** The present invention relates to shoes. More particularly, the present invention relates to shoes incorporating a double raschel warp knitted fabric.

**[0002]** Conventionally, a warp knitted fabric, a woven fabric, a mesh material, and the like, have been used for shoes (see, for example, application for utility model registration No. 2548713, JP 5(1993)-176804A). In particular, in sport shoes, properties such as lightweight and air permeability are required. A warp knitted fabric having a mesh structure is preferred with respect to the above-mentioned properties, but, on the other hand, it does not have a satisfactory strength and needs reinforcement as a whole. At the present, in most cases, such reinforcement is carried out by using artificial leather, leather, a resin sheet, resin, a woven fabric, and the like, from the side of the front surface. Therefore, in general, the usual weight of one sport shoe is about 150 g to 500 g.

**[0003]** However, the weight of the conventional sport shoe is heavy for use in marathon, running, and indoor sports such as badminton, ping-pong, etc. Therefore, there is a demand for shoes having lighter weight.

**[0004]** With the foregoing in mind, in order to solve the above-mentioned conventional problem, it is an object of the present invention to provide a shoe having lightweight and air permeability and also having high durability. This object is solved by the above independent claim 1. The invention also provides a double raschel warp knitted fabric of independent claim 10 and a use of this double raschel warp knitted fabric for a shoe according to independent claim 14. Further advantageous features and aspects of the invention are evident from the dependant claims, the description and the drawings.

**[0005]** According to one aspect of the present invention a shoe is provided which includes an upper material using a double raschel warp knitted fabric. The upper material includes a first surface having a non-mesh structure and a second surface having a non-mesh structure part (A) and mesh structure parts (B, C); the burst strengths A, B and C of the parts (A, B and C) satisfy the relationship: A > B > C; the non-mesh structure part (A) is disposed in a part surrounding the tiptoe and partially in both sides of the foot; the mesh structure part (B) is disposed in the vicinity of the surface of the toe; and the mesh structure part (C) is disposed partially in the both sides of the foot.

**[0006]** According to another aspect of the invention a shoe is provided including an upper material using a double raschel warp knitted fabric. The upper material includes a front surface including a mesh structure part and a back surface having a non-mesh structure; and a constituent yarn of the front surface includes a yarn having a melting point that is lower than the melting point of a constituent yarn of the back surface, and at least a part of the front surface is partially fused.

**[0007]** Another aspect of the present invention relates to a double raschel warp knitted fabric adapted for use with a shoe. The warp knitted fabric includes one surface having a non-mesh structure and another surface having a non-mesh structure part (A) and mesh structure parts (B, C); the burst strengths A, B and C of the parts (A, B and C) satisfy the relationship: A > B > C; the non-mesh structure part (A) is disposed in a part surrounding the tiptoe and partially in both sides of the foot; the mesh structure part (B) is disposed in the vicinity of the front surface of the toe, the mesh structure part (C) is disposed partially in the both sides of the foot; and at least the parts A to C are disposed in one continuous knitted fabric.

**[0008]** Figure 1 is a plan view showing a shoe pattern using a double raschel warp knitted fabric according to Embodiment 1 of the present invention.

**[0009]** Figure 2 is a side view showing a sport shoe according to Embodiment 2 of the present invention.

**[0010]** Figure 3 is a perspective view showing the shoe shown in Figure 2 when a tongue part is taken out of the shoe.

**[0011]** Figure 4 is a side view showing the shoe of Figure 2 seen from the opposite side.

**[0012]** Figure 5 is a plan view showing a shoe pattern using a double raschel warp knitted fabric according to Embodiment 3 of the present invention.

**[0013]** The present invention relates to a shoe including an upper material using a double raschel warp knitted fabric. The double raschel warp knitted fabric is a three-layer warp knitted fabric including a base fabric for a front surface, a base fabric for a back surface and a connecting yarn connecting the front surface to the back surface. This warp knitted fabric is knitted by using a warp knitting machine with a double needle line so that the base fabric for a first surface is knitted as a derivative weave that is jacquard-controlled so as to include a non-mesh structure part (A) and mesh structure parts (B, C) and the base fabric for a second surface is knitted as a homogeneous non-mesh structure. The second surface may be formed of one weave and may be formed with different weave mixed. A warp knitting machine for knitting this knitted fabric is commercially available from KARL MAYER Textilmaschinenfabrik GmbH in Germany (NIPPON MAYER LTD. (a Japan corporation) is included).

**[0014]** When the surface including the non-mesh structure part (A) and mesh structure parts (B, C) of the knitted fabric is used for the front surface of a shoe, the shoe has an excellent appearance and furthermore, a surface area is increased, thus improving air permeability. On the contrary, when the second surface having a non-mesh structure is used for the front surface of the shoe, water can easily be prevented from entering the shoe from the surface.

**[0015]** The burst strengths A, B and C of the parts (A, B and C) of the double raschel warp knitted fabric satisfy the relationship: A > B > C. The non-mesh structure part (A) is disposed in a part that requires a high strength,



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that is, a part surrounding the tiptoe (i.e., a tiptoe region of the shoe) and a part connecting to a shoe sole, and also to parts that face the sides of the foot (i.e., side regions of the shoe), the non-mesh structure part (A) is disposed in a stripe. Furthermore, to a part that may have moderate strength and air permeability, that is, a part in the vicinity of the surface of the toe (i.e., a toe region of the shoe), the mesh structure part (B) is placed. Furthermore, to a part that needs air permeability, that is, the side surfaces of the foot (both sides), the mesh structure part (C) is placed, for example, in a stripe. Thus, as a whole, in the shoe, air permeability and durability are balanced.

**[0016]** The burst strength according to the bursting test based on the JIS L 1096 A of the non-mesh structure part (A) is preferably about 1400 kPa to 1550 kPa with respect to shoes such as marathon shoes, in which lightweight is particularly required. With respect to general shoes for running or jogging, the burst strength is preferably about 1600 kPa. Furthermore, with respect to shoes for a heavy use, for example, shoes for indoor sports such as badminton, ping-pong, etc., the burst strength is preferably about 2400 kPa.

**[0017]** It is preferable that the burst strength of the mesh structure part (C) is in the range from 900 kPa to 1000 kPa. The mesh structure part (B) may have any burst strength between the burst strength of (A) and that of (C).

**[0018]** It is preferable that a tiptoe region, a heel region and an eyelet part of the sport shoe are reinforced. Among the above-mentioned parts, the heel part may not be reinforced in the case where lightweight is particularly important.

**[0019]** It is preferable that a tongue part of the sport shoe includes the mesh structure part (C). It is further preferable that the tongue part may include a mesh structure part (D) having a burst strength that is lower than that of the part (C).

**[0020]** The double raschel warp knitted fabric may have a property of being stretchable in the width direction of the foot and not stretchable in longitudinal direction of the foot. Thus, the effect of allowing a size of a shoe to be stable and preventing the tiptoe part from stretching when the toe touches to the part at the time of wearing. On the contrary, a property of not being stretchable in the width direction of the foot and stretchable in the longitudinal direction of the foot may be provided. Thus, fitness can be provided in the direction of the width. Furthermore, when a shoe is manufactured by a process called a lasting method, in particular, the manufacturing process of the side part can be carried out easily.

**[0021]** At least the parts A to C of the double raschel warp knitted fabrics of the present invention are disposed as one continuous knitted fabric. Thus, when the fabrics are cut together with paper pattern, a shoe can be formed, thus enabling the efficiency in the formation to be improved.

**[0022]** Then, on another surface of the upper material (corresponding to an instep cover) of the present invention, a fiber with a low melting point is used and at least a part thereof is fused. Since the fused part is reinforced by fixing knit stitches, in the case of reinforcing a part with which the calx is brought into contact or a part with which the both sides of the foot are brought into contact, by heating only these parts from the outside, the knit stitch can be reinforced. In this case, it is important that only outside of the upper material is fused. The inner surface side of the upper material is not preferably fused in order to maintain a flexible state because this side covers the foot. An example of the fiber with a low melting point includes, for example, an ethylene vinyl alcohol fiber yarn but is not limited thereto. It is preferable to use fibers whose melting point is 150°C to 200°C. The fiber with a low melting point may be used for an entire surface of the front surface of the double raschel warp knitted fabric. The fiber with a low melting point can be produced by mixing together with a fiber with 20 wt.% or more of high melting point material such as polyester. In the case of polyethylene terephthalate, the melting point is 260°C.

**[0023]** A constituent yarn of the back surface of the double raschel warp knitted fabric and a connecting yarn connecting the front surface to the back surface are preferably a polyester fiber yarn, and more preferably a polyethylene terephthalate fiber yarn. The other configuration of the present invention may be the same as that of the basic invention mentioned above.

**[0024]** The present invention can provide a shoe having lightweight and air permeability and further having high durability, and a double raschel warp knitted fabric used therefor.

Example

**[0025]** Hereinafter, the present invention will be explained in more detail by way of Examples. Note here that the present invention is not limited to the following Examples.

(Example 1)

**[0026]** Figure 1 shows a double raschel warp knitted fabric (thin melon-net fabric and back-woven half-net) used for a sport shoe according to one Example of the present invention. Shoe patterns 10 matched to paper patterns are placed continuously on one knitted fabric as shown in Figure 1. In the shoe patterns 10, a non-mesh structure part (A) 1a to 1e are disposed in a part surrounding the tiptoe and a part connecting to the shoe sole and stripe-shaped parts on the side surface of the foot (both sides). That is to say, 1a denotes a part surrounding the tiptoe and connected to the shoe sole; 1b to 1e denote stripe-shaped parts arranged on both surfaces of the foot (both sides); and 1f to 1g denote parts folded in the shoe sole. A cut 13 at the tip is a part that



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becomes circular shape at the site of the tiptoe when folded into the shoe sole. A constituent yarn of a front surface and a back surface of this double raschel warp knitted fabric was a multifilament fiber yarn of polyethylene terephthalate (total diameter of fibers: 84 dtex and number of filaments: 24) and a connecting yarn connecting the front surface to the back surface was a monofilament fiber yarn made of polyethylene terephthalate (total diameter of fibers: 33 dtex and number of filament: 1). Gauge of a knitting machine was 24 gauges, and the weight per unit area of an entire knitted fabric was 258.4 g/m$^2$.

**[0027]** To a part that may have a moderate strength and air permeability, that is, a part in the vicinity of the surface of the toe, a mesh structure part (B) 2 was placed.

**[0028]** To a part that needs air permeability, that is, the side surfaces of the foot (both sides), mesh structure parts (C) 3a to 3d were placed in a stripe.

**[0029]** A tongue part 12 was formed of a mesh structure part (C) 4 and a mesh structure part (D) 5 with higher air permeability.

**[0030]** The back surface was formed of the same weave as that of the non-mesh structure part (A) of the front surface.

**[0031]** This double raschel warp knitted fabric had a structure that is stretchable in the X direction and not stretchable in the Y direction.

**[0032]** When the bursting test was carried out in accordance with JIS L 1096 A method, the burst strength of the non-mesh structure part (A) was 1600 kPa; the burst strength of the mesh structure part (B) was 1500 kPa; the burst strength of the mesh structure part (C) was 1000 kPa; and the burst strength of the mesh structure part (D) was 930 kPa. When the air permeability test was carried out in accordance with the JIS L 1096 A method ("Frazil method"), air permeability of the non-mesh structure part (A) was 240 cm$^3$/cm$^2$/s; air permeability of the mesh structure part (B) was 255 cm$^3$/cm$^2$/s; air permeability of the mesh structure part (C) was 278 cm$^3$/cm$^2$/s; and air permeability of the mesh structure part (D) was 340 cm$^3$/cm$^2$/s. The thickness of this knitted fabric was 5 mm. Furthermore, the weight of double raschel warp knitted fabric used for one shoe was 20 g (in the case of 26.0 cm-shoe).

(Example 2)

**[0033]** Sport shoes were formed by using the warp knitted fabrics obtained in Embodiment 1. Figure 2 is a side view showing a shoe for a right foot. References numerals given to elements except for the elements of the shoe pattern in Figure 1 will be mentioned below. Reference numeral 6 denotes a reinforcing cloth (artificial leather) for a tiptoe part; 7 denotes a reinforcing cloth (artificial leather) for reinforcing eyelets for shoelace 11; 8 denotes a leather part for reinforcing the calx; 9 denotes a cushion part for covering the tarsus; and 14 denotes a shoe sole part formed of synthetic elastomer (EVA resin). Figure 3 is a perspective view showing the shoe of Figure 2 when the tongue portion is taken out of the shoe. Figure 4 is a side view showing the shoe of Figure 2 seen from the opposite side.

**[0034]** The weight of a 26-cm shoe was 133.1 g, which was significantly lighter as compared with the weight of about 150 g to 200 g of one of the conventional sport shoes of the same kind. This reduction in weight can be achieved by reducing the upper material by minimizing the amount of reinforcing materials as possible and by disposing a part requiring a satisfactory strength and a part requiring air permeability on one continuous warp knitted fabric so as to reduce sewing parts.

**[0035]** A test in terms of feeling of wearing, air permeability and durability was carried out by actually wearing the formed 26-cm shoes for one month. As a result, it was confirmed that the feeling of wearing, air permeability and durability were good and that the shoes had excellent functional properties as sport shoes. In particular, the shoes were suitable as shoes to be worn in long-distance running such as marathon.

(Example 3)

**[0036]** Figure 5 shows double raschel warp knitted fabric (thin melon-net fabric and back-woven half-net) used for sport shoes according to one Example of the present invention. A constituent yarn of a front surface of the double raschel warp knitted fabric is a multi-filament yarn made of ethylene vinyl alcohol (total diameter of fibers: 84 dtex, number of filaments: 24, amount of yarns: 78.76 g/m$^2$, and total ratio: 30.4%), and a constituent yarn of the back surface of the double raschel warp knitted fabric is a multi-filament yarn made of polyethylene terephthalate (total diameter of fibers: 84 dtex, number of filaments: 24, amount of yarns: 94.52 g/m$^2$, and total ratio: 36.5%); and a connecting yarn connecting the front surface to the back surface is a monofilament fiber yarn made of polyethylene terephthalate (total diameter of fibers: 33 dtex, number of filament: 1, amount of yarns: 85.73 g/m$^2$, and total ratio: 33.1%). Gauge of a knitting machine was 24 gauges, and the weight per unit area was 259.0 g/m$^2$. The thickness of this knitted fabric was 5 mm.

**[0037]** In Figure 5, reference numeral 30 denotes a shoe pattern on knitted fabric. On one knitted fabric, respective parts are placed continuously. For reducing the excess parts so as to increase the yield, the arrangement is changed from that shown in Figure 1. Reference numeral 31 denotes a part for covering the anterior side of the foot and 32 denotes a part for covering the posterior side of the foot. The configuration is different from that shown in Figure 1 in that two parts are combined into one continuous part. Reference numeral 33 denotes a tongue part, and 34 denotes a part to be attached to the posterior side face of the calx. The burst strength of each part is substantially the same as that



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in Example 1. The number of meshes (the number of holes per inch (25.4 mm)) is described below. In the below explanation, X direction denotes a width direction and Y direction denotes a longitudinal direction in Figure 5.

(1) a part 31a1 located above the toe, stripe parts 31a2 and 32a1 of the side part of the foot, a part 32a2 for covering the calx, and a part through which a shoelace passes in a tongue part 33c: 5.5 meshes in the lateral direction and 3 meshes in the longitudinal direction
(2) a tip part 31b of the toe, a side part 32b1 of the foot and a stripe part 32b2, and a part 34 to be attached to the side face of the posterior side of the calx: 11 meshes in the lateral direction and 6 meshes in the longitudinal direction
(3) an anterior side 31c1 folded into a shoe sole and a stripe part 31c2, a reinforcing part 32c1 of a side part of the calx and an edge part 32c2: 12 meshes in the lateral direction and 12 meshes in the longitudinal direction
(4) a central part 33a of the tongue part: 5 meshes in the lateral direction and 2 meshes in the longitudinal direction.
(5) a part 33b except for a central part and a part through which a shoelace passes: 6 meshes in the lateral direction and 3.5 meshes in the longitudinal direction.

**[0038]** This double raschel warp knitted fabric has a structure that is not stretchable in the X direction and the Y direction.

**[0039]** A shoe that is the same as that shown in Figures 2 to 4 is formed by using the shoe patterns 30 of a knitted fabric. Thereafter, side parts of the foot corresponding to the parts 1c and 1d of Figure 2 are fused and processed by heating thereof at 170°C. As a result, in the heated part, knit stitch structure became rigid, and thus reinforcement can be carried out.

**[0040]** The weight of one of the obtained 26-cm shoes was 133 g. A test in terms of feeling of wearing, air permeability and durability was carried out by actually wearing the formed 26-cm shoes for one month. As a result, it was confirmed that the feeling of wearing, air permeability and durability were good and that the shoes had excellent functional properties as sport shoes. In particular, the shoes were suitable as shoes to be worn in long-distance running such as marathon.

## Claims

1. A shoe (20) comprising:

   an upper material using a double raschel warp knitted fabric;

   the upper material including a first surface having a non-mesh structure and a second surface having a non-mesh structure part (A) (1a to 1d) and mesh structure parts (B) (C) (2) (3a to 3d)

   the non-mesh structure part (A) and the mesh structure parts (B, C) respectively having burst strengths A, B and C that satisfy the relationship: A > B > C;

   the shoe including a tiptoe region, a toe region positioned adjacent to the tiptoe region, a heel region, and two side regions that extend between the heel and toe regions;

   the non-mesh structure part (A) being disposed at the tiptoe region (1a) and partially at both side regions (1b to 1e);

   the mesh structure part (B) (2) being disposed adjacent the toe region; and

   the mesh structure part (C)(3a to 3d) being disposed partially at both side regions.

2. The shoe according to claim 1, wherein in accordance with a bursting test based on JIS L 1096A Method, the burst strength of the non-mesh structure part (A) is 1400 kPa or more and the burst strength of the mesh structure part (C) is 900 kPa to 1200 kPa.

3. The shoe according to claim 1 or 2, wherein the tiptoe region (6), the heel region (8) and an eyelet part (a)(7) of the shoe are reinforced.

4. The shoe according to any one of claims 1 to 3, wherein a tongue part (5) of the shoe comprises the mesh structure part (C).

5. The shoe according to any one of claims 1 to 4, wherein a constituent yarn of the first surface and the second surface, and a connecting yarn connecting the first surface to the second surface are polyester fiber yarns.

6. The shoe according to claim 1, wherein the upper material comprises a front surface having a mesh structure part and a back surface having a non-mesh structure; a constituent yarn of the front surface including a yarn having a melting point that is lower than the melting point of a constituent yarn of the back surface, and at least a part of the front surface is partially fused.

7. The shoe according to claim 6, wherein the constituent yarn of the front surface is an ethylene vinylalcohol fiber yarn.



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8. The shoe according to claim 6 or 7, wherein the constituent yarn of the back surface and the connecting yarn connecting the front surface to the back surface are polyester fiber yarns.

9. The shoe according to any one of the preceeding claims wherein at least the parts (A) to (C) are disposed in one continous knitted fabric.

10. A double raschel warp knitted fabric including one surface having a non-mesh structure and another surface having a non-mesh structure part (A) and mesh structure parts (B, C);
the non-mesh structure part (A) and the mesh structure parts (B, C) including burst strengths A, B and C satisfy the relationship: A > B > C, and
the parts (A) to (C) being disposed in one continuous knitted fabric.

11. The double raschel warp knitted fabric according to claim 10, wherein a constituent yarn of the first surface and the second surface and a connecting yarn connecting the first surface to the second surface is a polyester fiber yarn.

12. The double raschel warp knitted fabric according to claim 10, wherein the upper material comprises a front surface having a mesh structure part and a back surface having a non-mesh structure; and a constituent yarn of the front surface including a yarn having a melting point that is lower than the melting point of a constituent yarn of the back surface.

13. The double raschel warp knitted fabric according to claim 12, wherein the constituent yarn of the front surface is an ethylene-vinyl alcohol fiber yarn.

14. The double raschel warp knitted fabric according to claim 12 or 13, wherein the constituent yarn of the back surface and the connecting yarn connecting the front surface to the back surface are polyester fiber yarns.

15. Use of a double raschel warp knitted fabric according to any one of claims 10 to 14 for a shoe.

16. Use of a double raschel warp knitted fabric according to claim 15 for a shoe;

the shoe including a tiptoe region, a toe region positioned adjacent to the tiptoe region, a heel region, and two side regions that extend between the heel and toe regions;

the non-mesh structure part (A) being disposed at the tiptoe region and partially at the side regions of the shoe;

the mesh structure part (B) being disposed in the vicinity of the toe region of the shoe;

the mesh structure part (C) being disposed partially at the side regions of the shoe.



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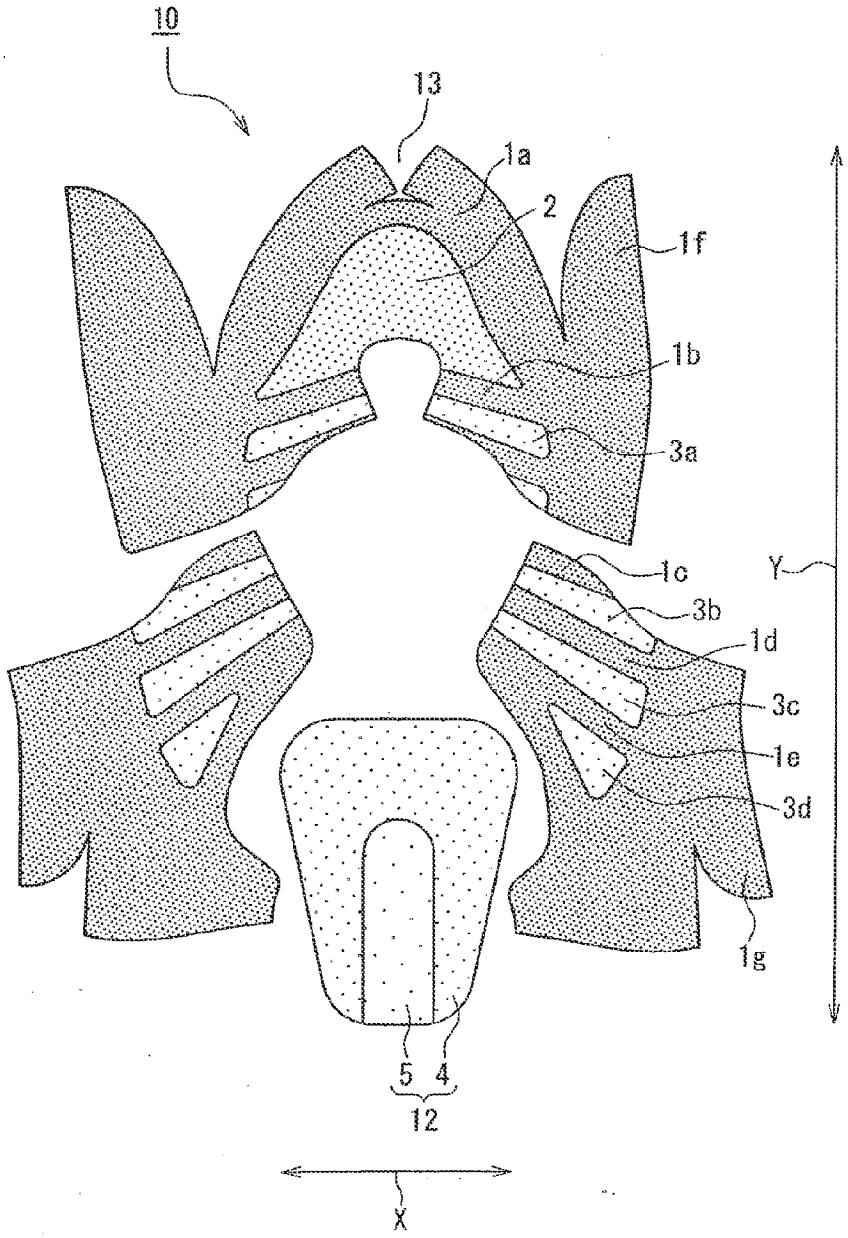



FIG. 1



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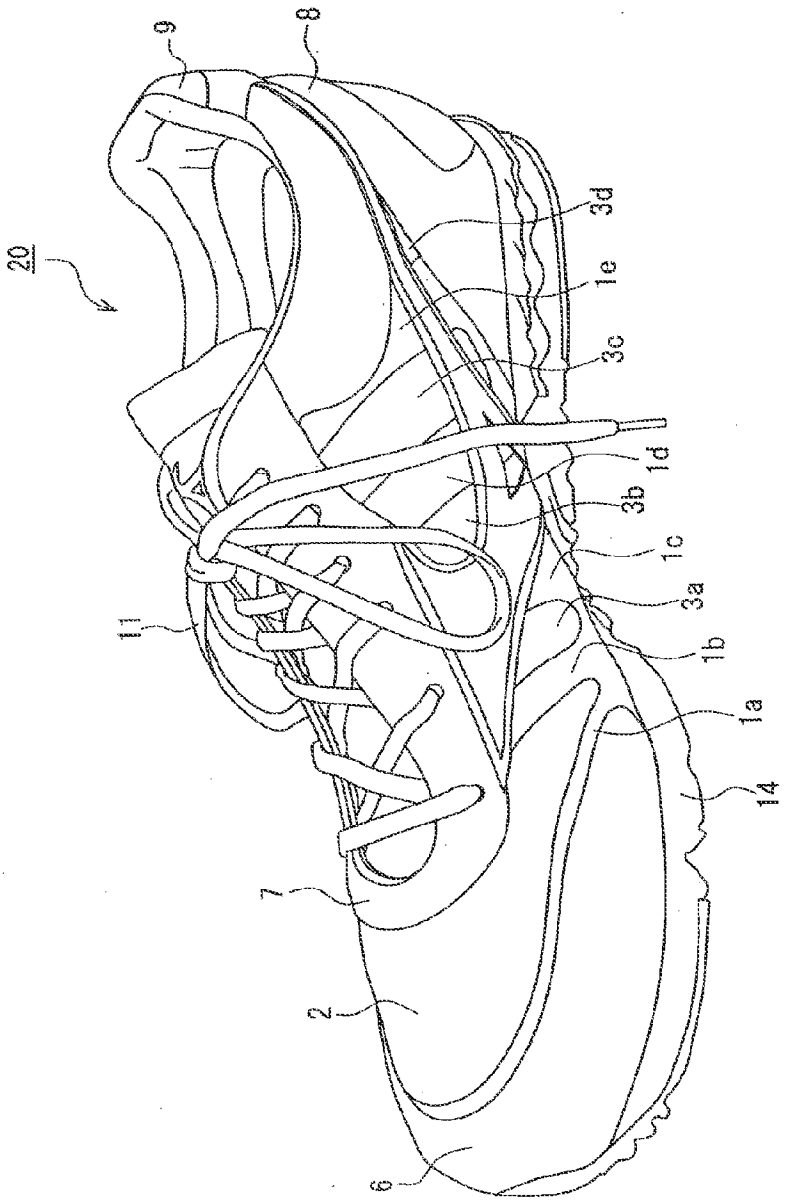



FIG. 2



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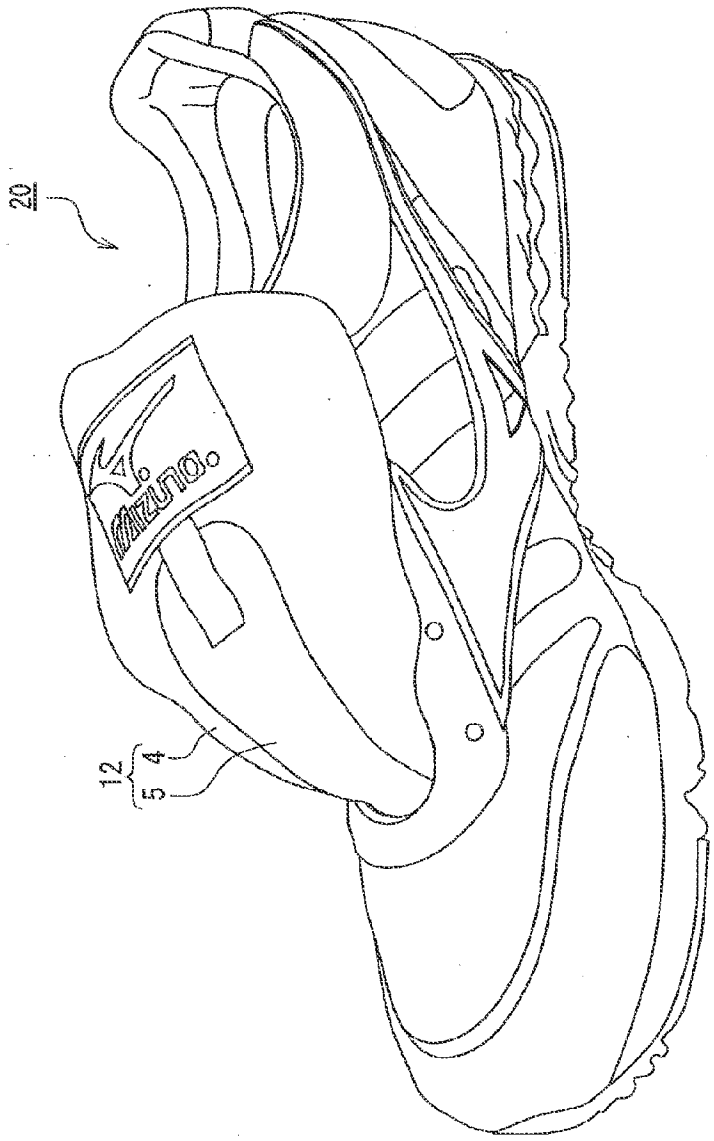



FIG. 3



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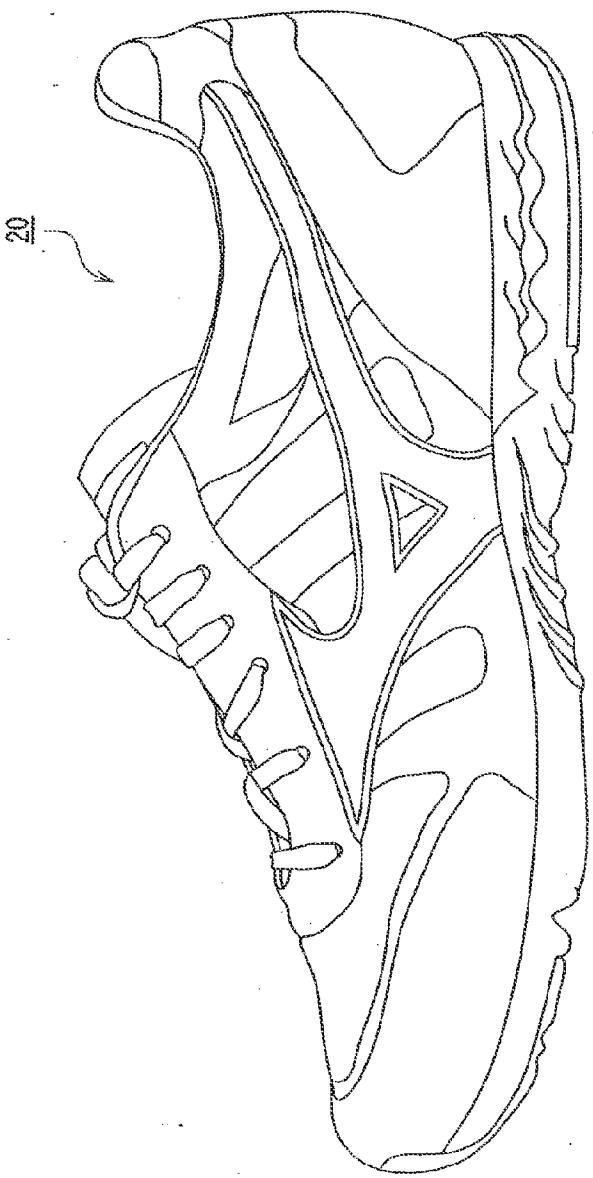



FIG. 4



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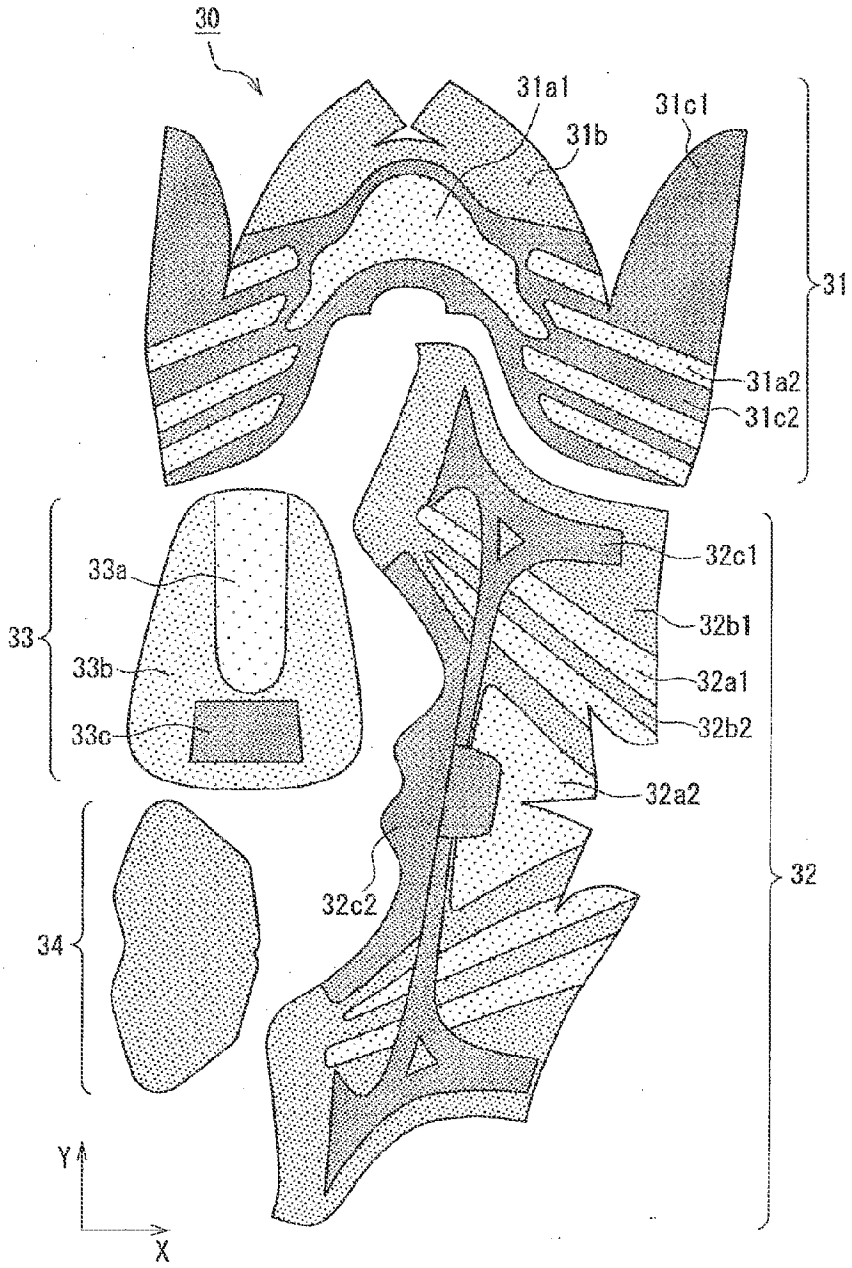



FIG. 5



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European Patent Office

# EUROPEAN SEARCH REPORT

Application Number
EP 04 00 0365

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.7) |
|---|---|---|---|
| A | PATENT ABSTRACTS OF JAPAN<br>vol. 1997, no. 06,<br>30 June 1997 (1997-06-30)<br>& JP 9 047302 A (MIZUNO CORP),<br>18 February 1997 (1997-02-18)<br>* abstract * | 1,10,15, 16 | A43B1/00<br>A43B5/06<br>A43B7/06<br>D04B21/02 |
| A | PATENT ABSTRACTS OF JAPAN<br>vol. 2002, no. 07,<br>3 July 2002 (2002-07-03)<br>& JP 2002 065303 A (TOHO TENAX CO LTD),<br>5 March 2002 (2002-03-05)<br>* abstract * | 1,10,15, 16 | |
| A | FR 2 319 488 A (CITC INDUSTRIES INC)<br>25 February 1977 (1977-02-25)<br>* the whole document * | 1,10,15, 16 | |
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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A43B
D04B

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| The Hague | 22 April 2004 | Cianci, S |

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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D : document cited in the application
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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 00 0365

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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22-04-2004

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82



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# GB1539886

Publication Title:

FOOTWEAR

Abstract:

Abstract not available for GB 1539886

(A)

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1 539 886

# PATENT SPECIFICATION (11) 1 539 886

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(44) Complete Specification published 7 Feb. 1979

(51) INT. CL.² A43B 23/04 3/10

(52) Index at acceptance

A3B 10B2 1B4A 1C3 1J 8G




## (54) FOOTWEAR

(71) We, ASHWORTHS (SLIPPERS) LIMITED, a British Company, of Albion Mills, Albion Street, Elton, Bury, Lancashire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention concerns footwear, and more particularly relatively soft-topped footwear, such as slippers.

In the conventionally-employed techniques for making slippers and the like, one starts with a generally U-shaped upper blank. This is closed by applying the free end edges together and sewing them, as at the "heel" of the upper, if desired incorporating any requisite heel stiffening. Next, a previously-prepared sole-piece (also known as a "sock") is sewn in place to the lower edge of the upper. If the top edge of the upper requires to be folded over and hemmed down, this is done too at this stage. The resultant assembly is then applied to a mould whereby a combined sole and heel of appropriate plastics material or rubber is injection-moulded in place, covering the undersurface of the sole-piece and the seam between the latter and the upper. After cooling and setting of the plastics material or rubber, an insole (or inner sock) is inserted to overlie the inner surface of the sole-piece, this insole being caused to adhere in place.

Thus, with these conventional techniques use is made essentially of three separate components two of which have to be united prior to the moulding of the sole and heel, and the assembly has to be allowed to cool prior to the final step of sticking the insole in place.

An object of the present invention is to provide a form of upper blank the use of which simplifies the footwear-making techniques above discussed.

With this object in view, the present invention provides a blank, for use in making an article of footwear, comprising a U-shaped panel which serves to form the footwear upper, characterised in that said U-shaped panel has formed integrally therewith a sole-piece which is contiguous with and extends from the outer edge of one limb of the U, the free outer edge of the U-shaped panel and the free edge of the sole-piece having registration marks to facilitate securement thereof together and being formed to define no discernable allowances.

The invention further includes a method of making an article of footwear, using a blank as aforesaid, which comprises closing the upper by bringing together the free heel and edges of the limbs of the U-shaped panel and securing said heel end edges together, connecting the free edge of the sole-piece to the corresponding lower free edge of the upper using the said registration marks on said edges to facilitate their alignment; and moulding a combined sole and heel plastics material or rubber, to the assembly so formed.

The invention further includes, of course, an article of footwear made by this method.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:—

Fig. 1 is a plan view of a preferred embodiment of the blank of the invention;

Fig. 2 is an enlarged section taken on the line 2—2 of Fig. 1 to illustrate the nature of the material of which the particular blank of Fig. 1 is made;

Fig. 3 is a perspective view illustrating a first step in a method of making an article of footwear using the blank of Fig. 1;

Fig. 4 is a plan view illustrating subsequent steps in the method;

Fig. 5 is a perspective view illustrating a subsequent stage in the method;

Fig. 6 is a perspective view illustrating the completed upper and insole assembly ready for a sole and heel to be applied thereto; and

Fig. 7 is a diagrammatic sectional view illustrating the assembly of Fig. 6 about to have a sole and heel moulded thereon as a final stage in the method of making the article of footwear.

Referring first to Figs. 1 and 2 of the drawings, these figures illustrate a preferred embodiment of the blank of the invention, which is for use in making a soft-topped

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Skechers v Nike

article of footwear, for example a slipper or casual shoe. The particular blank, indicated generally by the reference numeral 10, comprises a surface fabric layer 11, for instance of coloured interlock knit fabric, a cushioning layer 12 of a resilient foamed material such as polyurethane, a bonding layer 13, e.g. of unbleached interlock knit fabric, and an outer layer 14 of an elastomer imparting an appearance or feel of soft and pliable leather, but of course, any suitable upper material may be used. In Fig. 1, the blank is shown with the surface fabric layer 11 uppermost.

As can be seen from Fig. 1, the blank 10 comprises an upper panel 15 generally of U-shape providing side-by-side limbs 16, 17. The limb 16 has formed integrally therewith a sole piece 18, the overall shape of which conforms to a conventional sole-piece or sock, with one side edge of said sole-piece contiguous with the corresponding side edge of the limb 16, free outer edge 23 of the upper panel 15 and free outer edge 22 of the sole-piece having no discernable allowances other than registration marks 26, 27, 28, 30, 31 to facilitate securement thereof together, as will be described later.

Figs. 3 to 7 illustrate the steps involved in making a slipper or other soft-topped article of footwear using the blank of Figs. 1 and 2.

Firstly, the free heel end edges 19 of the limbs 16, 17 of the U-shaped upper blank 15 are brought together, with the surface fabric layer 11 outwards, and then these free heel end edges 19 are secured together with one or more lines of stitching as indicated at 20, as shown in Fig. 3. Thereupon, a binding tape 21 is sewn over the heel end edges 19 at the resultant seam or join, and the closed upper is then turned right-side-out as shown in Fig. 4.

If it should be desired to reinforce the footwear article's heel, appropriate reinforcing panels (not shown) are stitched in place instead of, or in addition to, the binding tape 21, prior to turning right-side-out.

The next step is to secure the sole-piece 18 in position. As is shown in Fig. 5, this is done by sewing the free outer edge 22 of the sole-piece 18 to the corresponding free outer edge 23 of the upper panel 15, as at 25, the edge 23 of the upper panel 15 being pleated where necessary, for example around the toe region as indicated at 24 in Fig. 5. To ensure proper registration of the various parts of the edge 22 and 23, during this sewing operation, the registration marks 26, 27 and 28, which are in the form of pointed protuberances, on the sole-piece 18 are registered respectively with the heel stitching 20 and with the corresponding registration marks 30 and 31 on the upper panel 15.

This securement of the sole-piece 18 having been completed, inner free edge 32 of the upper panel 15 is finished by folding inwards as a hem 33 and securing it in position by stitching, for example of a decorative configuration, as indicated at 34 in Fig. 6.

As a final stage in the making of the slipper or other article of footwear, the assembly, formed as above described and indicated by the numeral 35, is pulled onto a last 36 which is then positioned accurately in a heated multi-part mould 37 so as to define a mould space 38 corresponding to the desired outer configuration of a combined sole and heel of the slipper. An appropriate plastics or rubber material (not shown) is then injected into the mould space 38 thereby to mould said combined sole and heel onto the underside of the sole-piece 18, overlapping the stitched connection between the latter and the upper panel 15.

Upon removal from the last, any moulding sprue is cut away and the completed article of footwear is left to permit cooling and setting of the combined sole and heel, being otherwise substantially finished upon removal from the last and not requiring the addition of any further components.

The resultant slipper or other article of footwear is smart in appearance and snug in wear. Its primary advantage lies in the fact that it is significantly more economical to produce than in the case where traditional techniques are employed. Only one component is employed for the upper and sock, compared with three components in the traditional manufacture. Furthermore, the amount of sewing is less, and the steps of applying adhesive and assembling a component after moulding-on of the sole and heel are obviated.

Naturally, the invention is not confined to the precise details of the foregoing example, and variations may be made thereto within the scope of the following claims. Thus, it will readily be understood that the configuration of the blank and the material from which it is made may differ from what is illustrated, and the registration marks may be, for example, notches or small perforations. Naturally, decorative panels and/or trimmings, braids or ribbons may be provided on the finished article. The invention is not confined to the production of slippers but can be employed in relation to various styles of casual and soft-topped footwear.

WHAT WE CLAIM IS:—

1. A blank, for use in making an article of footwear, comprising a U-shaped panel which serves to form the footwear upper, characterised in that the said U-shaped panel has formed integrally therewith a sole-piece which is contiguous with and extends from the outer edge of one limb of the U, the free outer edge of the U-shaped panel

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and the free edge of the sole-piece having registration marks to facilitate securement thereof together and being formed to define the discernable allowances.

2. A blank as claimed in Claim 1, wherein the registration marks are in the form of pointed protuberances, notches or perforations.

3. A blank as claimed in Claim 1 or 2 and which is of elastomer-coated fabric.

4. A blank as claimed in Claim 3, in which a cushioning layer, of resilient foamed material, is bonded to the fabric layer.

5. A blank, for use in making an article of footwear, substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

6. A method of making an article of footwear, using a blank as claimed in any preceding claim, which comprises closing the upper by bringing together the free heel end edges of the limbs of the U-shaped panel and securing said heel end edges together, connecting the free edge of the sole-piece to the corresponding lower free edge of the upper using the said registration marks on said edges to facilitate their alignment; and moulding a combined sole and heel, of plastics material or rubber, to the assembly so formed.

7. A method as claimed in Claim 6, wherein a binding tape is sewn over the heel end edges at the joint or seam at the heel of the upper.

8. A method as claimed in Claim 6 or 7 wherein a reinforcing panel is stitched to the upper at the heel thereof.

9. A method as claimed in Claim 6, 7 or 8 wherein the inner free edge of the upper panel is finished by folding it inwards as a hem and securing it in position by stitching.

10. A method as claimed in any of claims 6 to 9 wherein the combined sole and heel is moulded-in so as to overlap the stitched connection between the sole-piece and the upper panel.

11. A method of making an article of footwear substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

12. An article of footwear made by the method of any of claims 6 to 11.

For the Applicants,
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Cursitor Street,
London, E.C.4.

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from which copies may be obtained.

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Skechers EX1013-p. 1582
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1 539 886 COMPLETE SPECIFICATION
2 SHEETS This drawing is a reproduction of the Original on a reduced scale.
SHEET 1

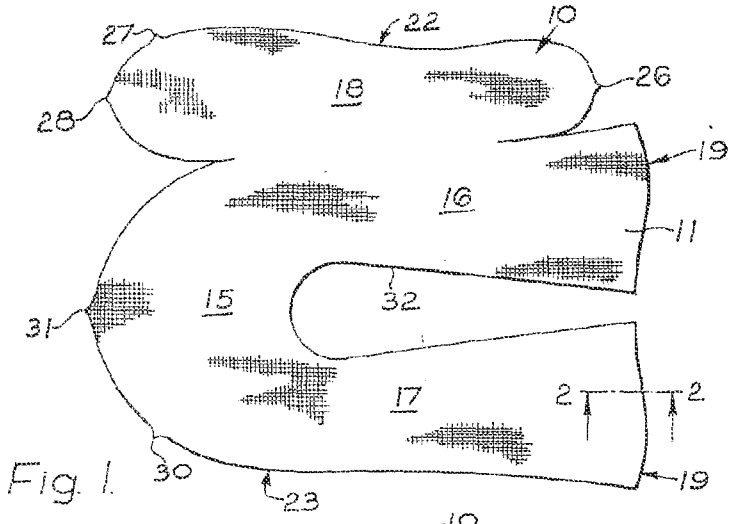



Fig. 1.

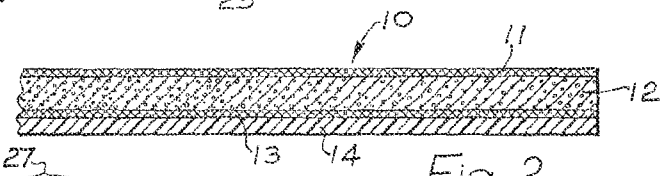



Fig. 2.

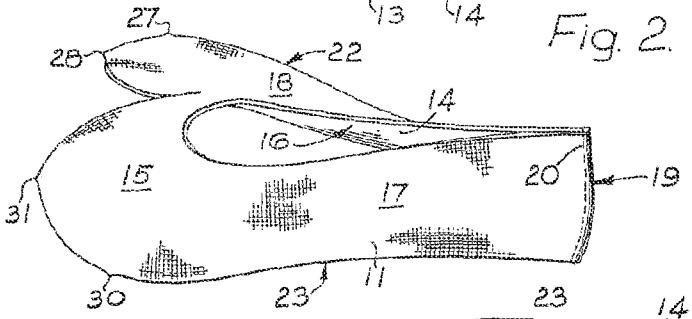



Fig. 3.

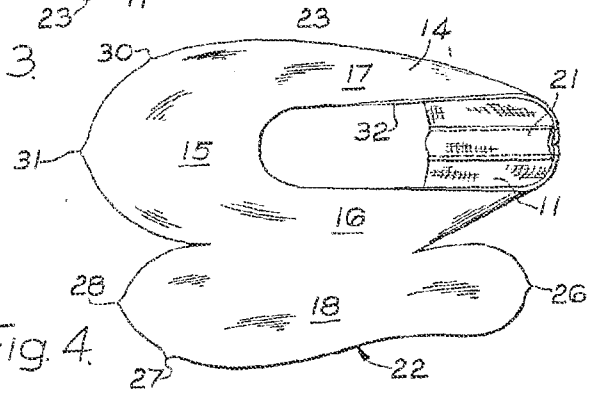



Fig. 4.

1 539 886 COMPLETE SPECIFICATION
2 SHEETS This drawing is a reproduction of the Original on a reduced scale.
SHEET 2

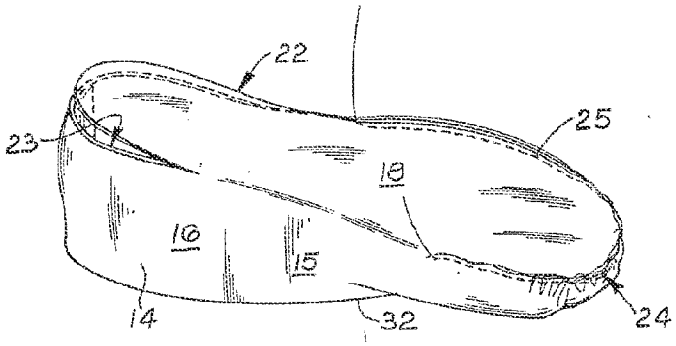



Fig. 5.

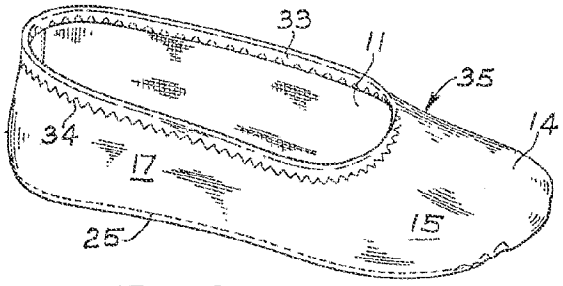



Fig. 6.

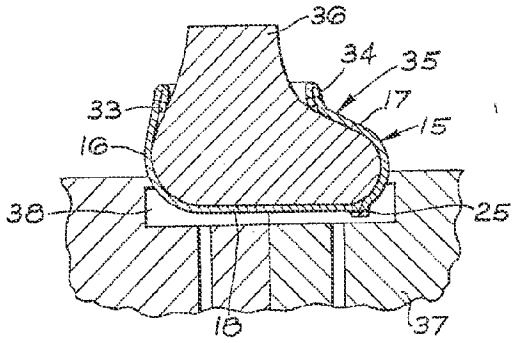



Fig. 7.

From the INTERNATIONAL SEARCHING AUTHORITY

# PCT

To:
BANNER & WITCOFF, LTD.
Attn. Kuzara, Byron S.
1001 G Street, N.W.
Eleventh Floor
Washington, D.C. 20001-4597
UNITED STATES OF AMERICA

005745.00439
DOCKETED
MAY 27 2005

ARTICLE 19 AMEND DUE 7/19/05
DEMAND/RESPONSE TO WRITTEN OPINION DUE 1/3/06

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

| | |
|---|---|
| Applicant's or agent's file reference<br>005745.00439 | Date of mailing *(day/month/year)*<br>19/05/2005<br>**FOR FURTHER ACTION** See paragraphs 1 and 4 below |
| International application No.<br>PCT/US2005/004776 | International filing date *(day/month/year)*<br>16/02/2005 |
| Applicant<br>NIKE, INC. | |

1. [x] The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   **Filing of amendments and statement under Article 19:**
   The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

   **When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

   **Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Fascimile No.: (41-22) 740.14.35

   **For more detailed instructions,** see the notes on the accompanying sheet.

2. [ ] The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. [ ] **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   [ ] the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   [ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until **30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

| | |
|---|---|
| Name and mailing address of the International Searching Authority<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | Authorized officer<br>Louis Kainde |

Form PCT/ISA/220 (January 2004) *(See notes on accompanying sheet)*

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

## INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

**What parts of the international application may be amended?**

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

**When?** Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

**Where not to file the amendments?**

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

**How?** Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

**The amendments must be made in the language in which the international application is to be published.**

**What documents must/may accompany the amendments?**

**Letter (Section 205(b)):**

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

**The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.**



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Skechers v Nike

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped),whether

(i) the claim is unchanged;

(ii) the claim is cancelled;

(iii) the claim is new;

(iv) the claim replaces one or more claims as filed;

(v) the claim is the result of the division of a claim as filed.

**The following examples illustrate the manner in which amendments must be explained in the accompanying letter:**

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added." .

2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."

3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."

4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

**"Statement under article 19(1)" (Rule 46.4)**

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

**It must be in the language in which the international appplication is to be published.**

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

**Consequence if a demand for international preliminary examination has already been filed**

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

**Consequence with regard to translation of the international application for entry into the national phase**

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.



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# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| Applicant's or agent's file reference 005745.00439 | FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below. | |
|---|---|---|
| International application No. PCT/US2005/004776 | International filing date *(day/month/year)* 16/02/2005 | (Earliest) Priority Date *(day/month/year)* 03/03/2004 |
| Applicant NIKE, INC. | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
      [ ] The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
   b. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box II).

3. [ ] **Unity of invention is lacking** (see Box III).

4. With regard to the **title,**
   [X] the text is approved as submitted by the applicant.
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   [X] the text is approved as submitted by the applicant.
   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. 1
      [X] as suggested by the applicant.
      [ ] as selected by this Authority, because the applicant failed to suggest a figure.
      [ ] as selected by this Authority, because this figure better characterizes the invention.
   b. [ ] none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (January 2004)

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A43B1/04 A43B9/02 A43B23/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A43B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | US 5 345 638 A (NISHIDA ET AL)<br>13 September 1994 (1994-09-13)<br><br>column 3, line 6 - column 5, line 62;<br>figures<br>-----<br>-/-- | 1-7,<br>11-17,<br>19,20,<br>24-30,<br>32-37,<br>39,41,<br>44-49,<br>58,62-67 |

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 11 May 2005 | 19/05/2005 |

| Name and mailing address of the ISA | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL – 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | Cianci, S |

Form PCT/ISA/210 (second sheet) (January 2004)



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Skechers v Nike

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 12/879,517 | 09/10/2010 | Bhupesh Dua | 005127.01568 |

CONFIRMATION NO. 7137

22910
BANNER & WITCOFF, LTD.
28 STATE STREET
SUITE 1800
BOSTON, MA 02109-1701

PUBLICATION NOTICE

*OC000000045206788*

**Title:**ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

**Publication No.**US-2010-0325916-A1
**Publication Date:**12/30/2010

## NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 12/879,517 | 09/10/2010 | Bhupesh Dua | 005127.01568 | 7137 |

22910 7590 03/04/2011
BANNER & WITCOFF, LTD.
28 STATE STREET
SUITE 1800
BOSTON, MA 02109-1701

| EXAMINER | |
|---|---|
| PATTERSON, MARIE D | |
| ART UNIT | PAPER NUMBER |
| 3728 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 03/04/2011 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 12/879,517 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | Marie Patterson | 3728 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-39 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-39 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 10/13/10.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-39 are rejected on the ground of nonstatutory double patenting over claims 1-46 of U. S. Patent No. 7347011 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: both claim an article of footwear comprising an upper incorporating a knitted textile element having a plurality of knit contructions or other limitations and the upper secured to a sole except that this application claims the specific knitted textile being "circular-knitted". The Patent does disclose and claims a circular knitted textile (see claim 37) and it would have been obvious to claim the circular-knitted limitation in the independent claims of the Patent.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See MPEP § 804.

***Allowable Subject Matter***

3. Claims 1-39 are allowed subject to the filing of a Proper Terminal Disclaimer.

1. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Other useful information can be obtained at the PTO Home Page at www.uspto.gov.

In order to avoid potential delays, Technology Center 3700 is encouraging FAXing of responses to Office Actions directly into the Center at *(571)273-8300* **(FORMAL FAXES ONLY)**. Please identify Examiner Marie Patterson of Art Unit 3728 at the top of your cover sheet.

Any inquiry concerning the MERITS of this examination from the examiner should be directed to Marie Patterson whose telephone number is (571) 272-4559. The examiner can normally be reached from 6AM - 4PM Mon-Wed.

/Marie Patterson/
Primary Examiner
Art Unit 3728

| Notice of References Cited | Application/Control No. 12/879,517 | Applicant(s)/Patent Under Reexamination DUA ET AL. | |
|---|---|---|---|
| | Examiner Marie Patterson | Art Unit 3728 | Page 1 of 1 |

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| | L | US- | | | |
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**NON-PATENT DOCUMENTS**

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Search Notes | Application/Control No. | Applicant(s)/Patent under Reexamination | |
|---|---|---|---|
| | 12/879,517 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | Marie Patterson | 3728 | |

| SEARCHED | | | |
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| 036 | 45, 10, 3A, 55 | 3/2/2011 | /MP/ |
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| SEARCH NOTES (INCLUDING SEARCH STRATEGY) | | |
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 12879517 |
| Filing Date | 2010-09-10 |
| First Named Inventor | Bhupesh Dua |
| Art Unit | 3728 |
| Examiner Name | |
| Attorney Docket Number | 005127.01568 |

| U.S.PATENTS | | | | | | Remove |
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|---|---|---|
| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
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| | Art Unit | 3728 |
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| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

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| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

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| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
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| | 7 | 1539886 | GB | | 1979-02-07 | Ashworths Ltd. | | ☐ |

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| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | Office Action issued July 27, 2007 in corresponding Chinese Patent Application No.: 2005800066703, and English translation thereof. | ☒ |
| | 2 | Office Action issued February 15, 2008 in corresponding Chinese Patent Application No.: 2005800066703, and English translation thereof. | ☒ |
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| | 6 | Pgae 1 of Lyden Letter of April 21, 2010 - Redacted. | ☐ |

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|---|---|---|
| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | /Marie Patterson/ | Date Considered | 03/02/2011 |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
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| In Re the Patent Application of: | ) Confirmation No.: 7137 |
| **Bhupesh DUA, et al.** | ) Group Art Unit: 3728 |
| Appln. No.: 12/879,517 | ) Examiner: Marie D. Patterson |
| Filed: September 10, 2010 | ) Docket No.: 005127.01568 |
| For: AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | ) |

**RESPONSE TO OFFICE ACTION**

Mail Stop – Amendment
Commissioner for Patents
U.S. Patent and Trademark Office
Alexandria, VA 22313

Sir:

In response to the Office Action of March 4, 2011, Applicants hereby provide the attached Terminal Disclaimer and Terminal Disclaimer Fee.

Applicants believe that this application is in condition for allowance and respectfully request action to that effect. Should further information be needed, the Examiner is invited to contact the undersigned attorney by telephone.

Respectfully submitted,

Dated: March 25, 2011

By: /Jeanne M. Tanner/
Jeanne M. Tanner, Reg. No. 45,156
BANNER & WITCOFF, LTD.
28 State Street, Suite 1800
Boston, MA 02109
(617) 720-9600

| Electronic Patent Application Fee Transmittal | |
|---|---|
| **Application Number:** | 12879517 |
| **Filing Date:** | 10-Sep-2010 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Attorney Docket Number:** | 005127.01568 |
| Filed as Large Entity | |

**Utility under 35 USC 111(a) Filing Fees**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| Statutory or terminal disclaimer | 1814 | 1 | 140 | 140 |
| | | **Total in USD ($)** | | **140** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 9739428 |
| **Application Number:** | 12879517 |
| **International Application Number:** | |
| **Confirmation Number:** | 7137 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22910 |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Filer Authorized By:** | Jeanne Marian Tanner |
| **Attorney Docket Number:** | 005127.01568 |
| **Receipt Date:** | 25-MAR-2011 |
| **Filing Date:** | 10-SEP-2010 |
| **Time Stamp:** | 15:35:22 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Deposit Account |
| Payment was successfully received in RAM | $140 |
| RAM confirmation Number | 2089 |
| Deposit Account | 190733 |
| Authorized User | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | Terminal Disclaimer Filed | 005127-01568_Terminal-Disclaimer.pdf | 213540<br>2fd0a71f0b46587dce6883e358cfe3a50626f29f7 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Amendment/Req. Reconsideration-After Non-Final Reject | 005127-01568_Response-w-Terminal-Disclaimer.pdf | 61058<br>5eba519f64841088331d5b631282e7d3e46f6b80c | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Fee Worksheet (PTO-875) | fee-info.pdf | 30430<br>fbaba8ccdc42dd2c1fa5c053da609ab8ccdaeb9b | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 305028 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**<u>New Applications Under 35 U.S.C. 111</u>**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**<u>National Stage of an International Application under 35 U.S.C. 371</u>**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**<u>New International Application Filed with the USPTO as a Receiving Office</u>**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/26 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| **TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT** | Docket Number (Optional) 005127.01568 |
|---|---|

In re Application of: Bhupesh Dua

Application No.: 12/879,517

Filed: September 10, 2010

For: An Article of Footwear Having a Textile Upper

The owner*, NIKE, Inc., of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term **prior patent** No. 7,347,011 as the term of said prior patent is defined in 35 U.S.C. 154 and 173, and as the term of said **prior patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. 154 and 173 of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

I hereby declare that all statements made herein of 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 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 45,156

/Jeanne M. Tanner/ — Signature
2011-03-25 — Date

Jeanne M. Tanner — Typed or printed name

617-720-9600 — Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

## Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

| Application Number | Application/Control No. | Applicant(s)/Patent under Reexamination | |
|---|---|---|---|
| | 12/879,517 | DUA ET AL. | |
| | | | |

| Document Code - DISQ | Internal Document – DO NOT MAIL |
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| TERMINAL DISCLAIMER | ☒ APPROVED | ☐ DISAPPROVED |
|---|---|---|
| Date Filed : March 25, 2011 | This patent is subject to a Terminal Disclaimer | |

| Approved/Disapproved by: |
|---|
| Henry D. Jefferson |

U.S. Patent and Trademark Office

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 12/879,517 | 09/10/2010 | Bhupesh Dua | 005127.01568 | 7137 |

22910 7590 04/04/2011
BANNER & WITCOFF, LTD.
28 STATE STREET
SUITE 1800
BOSTON, MA 02109-1701

| EXAMINER | |
|---|---|
| PATTERSON, MARIE D | |
| ART UNIT | PAPER NUMBER |
| 3728 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 04/04/2011 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 12/879,517 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | Marie Patterson | 3728 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 March 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *22-29* is/are allowed.

6)☒ Claim(s) *1,2,7-21,30,31 and 35-39* is/are rejected.

7)☒ Claim(s) *3-6, and 32-34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 7, 9-18, 20, 21, 30, 31, and 35-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Ducharme (2701458).

Ducharme discloses an article of footwear with an upper 10 made of circular knit textile (col. 1, lines 26,33,60 and claim 3). Ducharme discloses in Fig. 2 and col. 2, lines 46-48 a circular knitted textile structure. The structure is disclosed to form a plurality of socks 10 (elements). The socks (elements) are disclosed to have a plurality of knit constructions in the form of different stitches as noted in col. 2, lines 23-34 (tuck and plain stitches). Ducharme discloses in Fig. 2 and col. 2, lines 45-50 that the sock (element) 10 is closed at the toe end at line 12 and thereby forms a void for receiving a foot. Ducharme discloses sole structure 40 secured to the upper 10 in Fig. 3 and col. 2, lines 58-61. Further, as to the limitation "*the circular-knitted textile element being removed from a circular knitted textile structure*" recited in claim 1, such is considered a product-by-process limitation and is non-limiting to the product of an article of footwear being claimed. None-the-less, Ducharme clearly discloses this limitation wherein the circular knitted textile sock 10 is removed from the circular knitted structure of Fig. 2.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ducharme in view of Norton (6558784).

Ducharme shows an article of footwear substantially as claimed except for the upper comprising 3 layers. Notrton teaches forming an upper with at least three layers (20, 22, and 24) with one being a knit layer (24). It would have been obvious to provide three layers as taught by Norton in the upper of the footwear of Ducharme to increase comfort and durability of the footwear.

***Allowable Subject Matter***

5. Claims 3-6, and 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 22-29 are allowed.

***Terminal Disclaimer***

7. The terminal disclaimer filed on 3/25/11 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Patent No 7347011 has been reviewed and is accepted. The terminal disclaimer has been recorded.

1. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Other useful information can be obtained at the PTO Home Page at www.uspto.gov.

In order to avoid potential delays, Technology Center 3700 is encouraging FAXing of responses to Office Actions directly into the Center at *(571)273-8300* **(FORMAL FAXES ONLY)**. Please identify Examiner Marie Patterson of Art Unit 3728 at the top of your cover sheet.

Any inquiry concerning the MERITS of this examination from the examiner should be directed to Marie Patterson whose telephone number is (571) 272-4559. The examiner can normally be reached from 6AM - 4PM Mon-Wed.

/Marie Patterson/
Primary Examiner
Art Unit 3728

| Notice of References Cited | Application/Control No. 12/879,517 | Applicant(s)/Patent Under Reexamination DUA ET AL. | |
|---|---|---|---|
| | Examiner Marie Patterson | Art Unit 3728 | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification |
|---|---|---|---|---|---|
| * | A | US-2,701,458 | 02-1955 | VICTOR DUCHARME | 66/180 |
| | B | US- | | | |
| | C | US- | | | |
| | D | US- | | | |
| | E | US- | | | |
| | F | US- | | | |
| | G | US- | | | |
| | H | US- | | | |
| | I | US- | | | |
| | J | US- | | | |
| | K | US- | | | |
| | L | US- | | | |
| | M | US- | | | |

**FOREIGN PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | Classification |
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**NON-PATENT DOCUMENTS**

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
| | U | |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Search Notes | Application/Control No. | Applicant(s)/Patent under Reexamination | |
|---|---|---|---|
| | 12/879,517 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | Marie Patterson | 3728 | |

| SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 036 | 45, 10, 3A, 55 | | |
| Above | Updated | 3/31/2011 | /MP/ |
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| SEARCH NOTES (INCLUDING SEARCH STRATEGY) | | |
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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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|---|---|
| In Re the Patent Application of: | ) Confirmation No.: 7137 |
| **Bhupesh DUA, et al.** | ) Group Art Unit: 3728 |
| Appln. No.: 12/879,517 | ) Examiner: Marie D. Patterson |
| Filed: September 10, 2010 | ) Docket No.: 005127.01568 |
| For: AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | ) |

## RESPONSE TO OFFICE ACTION

Mail Stop – Amendment
Commissioner for Patents
U.S. Patent and Trademark Office
Alexandria, VA 22313

Sir:

In response to the Office Action mailed April 4, 2011 in the above-identified patent application, Applicants respectfully submit the following:

**Amendments to the Claims** begin on page 2.

**Remarks** begin on page 10.

## General Authorization of Payment of Fees

If any fees are due in this application, whether or not associated with this filing, please charge any fees due to Deposit Account No. 19-0733.

## AMENDMENTS TO THE CLAIMS

Please replace all previous listings of the claims with the following:

1. (Currently Amended) An article of footwear comprising:

an upper incorporating a circular-knitted textile element having a plurality of knit constructions, the circular-knitted textile element being removed from a circular-knitted textile structure, and further having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and

a sole structure secured to the upper.

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

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

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



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Skechers v Nike

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

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

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

8. (Original) The article of footwear recited in claim 1, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer.

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

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



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

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

13. (Original) The article of footwear recited in claim 1, wherein the circular-knitted textile element forms an interior surface of the upper.

14. (Currently Amended) An article of footwear comprising:

an upper incorporating a circular-knitted textile element, the circular-knitted textile element having a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying properties to the circular-knitted textile element, wherein the varying properties are aesthetic or structural, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer; and

a sole structure secured to the upper.



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15. (Original) The article of footwear recited in claim 14, wherein the first stitch configuration provides a substantially smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smooth texture.

16. (Original) The article of footwear recited in claim 15, wherein the second stitch configuration forms a rib structure in the second area.

17. (Original) The article of footwear recited in claim 14, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the circular-knitted textile element.

18. (Original) The article of footwear recited in claim 14, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

19. (Cancelled)

20. (Original) The article of footwear recited in claim 14, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper.

21. (Original) The article of footwear recited in claim 14, wherein the circular-knitted textile element forms an interior surface of the upper.



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22. (Original) An article of footwear comprising:

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

a sole structure secured to the upper.

23. (Original) The article of footwear recited in claim 22, wherein the footwear includes a third seam extending through the forefoot area of the upper.

24. (Original) The article of footwear recited in claim 22, wherein at least one of the knit constructions forms an aperture in the circular-knitted textile element.

25. (Original) The article of footwear recited in claim 22, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying elasticity of the circular-knitted textile element.

26. (Original) The article of footwear recited in claim 22, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying air permeability of the circular-knitted textile element.



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27. (Original) The article of footwear recited in claim 22, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

28. (Original) The article of footwear recited in claim 22, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper.

29. (Original) The article of footwear recited in claim 22, wherein the circular-knitted textile element forms an interior surface of the footwear, and at least one additional textile element forms an exterior surface of the footwear.

30. (Currently Amended) An article of footwear comprising:

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

a sole structure secured to the upper.



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31. (Original) The article of footwear recited in claim 30, wherein the circular-knitted textile element has a structure formed by a wide-tube circular knitting machine.

32. (Original) The article of footwear recited in claim 30, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper.

33. (Original) The article of footwear recited in claim 32, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper.

34. (Original) The article of footwear recited in claim 33, wherein the edges include at least a pair of third edges that are joined to form a second seam extending through a forefoot area of the upper.

35. (Original) The article of footwear recited in claim 30, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

36. (Original) The article of footwear recited in claim 30, wherein the circular-knitted textile element forms an interior surface of the upper.

37. (Currently Amended) An article of footwear comprising:



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Skechers v Nike

an upper incorporating a knitted textile element, wherein the knitted textile element is formed unitarily with a knitted textile structure, the knitted textile element being removed from the knitted textile structure that includes an outline of the knitted textile element to form edges, the knitted textile element having a first area with a first unitary construction and a second area with a second unitary construction different from the first unitary construction, the first area having a first set of properties, and the second area having a second set of properties that is different from the first set of properties to impart varying characteristics to the textile element, and further having the edges joined together to form a seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper; and

a sole structure secured to the upper.

38. (Original) The article of footwear recited in claim 37, wherein the first set of properties and the second set of properties are at least one of a stitch configuration and a yarn type.

39. (Original) The article of footwear recited in claim 37, wherein the knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.



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## REMARKS

Applicants have carefully considered the Office Action mailed April 4, 2011, and respectfully request reconsideration of the merits of this application.

***Status***

Claims 1-39 are pending in the Office Action. Claims 1, 14, 30 and 37 have been amended. Claim 19 has been cancelled. Claims 1, 14, 22, 30 and 37 are independent claims. No new subject matter is included in this Response.

In the Office Action:

- claims 1, 2, 7, 9-18, 20, 21, 30, 31 and 35-39 were rejected under 35 USC § 102(b) as being anticipated by Ducharme (US 2,701,458);
- claims 8 and 19 were rejected under 35 USC § 103(a) as being unpatentable over Ducharme in view of Norton (US 6,558,784);
- claims 3-6 and 32-34 were objected to and would be allowable if rewritten in independent form; and
- claims 22-29 were allowed.

Applicants acknowledge the Examiner's indication that claims 3-6 and 32-34 contain allowable subject matter and that claims 22-29 are allowed.

***Rejections Under 35 USC § 102(b)***

Claims 1, 2, 7, 9-18, 20, 21, 30, 31 and 35-39 were rejected under 35 USC § 102(b) as being anticipated by Ducharme. Claims 1, 14, 30 and 37 are independent claims.

As an initial matter, claim 14 has been amended to include the recitation of claim 19 and is, thus, discussed below with respect to the rejection of claim 19.

Amended claim 1 recites:

"An article of footwear comprising:
an upper incorporating a circular-knitted textile element having a plurality of knit constructions, the circular-knitted textile element being



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> removed from a circular-knitted textile structure, and further having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and
> a sole structure secured to the upper."

Amended claim 30 recites, in part:

> "the circular-knitted textile element having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot."

Amended claim 37 recites, in part:

> "a knitted textile element ... having the edges joined together to form a seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper."

Ducharme fails to disclose that the circular-knitted textile element has longitudinal edges that are joined together to define at least a portion of a void for receiving a foot. Ducharme also fails to disclose having the edges of a knitted textile element joined together to form a seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper.

Rather, at most, Ducharme discloses a seam extending across the toe, from a lateral to a medial side, of the moccasin sock. Ducharme fails to disclose longitudinal edges joined together.

As Ducharme fails to disclose each and every element of the amended claims, Ducharme fails to anticipate these claims. Applicants respectfully submit that claims 1, 30 and 37, and their dependent claims are allowable over the cited prior art.

***Rejections Under 35 USC § 103(a)***

Claims 8 and 19 were rejected under 35 USC § 103(a) as being unpatentable over Ducharme in view of Norton. Claims 8 and 19 depend from claims 1 and 14, respectively, and contain additional recitations thereto

As noted above, amended claim 14 incorporates the recitation of claim 19.

Claims 8 and 14 recite:

> "wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a



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portion of the interior layer."

Thus, the upper includes three layers, wherein at least a portion of the interior layer of the upper is formed by the circular-knitted textile element.

The Examiner recognizes that Ducharme fails to disclose that the "circular-knitted textile element forms at least a portion of the interior layer," and relies on Norton to cure this deficiency

Norton also fails to disclose that the "circular-knitted textile element forms at least a portion of the interior layer." Specifically, referring to Fig. 2 and col. 4, lines 7-18, Norton discloses a three layer upper composed of a first thermoplastic foam layer 20, a second thermoplastic urethane layer 22, and a third fabric layer 24 interposed between the first and second layers 20, 22.

Norton's interposed third layer 24 does not correspond to the claimed "interior layer." Rather, Norton's interposed third layer 24 is located between the first layer 20 and the second layer 24, and therefore at most, Norton's interposed third layer 24 corresponds to the claimed "intermediate layer."

Should the Examiner maintain that Norton's interposed third layer 24 corresponds to the claimed "interior layer," Applicants respectfully request that the Examiner identify which layer of Norton would allegedly correspond to the claimed "intermediate layer."

Thus, for at least the reasons discussed above, Applicants respectfully submit that claims 8 and 14 are allowable over the cited art.



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***Conclusion***

Applicants believe that this application is in condition for allowance and respectfully request action to that effect. Should further information be needed, the Examiner is invited to contact the undersigned attorney by telephone.

Respectfully submitted,

Dated: May 16, 2011

By: /Jeanne M. Tanner/

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| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 10095305 |
| **Application Number:** | 12879517 |
| **International Application Number:** | |
| **Confirmation Number:** | 7137 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22910 |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Filer Authorized By:** | Jeanne Marian Tanner |
| **Attorney Docket Number:** | 005127.01568 |
| **Receipt Date:** | 16-MAY-2011 |
| **Filing Date:** | 10-SEP-2010 |
| **Time Stamp:** | 14:02:20 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| Submitted with Payment | no |
|---|---|

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 005127-01568_Response-to-OA.pdf | 125880<br>6f8cb80ce016d2b3e451dc02e4639745773979c1 | yes | 13 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Amendment/Req. Reconsideration-After Non-Final Reject | 1 | 1 |
| | Claims | 2 | 9 |
| | Applicant Arguments/Remarks Made in an Amendment | 10 | 13 |
| **Warnings:** | | | |
| **Information:** | | | |
| | **Total Files Size (in bytes):** | 125880 | |

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**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

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| **PATENT APPLICATION FEE DETERMINATION RECORD** Substitute for Form PTO-875 | Application or Docket Number 12/879,517 | Filing Date 09/10/2010 | ☐ To be Mailed |
|---|---|---|---|

## APPLICATION AS FILED – PART I

| | (Column 1) | (Column 2) | SMALL ENTITY ☐ | | OR | OTHER THAN SMALL ENTITY | |
|---|---|---|---|---|---|---|---|
| FOR | NUMBER FILED | NUMBER EXTRA | RATE ($) | FEE ($) | | RATE ($) | FEE ($) |
| ☐ BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | | | N/A | |
| ☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | | | N/A | |
| ☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | | | N/A | |
| TOTAL CLAIMS (37 CFR 1.16(i)) | minus 20 = | * | X $ = | | OR | X $ = | |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | minus 3 = | * | X $ = | | | X $ = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | | | TOTAL | |

## APPLICATION AS AMENDED – PART II

AMENDMENT **05/16/2011**

| | (Column 1) | | (Column 2) | (Column 3) | SMALL ENTITY | | OR | OTHER THAN SMALL ENTITY | |
|---|---|---|---|---|---|---|---|---|---|
| | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) | | RATE ($) | ADDITIONAL FEE ($) |
| Total (37 CFR 1.16(i)) | * 38 | Minus | ** 39 | = 0 | X $ = | | OR | X $52= | 0 |
| Independent (37 CFR 1.16(h)) | * 5 | Minus | ***5 | = 0 | X $ = | | OR | X $220= | 0 |
| ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | **0** |

AMENDMENT

| | (Column 1) | | (Column 2) | (Column 3) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) | | RATE ($) | ADDITIONAL FEE ($) |
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | X $ = | | OR | X $ = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | X $ = | | OR | X $ = | |
| ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/MONIQUE BRUNSON/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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22910 7590 06/24/2011

BANNER & WITCOFF, LTD.
28 STATE STREET
SUITE 1800
BOSTON, MA 02109-1701

| EXAMINER | |
|---|---|
| PATTERSON, MARIE D | |
| ART UNIT | PAPER NUMBER |
| 3765 | |

DATE MAILED: 06/24/2011

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 12/879,517 | 09/10/2010 | Bhupesh Dua | 005127.01568 | 7137 |

TITLE OF INVENTION: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | NO | $1510 | $300 | $0 | $1810 | 09/26/2011 |

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

**HOW TO REPLY TO THIS NOTICE:**

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If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

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If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

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PTOL-85 (Rev. 02/11)

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## PART B - FEE(S) TRANSMITTAL

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|---|
| (Depositor's name) |
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| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 12/879,517 | 09/10/2010 | Bhupesh Dua | 005127.01568 | 7137 |

TITLE OF INVENTION: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | NO | $1510 | $300 | $0 | $1810 | 09/26/2011 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| PATTERSON, MARIE D | 3765 | 012-14600C |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:

❑ Issue Fee
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❑ A check is enclosed.
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5. **Change in Entity Status** (from status indicated above)

❑ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ❑ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 12/879,517 | 09/10/2010 | Bhupesh Dua | 005127.01568 | 7137 |

22910 7590 06/24/2011

BANNER & WITCOFF, LTD.
28 STATE STREET
SUITE 1800
BOSTON, MA 02109-1701

| EXAMINER | |
|---|---|
| PATTERSON, MARIE D | |
| ART UNIT | PAPER NUMBER |
| 3765 | |

DATE MAILED: 06/24/2011

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

| Notice of Allowability | Application No. | Applicant(s) | |
|---|---|---|---|
| | 12/879,517 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | MARIE PATTERSON | 3765 | |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--***

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment filed 5/16/11*.

2. ☒ The allowed claim(s) is/are *1-18 and 20-39*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

1. The following is an examiner's statement of reasons for allowance: In reference to the amended limitation of longitudinal edges being joined, such edges are considered to be edges extending in a direction from the toe portion to the heel portion which overcomes the seam shown by Ducharme which is clearly a seam extending across/laterally on the circular textile element and which extends medial to laterally in the final footwear which is perpendicular to the direction claimed by applicant.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

1. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Other useful information can be obtained at the PTO Home Page at www.uspto.gov.

In order to avoid potential delays, Technology Center 3700 is encouraging FAXing of responses to Office Actions directly into the Center at *(571)273-8300* **(FORMAL FAXES ONLY)**. Please identify Examiner Marie Patterson of Art Unit 3765 at the top of your cover sheet.

Any inquiry concerning the MERITS of this examination from the examiner should be directed to Marie Patterson whose telephone number is (571) 272-4559. The examiner can normally be reached from 6AM - 4PM Mon-Wed.

/Marie Patterson/
Primary Examiner
Art Unit 3765

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

# BIB DATA SHEET

**CONFIRMATION NO. 7137**

| SERIAL NUMBER | FILING or 371(c) DATE | CLASS | GROUP ART UNIT | ATTORNEY DOCKET NO. |
|---|---|---|---|---|
| 12/879,517 | 09/10/2010<br>RULE | 012 | 3765 | 005127.01568 |

**APPLICANTS**

Bhupesh Dua, Portland, OR;
Edward Nathaniel Thomas, Portland, OR;

**** CONTINUING DATA **************************

This application is a CON of 12/032,995 02/18/2008 PAT 7,814,598
which is a DIV of 10/791,289 03/03/2004 PAT 7,347,011

**** FOREIGN APPLICATIONS **************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

09/17/2010

| Foreign Priority claimed | 35 USC 119(a-d) conditions met | Verified and Acknowledged | Met after Allowance | STATE OR COUNTRY | SHEETS DRAWINGS | TOTAL CLAIMS | INDEPENDENT CLAIMS |
|---|---|---|---|---|---|---|---|
| ☐ Yes ☑ No | ☐ Yes ☑ No | /MARIE D PATTERSON/<br>Examiner's Signature | Initials | OR | 12 | 39 | 5 |

**ADDRESS**

BANNER & WITCOFF, LTD.
28 STATE STREET
SUITE 1800
BOSTON, MA 02109-1701
UNITED STATES

**TITLE**

ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

| FILING FEE RECEIVED | | |
|---|---|---|
| 2518 | FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following: | ☐ All Fees<br>☐ 1.16 Fees (Filing)<br>☐ 1.17 Fees (Processing Ext. of time)<br>☐ 1.18 Fees (Issue)<br>☐ Other _____<br>☐ Credit |

BIB (Rev. 05/07).

| Search Notes | Application/Control No. | Applicant(s)/Patent under Reexamination | |
|---|---|---|---|
| | 12/879,517 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | MARIE PATTERSON | 3765 | |

| SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 036 | 45, 10, 3A, 55 | | |
| Update | Above | 6/20/2011 | /MP/ |
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| INTERFERENCE SEARCHED | | | |
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| Class | Subclass | Date | Examiner |
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| East Update above | | 6/20/2011 | /MP/ |

| SEARCH NOTES (INCLUDING SEARCH STRATEGY) | | |
|---|---|---|
| | DATE | EXMR |
| Consulted Parent application | 6/20/2011 | /MP/ |
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| Issue Classification | Application/Control No. | Applicant(s)/Patent under Reexamination | |
|---|---|---|---|
| | 12/879,517 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | MARIE PATTERSON | 3765 | |

# ISSUE CLASSIFICATION

| ORIGINAL | | | | | | CROSS REFERENCE(S) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLASS | | | | SUBCLASS | CLASS | SUBCLASS (ONE SUBCLASS PER BLOCK) | | | | | | | | |
| 036 | | | | 45 | 036 | 55 | 10 | | | | | | | |
| INTERNATIONAL CLASSIFICATION | | | | | | | | | | | | | | |
| A | 4 | 3 | B | 23/00 | | | | | | | | | | |
| A | 4 | 3 | B | 23/07 | | | | | | | | | | |
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|---|---|---|
| ---------- (Assistant Examiner) (Date) | /Marie Patterson/ 6/20/11 (Primary Examiner) (Date) | Total Claims Allowed: 38 |
| (Legal Instruments Examiner) (Date) | | O.G. Print Claim(s): 1 / O.G. Print Fig.: 9 |

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

| Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 30 | 31 | | 61 | | 91 | | 121 | | 151 | | 181 |
| 2 | 2 | 31 | 32 | | 62 | | 92 | | 122 | | 152 | | 182 |
| 3 | 3 | 32 | 33 | | 63 | | 93 | | 123 | | 153 | | 183 |
| 4 | 4 | 33 | 34 | | 64 | | 94 | | 124 | | 154 | | 184 |
| 5 | 5 | 34 | 35 | | 65 | | 95 | | 125 | | 155 | | 185 |
| 6 | 6 | 35 | 36 | | 66 | | 96 | | 126 | | 156 | | 186 |
| 7 | 7 | 36 | 37 | | 67 | | 97 | | 127 | | 157 | | 187 |
| 8 | 8 | 37 | 38 | | 68 | | 98 | | 128 | | 158 | | 188 |
| 9 | 9 | 38 | 39 | | 69 | | 99 | | 129 | | 159 | | 189 |
| 10 | 10 | | 40 | | 70 | | 100 | | 130 | | 160 | | 190 |
| 11 | 11 | | 41 | | 71 | | 101 | | 131 | | 161 | | 191 |
| 12 | 12 | | 42 | | 72 | | 102 | | 132 | | 162 | | 192 |
| 13 | 13 | | 43 | | 73 | | 103 | | 133 | | 163 | | 193 |
| 14 | 14 | | 44 | | 74 | | 104 | | 134 | | 164 | | 194 |
| 15 | 15 | | 45 | | 75 | | 105 | | 135 | | 165 | | 195 |
| 16 | 16 | | 46 | | 76 | | 106 | | 136 | | 166 | | 196 |
| 17 | 17 | | 47 | | 77 | | 107 | | 137 | | 167 | | 197 |
| 18 | 18 | | 48 | | 78 | | 108 | | 138 | | 168 | | 198 |
| | 19 | | 49 | | 79 | | 109 | | 139 | | 169 | | 199 |
| 19 | 20 | | 50 | | 80 | | 110 | | 140 | | 170 | | 200 |
| 20 | 21 | | 51 | | 81 | | 111 | | 141 | | 171 | | 201 |
| 21 | 22 | | 52 | | 82 | | 112 | | 142 | | 172 | | 202 |
| 22 | 23 | | 53 | | 83 | | 113 | | 143 | | 173 | | 203 |
| 23 | 24 | | 54 | | 84 | | 114 | | 144 | | 174 | | 204 |
| 24 | 25 | | 55 | | 85 | | 115 | | 145 | | 175 | | 205 |
| 25 | 26 | | 56 | | 86 | | 116 | | 146 | | 176 | | 206 |
| 26 | 27 | | 57 | | 87 | | 117 | | 147 | | 177 | | 207 |
| 27 | 28 | | 58 | | 88 | | 118 | | 148 | | 178 | | 208 |
| 28 | 29 | | 59 | | 89 | | 119 | | 149 | | 179 | | 209 |
| 29 | 30 | | 60 | | 90 | | 120 | | 150 | | 180 | | 210 |

## EAST Search History

## EAST Search History (Interference)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L3 | 369 | ((36/45) or (36/10) or (36/3A) or (36/55)). CCLS. | US-PGPUB | OR | OFF | 2011/06/20 08:25 |

**6/20/11 8:26:04 AM**
**C:\Documents and Settings\mpatterson\My Documents\EAST\Workspaces\writingshoe.wsp**



Petitioner adidas AG - Exhibit 1002 - Page 290 of 324
Skechers EX1013-p. 1648
Skechers v Nike

## PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail** **Mail Stop ISSUE FEE**
**Commissioner for Patents**
**P.O. Box 1450**
**Alexandria, Virginia 22313-1450**
**or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

22910 7590 06/24/2011
BANNER & WITCOFF, LTD.
28 STATE STREET
SUITE 1800
BOSTON, MA 02109-1701

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 12/879,517 | 09/10/2010 | Bhupesh Dua | 005127.01568 | 7137 |

TITLE OF INVENTION: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | NO | $1510 | $300 | $0 | $1810 | 09/26/2011 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| PATTERSON, MARIE D | 3765 | 012-14600C |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 Banner & Witcoff, Ltd.
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: NIKE, Inc.
(B) RESIDENCE: (CITY and STATE OR COUNTRY): Beaverton, Oregon

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 190733 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Jeanne M. Tanner/ Date September 22, 2011

Typed or printed name Jeanne M. Tanner Registration No. 45,156

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 12879517 |
| **Filing Date:** | 10-Sep-2010 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Attorney Docket Number:** | 005127.01568 |

Filed as Large Entity

## Utility under 35 USC 111(a) Filing Fees

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| Utility Appl issue fee | 1501 | 1 | 1510 | 1510 |
| Publ. Fee- early, voluntary, or normal | 1504 | 1 | 300 | 300 |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **1810** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 11010080 |
| **Application Number:** | 12879517 |
| **International Application Number:** | |
| **Confirmation Number:** | 7137 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22910 |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Filer Authorized By:** | Jeanne Marian Tanner |
| **Attorney Docket Number:** | 005127.01568 |
| **Receipt Date:** | 22-SEP-2011 |
| **Filing Date:** | 10-SEP-2010 |
| **Time Stamp:** | 10:40:27 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Deposit Account |
| Payment was successfully received in RAM | $1810 |
| RAM confirmation Number | 22114 |
| Deposit Account | 190733 |
| Authorized User | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|

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|---|---|---|---|---|---|
| 1 | Issue Fee Payment (PTO-85B) | 005127-01568_Issue-Fee-Transmittal.pdf | 173375<br>f6b2c4f6a31db2591445c4aa7ebbecead2e4edcc | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 32264<br>7be869ebd79c26e58291bae7a2012920198 6c4bd | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | | **Total Files Size (in bytes):** | 205639 | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12879517 |
| | Filing Date | 2010-09-10 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | |
| | Attorney Docket Number | 005127.01568 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Change(s) applied to document, /R.K.V./ 7/29/2011 | 9 | 4607439 | A | 1986-08-26 | ~~Harada~~ Sogabe et al. | |
| | 10 | 4785558 | A | 1988-11-22 | Shiomura | |
| | 11 | 4813158 | A | 1989-03-21 | Brown | |
| | 12 | 1888172 | | 1932-06-06 | Joha | |
| | 13 | 1902780 | | 1933-03-21 | Holden et al. | |
| | 14 | 1910251 | | 1933-05-23 | Joha | |
| | 15 | 2001293 | | 1935-05-14 | Wallace | |
| | 16 | 2400692 | A | 1946-05-21 | Herbert | |
| | 17 | 2641004 | A | 1953-06-09 | Ronyan et al. | |
| | 18 | 3694940 | A | 1972-10-03 | Stohr | |
| | 19 | 6558784 | B1 | 2003-05-06 | Norton et al. | |

EFS Web 2.1.17

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.P./

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
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| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 12/879,517 | 10/25/2011 | 8042288 | 005127.01568 | 7137 |

22910 7590 10/05/2011

BANNER & WITCOFF, LTD.
28 STATE STREET
SUITE 1800
BOSTON, MA 02109-1701

# ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Bhupesh Dua, Portland, OR;
Edward Nathaniel Thomas, Portland, OR;

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|---|---|---|
| In re U.S. Patent No. 8,042,288 | ) | Serial No. 12/879,517 |
| | ) | |
| Inventors: Bhupesh Dua et al. | ) | Filed: September 10, 2010 |
| | ) | |
| Issue Date: October 25, 2011 | ) | Attorney Docket No. 005127.01568 |

For: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

**REQUEST FOR CERTIFICATE OF CORRECTION**

U.S. Patent and Trademark Office
Customer Service Window
Randolph Building, Mail Stop: Certificate of Correction Branch
401 Dulany Street
Alexandria, VA 22314

Sir:

Pursuant to 35 U.S.C. § 254 and 37 C.F.R. § 1.322, Applicants request the issuance of a Certificate of Correction in the above-identified patent. A copy of PTO Form 1050 is appended. The complete Certificate of Correction involves one page.

The mistakes identified in the appended Form occurred through no fault of the Applicants, as clearly disclosed by the records of the application, which matured into this patent. Enclosed for your convenience is a copy of the Amendment filed May 16, 2011.

Issuance of the Certificate of Correction containing the corrections is respectfully requested. Since these changes are necessitated through no fault of the Applicants, no fee is believed to be associated with this request. Nonetheless, should the Patent and Trademark Office determine that a fee is required, please charge our Deposit Account No. 19-0733.

Respectfully submitted,

BANNER & WITCOFF, LTD.

Dated: November 2, 2011
Banner & Witcoff, Ltd
28 State Street, Suite 1800
Boston, MA 02109
(617) 720-9600

By: /Jeanne M. Tanner/
Jeanne M. Tanner
Registration No. 45,156

UNITED STATES PATENT AND TRADEMARK OFFICE

# CERTIFICATE OF CORRECTION

PATENT NO.: 8,042,288

DATED: October 25, 2011

INVENTORS: Bhupesh Dua et al.

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

Column 11, Claim 6, Line 65:
Please delete "includ" and insert –include--

Mailing Address of Sender:

Banner & Witcoff, Ltd.
28 State Street, Suite 1800
Boston, MA 02109

U.S. PAT. NO
8,042,288
No. of add'l copies
@ $0.50 per page

FORM PTO 1050 (Rev.2-93)

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| In Re the Patent Application of: | ) Confirmation No.: 7137 |
| **Bhupesh DUA, et al.** | ) Group Art Unit: 3728 |
| Appln. No.: 12/879,517 | ) Examiner: Marie D. Patterson |
| Filed: September 10, 2010 | ) Docket No.: 005127.01568 |
| For: AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | ) |

## RESPONSE TO OFFICE ACTION

Mail Stop – Amendment
Commissioner for Patents
U.S. Patent and Trademark Office
Alexandria, VA 22313

Sir:

In response to the Office Action mailed April 4, 2011 in the above-identified patent application, Applicants respectfully submit the following:

**Amendments to the Claims** begin on page 2.

**Remarks** begin on page 10.

## General Authorization of Payment of Fees

If any fees are due in this application, whether or not associated with this filing, please charge any fees due to Deposit Account No. 19-0733.

## AMENDMENTS TO THE CLAIMS

Please replace all previous listings of the claims with the following:

1. (Currently Amended) An article of footwear comprising:

an upper incorporating a circular-knitted textile element having a plurality of knit constructions, the circular-knitted textile element being removed from a circular-knitted textile structure, and further having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and

a sole structure secured to the upper.

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

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

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



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

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

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

8. (Original) The article of footwear recited in claim 1, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer.

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

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



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

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

13. (Original) The article of footwear recited in claim 1, wherein the circular-knitted textile element forms an interior surface of the upper.

14. (Currently Amended) An article of footwear comprising:

an upper incorporating a circular-knitted textile element, the circular-knitted textile element having a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying properties to the circular-knitted textile element, wherein the varying properties are aesthetic or structural, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer; and

a sole structure secured to the upper.



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Skechers v Nike

15. (Original) The article of footwear recited in claim 14, wherein the first stitch configuration provides a substantially smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smooth texture.

16. (Original) The article of footwear recited in claim 15, wherein the second stitch configuration forms a rib structure in the second area.

17. (Original) The article of footwear recited in claim 14, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the circular-knitted textile element.

18. (Original) The article of footwear recited in claim 14, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

19. (Cancelled)

20. (Original) The article of footwear recited in claim 14, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper.

21. (Original) The article of footwear recited in claim 14, wherein the circular-knitted textile element forms an interior surface of the upper.



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22. (Original) An article of footwear comprising:

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

a sole structure secured to the upper.

23. (Original) The article of footwear recited in claim 22, wherein the footwear includes a third seam extending through the forefoot area of the upper.

24. (Original) The article of footwear recited in claim 22, wherein at least one of the knit constructions forms an aperture in the circular-knitted textile element.

25. (Original) The article of footwear recited in claim 22, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying elasticity of the circular-knitted textile element.

26. (Original) The article of footwear recited in claim 22, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying air permeability of the circular-knitted textile element.



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Skechers v Nike

27. (Original) The article of footwear recited in claim 22, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

28. (Original) The article of footwear recited in claim 22, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper.

29. (Original) The article of footwear recited in claim 22, wherein the circular-knitted textile element forms an interior surface of the footwear, and at least one additional textile element forms an exterior surface of the footwear.

30. (Currently Amended) An article of footwear comprising:

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

a sole structure secured to the upper.



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Skechers EX1013-p. 1664
Skechers v Nike

31. (Original) The article of footwear recited in claim 30, wherein the circular-knitted textile element has a structure formed by a wide-tube circular knitting machine.

32. (Original) The article of footwear recited in claim 30, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper.

33. (Original) The article of footwear recited in claim 32, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper.

34. (Original) The article of footwear recited in claim 33, wherein the edges include at least a pair of third edges that are joined to form a second seam extending through a forefoot area of the upper.

35. (Original) The article of footwear recited in claim 30, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.

36. (Original) The article of footwear recited in claim 30, wherein the circular-knitted textile element forms an interior surface of the upper.

37. (Currently Amended) An article of footwear comprising:



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Skechers v Nike

an upper incorporating a knitted textile element, wherein the knitted textile element is formed unitarily with a knitted textile structure, the knitted textile element being removed from the knitted textile structure that includes an outline of the knitted textile element to form edges, the knitted textile element having a first area with a first unitary construction and a second area with a second unitary construction different from the first unitary construction, the first area having a first set of properties, and the second area having a second set of properties that is different from the first set of properties to impart varying characteristics to the textile element, and further having the edges joined together to form a seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper; and

a sole structure secured to the upper.

38. (Original) The article of footwear recited in claim 37, wherein the first set of properties and the second set of properties are at least one of a stitch configuration and a yarn type.

39. (Original) The article of footwear recited in claim 37, wherein the knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper.



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## REMARKS

Applicants have carefully considered the Office Action mailed April 4, 2011, and respectfully request reconsideration of the merits of this application.

***Status***

Claims 1-39 are pending in the Office Action. Claims 1, 14, 30 and 37 have been amended. Claim 19 has been cancelled. Claims 1, 14, 22, 30 and 37 are independent claims. No new subject matter is included in this Response.

In the Office Action:

- claims 1, 2, 7, 9-18, 20, 21, 30, 31 and 35-39 were rejected under 35 USC § 102(b) as being anticipated by Ducharme (US 2,701,458);
- claims 8 and 19 were rejected under 35 USC § 103(a) as being unpatentable over Ducharme in view of Norton (US 6,558,784);
- claims 3-6 and 32-34 were objected to and would be allowable if rewritten in independent form; and
- claims 22-29 were allowed.

Applicants acknowledge the Examiner's indication that claims 3-6 and 32-34 contain allowable subject matter and that claims 22-29 are allowed.

***Rejections Under 35 USC § 102(b)***

Claims 1, 2, 7, 9-18, 20, 21, 30, 31 and 35-39 were rejected under 35 USC § 102(b) as being anticipated by Ducharme. Claims 1, 14, 30 and 37 are independent claims.

As an initial matter, claim 14 has been amended to include the recitation of claim 19 and is, thus, discussed below with respect to the rejection of claim 19.

Amended claim 1 recites:

"An article of footwear comprising:
an upper incorporating a circular-knitted textile element having a plurality of knit constructions, the circular-knitted textile element being



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> removed from a circular-knitted textile structure, and further having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and
> a sole structure secured to the upper."

Amended claim 30 recites, in part:

> "the circular-knitted textile element having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot."

Amended claim 37 recites, in part:

> "a knitted textile element ... having the edges joined together to form a seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper."

Ducharme fails to disclose that the circular-knitted textile element has longitudinal edges that are joined together to define at least a portion of a void for receiving a foot. Ducharme also fails to disclose having the edges of a knitted textile element joined together to form a seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper.

Rather, at most, Ducharme discloses a seam extending across the toe, from a lateral to a medial side, of the moccasin sock. Ducharme fails to disclose longitudinal edges joined together.

As Ducharme fails to disclose each and every element of the amended claims, Ducharme fails to anticipate these claims. Applicants respectfully submit that claims 1, 30 and 37, and their dependent claims are allowable over the cited prior art.

***Rejections Under 35 USC § 103(a)***

Claims 8 and 19 were rejected under 35 USC § 103(a) as being unpatentable over Ducharme in view of Norton. Claims 8 and 19 depend from claims 1 and 14, respectively, and contain additional recitations thereto

As noted above, amended claim 14 incorporates the recitation of claim 19.

Claims 8 and 14 recite:

> "wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a



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Skechers v Nike

portion of the interior layer."

Thus, the upper includes three layers, wherein at least a portion of the interior layer of the upper is formed by the circular-knitted textile element.

The Examiner recognizes that Ducharme fails to disclose that the "circular-knitted textile element forms at least a portion of the interior layer," and relies on Norton to cure this deficiency

Norton also fails to disclose that the "circular-knitted textile element forms at least a portion of the interior layer." Specifically, referring to Fig. 2 and col. 4, lines 7-18, Norton discloses a three layer upper composed of a first thermoplastic foam layer 20, a second thermoplastic urethane layer 22, and a third fabric layer 24 interposed between the first and second layers 20, 22.

Norton's interposed third layer 24 does not correspond to the claimed "interior layer." Rather, Norton's interposed third layer 24 is located between the first layer 20 and the second layer 24, and therefore at most, Norton's interposed third layer 24 corresponds to the claimed "intermediate layer."

Should the Examiner maintain that Norton's interposed third layer 24 corresponds to the claimed "interior layer," Applicants respectfully request that the Examiner identify which layer of Norton would allegedly correspond to the claimed "intermediate layer."

Thus, for at least the reasons discussed above, Applicants respectfully submit that claims 8 and 14 are allowable over the cited art.



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Skechers v Nike

***Conclusion***

Applicants believe that this application is in condition for allowance and respectfully request action to that effect. Should further information be needed, the Examiner is invited to contact the undersigned attorney by telephone.

Respectfully submitted,

Dated: May 16, 2011

By: /Jeanne M. Tanner/

Jeanne M. Tanner, Reg. No. 45,156
BANNER & WITCOFF, LTD.
28 State Street, Suite 1800
Boston, MA 02109
(617) 720-9600



Petitioner adidas AG - Exhibit 1002 - Page 312 of 324
Skechers EX1013-p. 1670
Skechers v Nike

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 11318456 |
| **Application Number:** | 12879517 |
| **International Application Number:** | |
| **Confirmation Number:** | 7137 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22910 |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Filer Authorized By:** | Jeanne Marian Tanner |
| **Attorney Docket Number:** | 005127.01568 |
| **Receipt Date:** | 02-NOV-2011 |
| **Filing Date:** | 10-SEP-2010 |
| **Time Stamp:** | 13:15:58 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| Submitted with Payment | no |
|---|---|

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Request for Certificate of Correction | 005127-01568_Request-for-Correction.pdf | 66814<br>69ce937d92fa77ec07c2e8ca5443ca0dc4efb782 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Miscellaneous Incoming Letter | Response-filed-05-16-2011.pdf | 126044<br>9fb2dd7967a6bf49c334a6cb96e3e8cd54edfd19 | no | 13 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | | **Total Files Size (in bytes):** | 192858 | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

# CERTIFICATE OF CORRECTION

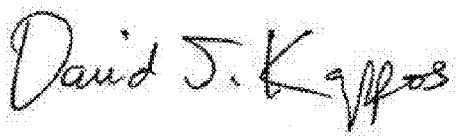


| | |
|---|---|
| PATENT NO. | : 8,042,288 B2 |
| APPLICATION NO. | : 12/879517 |
| DATED | : October 25, 2011 |
| INVENTOR(S) | : Bhupesh Dua et al. |

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

Column 11, Claim 6, Line 65:
Please delete "includ" and insert --include--

Signed and Sealed this
Fourteenth Day of February, 2012



David J. Kappos
*Director of the United States Patent and Trademark Office*

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | PATENT NUMBER | GROUP ART UNIT | FILE WRAPPER LOCATION |
|---|---|---|---|
| 12/879,517 | 8042288 | 3765 | 9200 |

OC000000087232507

## Correspondence Address/Fee Address Change

**The following fields have been set to Customer Number 115726 on 03/18/2014**

- **Correspondence Address**

**The address of record for Customer Number 115726 is:**

**115726**
**BANNER & WITCOFF, LTD**
**& attorneys for client 005127**
**1100 13th STREET NW**
**SUITE 1200**
**WASHINGTON, DC 20005**

PART 1 - ATTORNEY/APPLICANT COPY
page 1 of 1

PTO/AIA/80 (07-12)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office; U.S DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

■ Practitioners associated with Customer Number: 133691

**OR**

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

| Name | Registration Number | Name | Registration Number |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

■ The address associated with Customer Number: 133691

**OR**

☐

| | | | |
|---|---|---|---|
| Firm or Individual Name | | | |
| Address | | | |
| City | | State | Zip |
| Country | | | |
| Telephone | | Email | |

Assignee Name and Address: NIKE, Inc., One Bowerman Drive, Beaverton, Oregon 97005-6453

**A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.**

**SIGNATURE of Assignee of Record**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

| | | | |
|---|---|---|---|
| Signature | Tim Crean | Date | 8/11/15 |
| Name | Timothy J. Crean | Telephone | |
| Title | Attorny-in-Fact, NIKE, Inc. | | |

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/96 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: NIKE, INC. 15571/255 (10-1073)

Application No./Patent No.: 8,042,288 Filed/Issue Date: October 25, 2011

Titled: ARTICLE OF FOOTWEAR HAVING AN UPPER WITH KNITTED ELEMENTS

NIKE, INC. , a Corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;

2. ☐ an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is _____ %); or

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☒ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature 10/6/15 Date

Douglas A. Oguss, Reg. #48,469 Attorney for Assignee

Printed or Typed Name Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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|---|---|
| **EFS ID:** | 23704321 |
| **Application Number:** | 12879517 |
| **International Application Number:** | |
| **Confirmation Number:** | 7137 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 115726 |
| **Filer:** | Douglas Alan Oguss/Alice Thoennes |
| **Filer Authorized By:** | Douglas Alan Oguss |
| **Attorney Docket Number:** | 005127.01568 |
| **Receipt Date:** | 06-OCT-2015 |
| **Filing Date:** | 10-SEP-2010 |
| **Time Stamp:** | 14:59:39 |
| **Application Type:** | Utility under 35 USC 111(a) |

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## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | POA255.pdf | 360797<br>c58879d19fb372fb9989988eda9bba055e879efc | yes | 4 |

| | Multipart Description/PDF files in .zip description | | |
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| | Transmittal Letter | 1 | 1 |
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**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

CERTIFICATE OF EFS FILING UNDER 37 CFR §1.8

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office, Commissioner for Patents, via the EFS pursuant to 37 CFR §1.8 on the below date:

Date: Oct. 6, 2015 Name: Douglas A. Oguss, Reg. #48,469 Signature:

BRINKS GILSON & LIONE

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | | |
|---|---|---|---|
| In re Appln. of: | Dua et al. | | |
| Patent No.: | 8,042,288 | Examiner: | BAYS, MARIE D |
| Issued: | October 25, 2011 | Art Unit: | 3765 |
| For: | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | Conf. No.: | 7137 |
| Attorney Docket No.: | 15571/255 | | |

# TRANSMITTAL

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

**Attached is/are**:

☒ Power of Attorney (1 pg); Statement Under 37 C.F.R. §3.73(b) (2 pgs.).

**Fee calculation**:

☒ No additional fee is required.

☐ Per 37 CFR §1.27, ☐ Applicant is small entity ☐ Applicant is micro entity.

☐ An extension fee in an amount of $_____ for a _____-month extension of time under 37 CFR § 1.136(a).

☐ A petition or processing fee in an amount of $_____ under 37 CFR § 1.17(_____).

☐ An additional filing fee has been calculated as shown below:

| | | | | | Fee | | Small Entity Fee | | Micro Entity Fee | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Claims Remaining After Amendment | | Highest No. Previously Paid | Present Extra | Rate | Add'l Fee | Rate | Add'l Fee | Rate | Add'l Fee |
| Total | | Minus | | | x $ 80 = | $ | x $ 40 = | $ | x $20 = | $ |
| Independent | | Minus | | | x $420 = | $ | x $210 = | $ | x $105 = | $ |
| First Presentation of Multiple Dep. Claim | | | | | + $780 = | $ | + $390 = | $ | + $195 = | $ |
| | | | | | Total | $ | Total | $ | Total | $ |

**Fee payment:**

☐ Please charge Deposit Account No. 23-1925 in the amount of $_____ for _____.

☐ Payment by credit card in the amount of $_____ (Form PTO-2038 is attached).
**WARNING:** Information on this form may become public. **Credit card information should not be included on this form.**

☒ The Director is hereby authorized to charge payment of any additional filing fees required under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17 (including any extension fee required to ensure that this paper is timely filed), or to credit any overpayment, to Deposit Account No. 23-1925.

October 6, 2015
Date

Respectfully submitted,

Douglas A. Oguss (Reg. No. 48,469)

BRINKS GILSON & LIONE
NBC Tower – Suite 3600, 455 N. Cityfront Plaza Drive, Chicago, IL 60611-5599

UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 12/879,517 | 09/10/2010 | Bhupesh Dua | 005127.01568 |

**CONFIRMATION NO. 7137**

**POWER OF ATTORNEY NOTICE**




115726
BANNER & WITCOFF, LTD
& attorneys for client 005127
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WASHINGTON, DC 20005

Date Mailed: 10/15/2015

## NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/06/2015.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sleutchit/

UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 12/879,517 | 09/10/2010 | Bhupesh Dua | 005127.01568 |

**CONFIRMATION NO. 7137**

133691
NIKE, Inc./BGL
P.O. Box 10395
Chicago, IL 60610

**POA ACCEPTANCE LETTER**

*OC000000078066492*

Date Mailed: 10/15/2015

## NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/06/2015.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sleutchit/

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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adidas AG
Petitioner

v.

Nike, Inc.
Patent Owner

Patent No. 8,042,288
Filing Date: September 10, 2010
Issue Date: October 25, 2011
Title: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

*Inter Partes* Review No. Unassigned

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# DECLARATION OF LENNY M. HOLDEN

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**DECLARATION OF LENNY M. HOLDEN**

I, Lenny M. Holden, declare as follows:

## I. INTRODUCTION

1. My name is Lenny M. Holden, and I reside in Trabuco Canyon, California. I am over eighteen years of age, and I would otherwise be competent to testify as to the matters set forth herein if I am called upon to do so.

2. I have been retained by Kilpatrick Townsend & Stockton, LLP, counsel for adidas AG ("adidas or Petitioner"). My curriculum vitae is attached hereto and is labeled Ex. 1004. I understand that adidas has petitioned for *inter partes* review of U.S. Patent No. 8,042,288 ("the '288 patent") and requests that the United States Patent and Trademark Office cancel claims 1-38 of the '288 patent as unpatentable. The following discussion and analyses address the basis for adidas's petitions. I understand that this Declaration will be used in support of this petition.

3. I submit this Declaration at the request of adidas for consideration by the Patent Trial and Appeal Board in the above-referenced *inter partes* review proceedings.

4. In forming my opinions, I rely on my knowledge and experience in the field and on documents and information referenced in this Declaration.

## A. Background and Expertise

5. As shown in my curriculum vitae, I have been in the shoe business for almost 40 years, starting in retail and then in the design, development, and manufacturing starting in 1983.

6. I lived in Asia for more than 10 years, (6 years in Korea and 4 years in Taiwan). I have made shoes of almost every type in Korea, Taiwan, China, Indonesia, Malaysia, Vietnam, Brazil, Mexico, Macao, Spain, Italy, Thailand, and the Philippines.

7. I have worked in almost every aspect of design, development, operations, commercialization, quality control, and supply chain. I have had management and executive roles that have been responsible for the design, development, operations, commercialization, quality control, and supply chain of footwear products distributed to the US and many other countries.

8. I am a named inventor on 5 U.S. patents relating to footwear.

9. Because my responsibilities have been from all the way through design to delivery, I have been to many types of footwear factories and many various types of material suppliers to ensure the delivery and quality of the products I was responsible for.

10. Because of my last company's focus on lowering our overall carbon footprint, I worked on many projects to address the streamlining of production. I



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studied automated production in Vietnam and the UK. As a piece of this study, we worked on and patented a method of making vulcanized shoes reducing the vulcanization process. I also studied computerized stitching in China. I have generally been aware of the efforts within the shoe industry to address the amount of labor required to make conventional athletic footwear.

11. I have been retained by Petitioner adidas as an expert for these *inter partes* review proceedings. I am being compensated at a rate of $250.00 per hour. No part of my compensation is dependent upon the outcome of these proceedings or any issue in these proceedings.

**B. Materials Considered**

12. In forming my opinions, in addition to my knowledge and experience, I have considered the following documents and things that I have obtained, or that have been provided to me: (i) the '288 patent and its prosecution history that is available on the U.S. Patent Office website; (ii) U.S. Patent No. 7,814,598 and its prosecution history that is available on the U.S. Patent Office website; (iii) U.S. Patent No. 8,266,749 and its prosecution history that is available on the U.S. Patent Office website; (iv) various papers, exhibits, and decisions in *adidas AG v. Nike, Inc.*, IPR2013-00067; (v) prior art to the '288 patent, including (a) U.S. Patent No. 4,038,840 to Castello; (b) U.S. Patent No. 6,330,814 to Fujiwara; (c) U.S. Patent No. 3,985,003 to Reed; (d) U.S. Patent No. 5,345,638 to Nishida; (e) "Knitting

Technology: A comprehensive handbook and practical guide," 3rd edition, by David J. Spencer, published in 2001; (f) U.S. Patent No. 6,779,369 to Shepherd; (g) U.S. Patent No. 4,785,558 to Shiomura; (h) Paul Burall, "CoID Design Awards," Design, June 1969; (i) ISO 8117:2003(E) Textile machinery – Knitting machines – Nominal diameters of circular machines; (j) U.S. Patent No. 2,641,004 to Whiting; (k) U.S. Patent No. 2,314,098 to McDonald; (l) U.S. Patent No. 2,147,197 to Glidden; (m) PCT International Publication No. WO 90/03744 to Curley; (vi) videos demonstrating circular knitting machine operation and techniques (http://www.santoni.com/videofoto.asp; https://www.youtube.com/watch?v=mWB8JReKTuY; https://www.youtube.com/watch?v=ho9Ut9uzsGI&index=3&list=PL5DAA9BDA077A99E4; https://www.youtube.com/watch?v=PwNTU_uoGrk; https://www.youtube.com/watch?v=VWV0ZV9xClA); and (vii) discussions with adidas's external knitting consultant in March /April 2016. The facts and data that I have reviewed and relied on are the kinds of facts and data that experts in the field of shoemaking ordinarily and reasonably rely on to form opinions regarding patentability. My analysis and opinions are based on the facts and evidence in these materials and my prior experience. I reserve the right to modify or expand upon my opinions and their foundation in the future should additional materials be made available to me.



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## II. LEGAL STANDARDS FOR PATENTABILITY

13. In expressing my opinions and considering the subject matter of the claims of the '288 patent, I am relying upon certain legal principles that counsel has explained to me.

14. First, I have been informed and understand that for an invention claimed in a patent to be found patentable, it must be, among other things, new and not obvious from what was known before the invention was made.

15. I have been informed and understand the information that is used to evaluate whether an invention is new and not obvious is generally referred to as "prior art" and generally includes patents and printed publications (e.g., books, articles, product manuals, company publications, etc.).

16. I have been informed and understand that in this proceeding, adidas has the burden of proving that the claims of the '288 patent are anticipated by or obvious in view of the prior art by a preponderance of the evidence. I have been informed and understand that "a preponderance of the evidence" is evidence sufficient to show that a fact is more likely true than it is not true.

17. I have been informed and understand that in this proceeding, the claims must be given their broadest reasonable interpretation consistent with the specification. After being given their broadest reasonable interpretation, the claims are then to be compared to the information disclosed in the prior art.



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18. I have been informed and understand that in this proceeding, the information that may be evaluated is limited to patents and printed publications. My analysis below compares the claims to patents and printed publications that I understand are prior art to the '288 patent.

19. I have been informed and understand that there are two ways in which prior art may render a patent claim unpatentable. First, the prior art can be shown to "anticipate" the claim. Second, the prior art can be shown to have made the claim "obvious" to a person of ordinary skill in the art. My understanding of the two legal standards is set forth below.

**A. Anticipation**

20. I have been informed and understand that the following standards govern the determination of whether a patent claim is "anticipated" by the prior art.

21. I have applied these standards in my evaluation of whether the claims of the '288 patent would have been anticipated by the prior art.

22. I have been informed and understand that the "prior art" includes patents and printed publications that existed before the earliest filing date (the "effective filing date") of the patent. I also have been informed and understand that a patent will be prior art if it was filed before the effective filing date, while a printed publication will be prior art if it was publicly available before that date.

23. I have been informed and understand that, for a patent claim to be



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"anticipated" by the prior art, each and every requirement of the claim must be found, expressly or inherently, in a single prior art reference. I have been informed and understand that a prior art reference inherently discloses a claim limitation if the limitation is necessarily present in the reference.

**B. Obviousness**

24. I have been informed and understand that a claimed invention is not patentable if it would have been obvious to a person of ordinary skill in the field of the invention at the time the invention was made.

25. I have been informed and understand that the following standards govern the determination of whether a claim in a patent is obvious. I have applied these standards in my evaluation of whether the claims of the '288 patent would have been considered obvious in March 2004, the earliest claimed priority date of the '288 patent.

26. I have been informed and understand that to find a claim in a patent obvious, one must make certain findings regarding the claimed invention and the prior art. Specifically, I have been informed and understand that the obviousness question requires consideration of four factors (although not necessarily in the following order):

- The scope and content of the prior art;
- The differences between the prior art and the claims at issue;



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- The knowledge of a person of ordinary skill in the pertinent art; and
- Whatever objective factors indicating obviousness or non-obviousness may be present in any particular case.

27. I have been informed and understand that the objective indicia that may bear on the question of obviousness or non-obviousness include whether the claimed invention proceeded in a direction contrary to the accepted wisdom in the field, whether there was a long-felt but unresolved need in the field that was satisfied by the claimed invention, whether others had tried but failed to make the claimed invention, whether others copied the claimed invention, whether the claimed invention achieved any unexpected results, whether the claimed invention was praised by others, whether others have taken licenses to use the claimed invention, whether experts or those skilled in the field of the claimed invention expressed surprise or disbelief regarding the claimed invention, and whether products incorporating the claimed invention have achieved commercial success.

28. In addition, I have been informed and understand that the obviousness inquiry should not be done in hindsight, but must be done using the perspective of a person of ordinary skill in the relevant art as of the effective filing date of the patent.



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29. I have been informed and understand that a person of ordinary skill in the relevant art is a person of ordinary creativity.

30. I also have been informed and understand that under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. I also have been informed and understand that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. I further have been informed and understand that the following are examples of other factors that may show obviousness:

- a combination that only unites old elements with no change in their respective functions is unpatentable. As a result, the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results;

- a predictable variation of a work in the same or a different field of endeavor is likely obvious if a person of ordinary skill would be able to implement the variation;

- an invention is obvious if it is the use of a known technique to improve a similar device in the same way, unless the actual application of the



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technique would have been beyond the skill of the person of ordinary skill in the art. In this case, a key inquiry is whether the improvement is more than the predictable use of prior art elements according to their established functions;

- an invention is obvious if there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims;

- inventions that were "obvious to try" — chosen from a finite number of identified, predictable solutions, with a reasonable expectation of success — are likely obvious;

- known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; and

- an explicit teaching, suggestion, or motivation in the art to combine references, while not a requirement for a finding of obviousness, is a helpful insight in determining on which a finding of obviousness may be based.



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31. Finally, I have been informed and understand that, even if a claimed invention involves more than substitution of one known element for another or the application of a known technique to a piece of prior art ready for improvement, the invention may still be obvious. I also have been informed and understand that in such circumstances, courts may need to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art to determine if the claimed invention is obvious.

## III. PERSON OF ORDINARY SKILL IN THE ART

32. It is my opinion that the field of the '288 patent is footwear incorporating an upper that is at least partially formed from a textile material. *See e.g.* '288 patent, 1:19-22.

33. Counsel for adidas has informed me that the content of a patent or other printed publication (*e.g.*, prior art reference) should be interpreted the way a person of ordinary skill in the art would have interpreted the reference at the time of the earliest priority date for the '288 patent, which is March 3, 2004.

34. In my opinion, the person of ordinary skill in the art for the '288 patent would have at least a few years of experience in the footwear industry, possibly with a focus in one specific area (such as merchandising, design, product development, commercialization, and/or manufacturing), but would also have a



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broader understanding of shoemaking in general, as all aspects are so interdependent on each other. A person of ordinary skill would have an understanding of the product cycle for the process of designing, developing, and bringing a new product to market. He or she would also understand that there are some key review milestones where upper material designs are reviewed and considered, such as textiles, leathers, synthetics, or other types of materials used for upper construction. A person of ordinary skill would have some understanding and knowledge of the available and varied ranges of typical construction methods within a product cycle. In addition, a person of ordinary skill would have a basic knowledge of the functional requirements of footwear and a comprehensive understanding of the range of material choices, as well as construction techniques and processes used to create the various parts of a shoe and to assemble them in an effective manner.

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



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

## IV. THE '288 PATENT

37. The '288 patent is entitled "Article of Footwear Having a Textile Upper." The '288 patent issued on October 25, 2011 from Application No. 12/879,517, which was filed September 10, 2010 as a continuation of Application No. 12/032,995, filed on February 18, 2008, now U.S. Patent No. 7,814,598 ("the '598 patent"). The '598 patent was filed as a division of Application No. 10/791,289, filed on March 3, 2004, now U.S. Patent No. 7,347,011 ("the '011 patent"). The earliest claimed priority date of the '288 patent is the March 3, 2004 filing date of the '011 patent.

38. The '288 patent discloses and claims an article of footwear and a method of making such an article, which combines a knitted upper of unitary construction with a sole unit. The upper incorporates a textile element with edges that are joined together to create an upper with an area for receiving a foot.

39. The textile element may also have first and second areas that are parts of a unitary construction. These first and second areas may be made with different stitch configurations or different yarns, for example, so that different areas of the upper have different properties (such as, different texture, different elasticity,



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different breathability, etc.). Various warp knitting or weft knitting processes may be utilized to form the textile element. For example, the textile element may be formed on a circular knitting machine and/or may be formed simultaneously with a surrounding textile structure from which it is then removed.

40. The textile element may have edges that are joined together to create an upper with a void for receiving a foot. These edges may form a seam that extends along a lower region of an upper. Additional edges may be joined to form a second seam that extends along a heel region.

41. In the section entitled "Description of Background Art," the '288 patent explains that the use of various materials for uppers in athletic shoes is well known. For example, '288 patent, 1:54-2:12:

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



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

42. The '288 patent explains, however, that textile materials often form at least a portion of the exterior and interior layers of athletic shoes, '288 patent, 2:13-23:

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

43. The "Description of Background Art" section then briefly describes the various techniques for mechanically manipulating yarn into textiles, including weaving and knitting, '288 patent, 2:45-55:

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



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44. The ‘288 patent explains that using multiple materials to impart different properties to different parts of the upper is an inefficient practice because, for example, materials must often be obtained from multiple suppliers located in different places and different materials may require different machinery or numerous distinct manufacturing steps. ‘288 patent, 3:3-16. In addition, the ‘288 patent explains that using multiple materials in the upper may detract from breathability of the shoe, and specifically that leather, synthetic leather, and rubber inhibit air flow. ‘288 patent, 3:16-23.

45. Thus, the problems that the ‘288 patent identifies are (1) inefficiencies and cost in using multiple materials, and (2) poor breathability of materials like leather (natural or synthetic) and rubber. The proposed solution of the ‘288 patent is to make a textile upper as a single material element with a unitary construction.

46. The ‘288 patent describes several embodiments of a textile element (40, 40’, 40”) in the specification and figures. One embodiment is shown in FIG. 8, and the ‘011 Patent describes how the parts of the textile element 40 form the upper of the shoe, ‘288 patent, 5:22-37:



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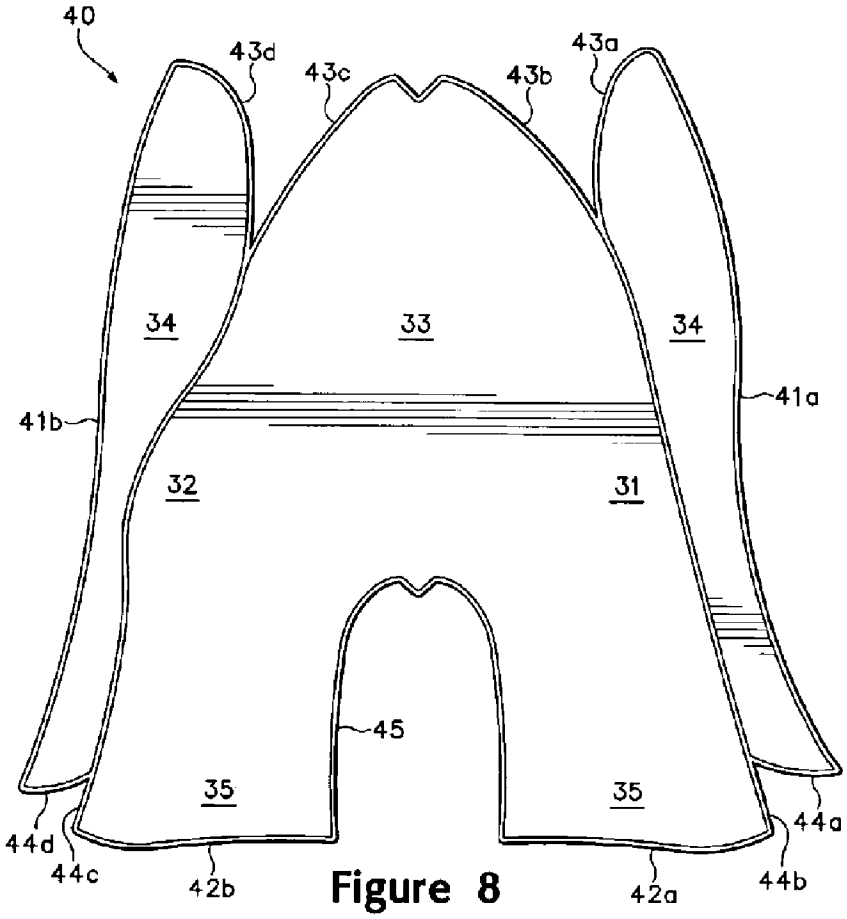



Figure 8

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



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47. The ‘288 patent explains how the various edges of the textile element are joined together, forming several seams along the heel, toe, and longitudinal length of the bottom of upper, to make the shape of the upper, and the upper is then secured to the sole. ‘288 patent, 5:44-6:41.

48. The ‘288 patent emphasizes that the textile element is a single material element with unitary construction, ‘288 patent, 6:42-51:

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

49. The ‘288 patent describes that the textile element may be formed any number of ways with one or more yarns that are mechanically manipulated using a variety of existing processes, ‘288 patent, 6:52-65:

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



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element 40 may, therefore, be formed from one of these processes for manufacturing a textile.

50. The '288 patent continues by identifying several types of knitting and knitting machines that may be used, including a circular knitting machine from Santoni S.p.A. in Italy that the patent identifies by model number. '288 patent, 6:66-7:26. The specific example is of multiple textile elements knitted in a cylindrical textile structure formed with a wide tube circular knitting machine, '288 patent, 7:27-64:

> A wide-tube circular knitting machine, as produced by Santoni S.p.A., forms a generally cylindrical textile structure and is capable of forming various types of stitches within a single textile structure. In general, the wide-tube circular knitting machine may be programmed to alter the design on the textile structure through needle selection. That is, the type of stitch that is formed at each location on the textile structure may be selected by programming the wide-tube circular knitting machine such that specific needles either accept or do not accept yarn at each stitch location. In this manner, various patterns, textures, or designs may be selectively and purposefully imparted to the textile structure.
>
> An example of a textile structure **60** that may be formed with a wide-tube circular knitting machine is depicted in FIG. 9. Textile structure **60** has a generally cylindrical configuration, and the types of stitches vary throughout textile structure **60** so that a pattern is formed with the outline of textile element **40.** That is, differences in the stitches within textile structure **60** form an outline with the shape and proportions of textile element **40.**
>
> The Santoni S.p.A. wide-tube circular knitting machine may form a textile structure having a diameter that ranges from 10 inches to 16 inches, as discussed above. Assuming that textile structure **60** exhibits a diameter of 10 inches, then the circumference of textile structure **60** is approximately 31 inches. In many circumstances, the total width of textile element **40** will be approximately 12 inches, depending upon



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the size of footwear **10.** The outlines for at least two textile elements **40** may, therefore, be formed on textile structure **60.** Referring to FIG. 9, the outline of textile element **40** is depicted on a front portion of textile structure **60,** and the outline of another textile element **40** is depicted on a rear portion of textile structure **60.** Accordingly, a first textile element **40** and a second textile element **40** may be simultaneously formed in a single textile structure **60.** As the diameter of textile element **60** is increased or the width of textile element **40** decreases, however, an even greater number of textile elements **40** may be outlined on textile structure **60.**

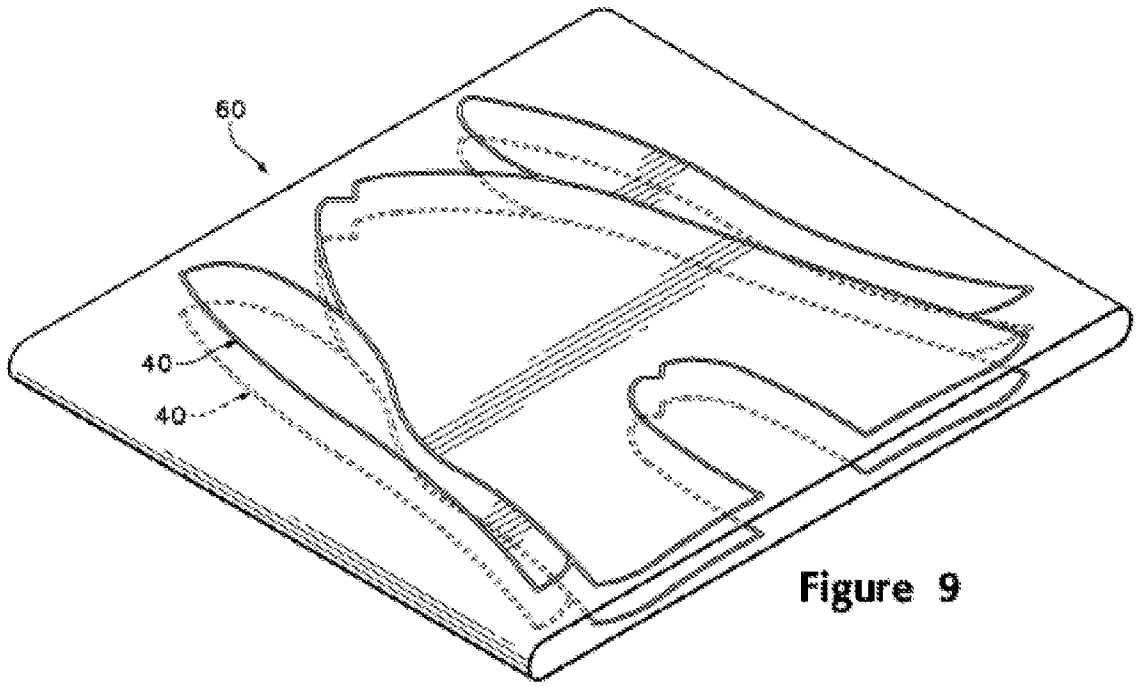



**Figure 9**

51. The '288 patent explains how the wide tube knitting machines are programmed to provide different types of stitches in different areas of the web so as to outline one or more textile elements, '288 patent, 7:65-8:4:

> Textile structure **60** may be formed with a wide-tube circular knitting machine, as discussed above. The types of stitches that form textile structure **60** may be varied to form an outline of one or more textile elements **40** on textile structure **60.** That is, the wide-tube circular



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knitting machine may be programmed to form different types of stitches in textile structure **60** so as to outline one or more textile elements **40.**

52. The '288 patent then explains how the textile elements are removed from the web ('288 patent, 8:5-9):

> Each textile element **40** is then removed from textile structure **60** with a die-cutting, laser-cutting, or other conventional cutting operation. Once textile element **40** is removed from textile structure **60,** seams **51-54** may be formed and textile element **40** may be incorporated into footwear **10.**

53. FIG. 10 from the '288 patent shows another embodiment of a textile element described therein, where the textile element has different configurations in different areas:

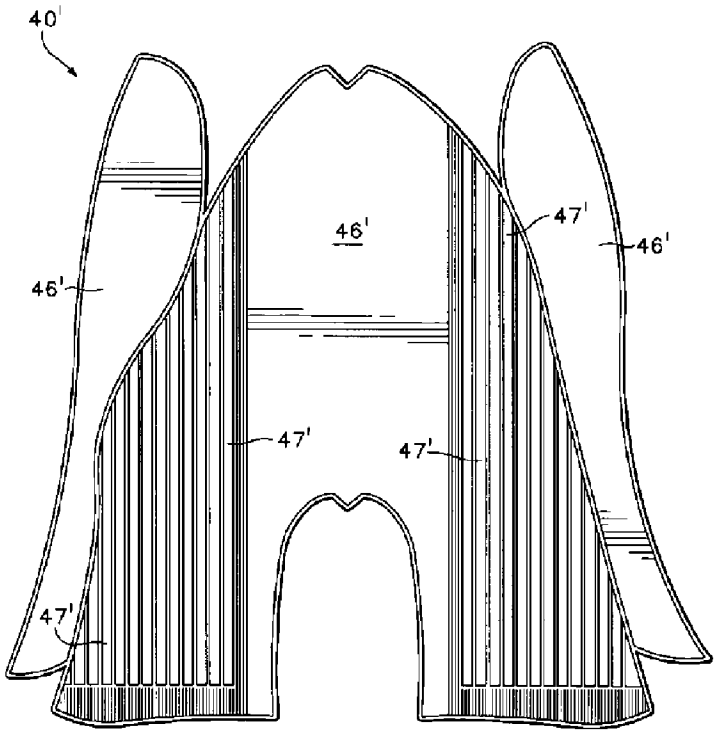



**Figure 10**



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54. The area that corresponds with the instep region has a first texture 46' that is generally smooth, while the areas that correspond with the lateral and medial regions have a second texture 47' that is a plurality of longitudinal ribs. '288 patent, 9:5-14. The patent states that the ribs may be present for aesthetic purposes or may affect the stretch properties of the upper. '288 patent, 9:14-16. The varying textures may be obtained by varying the stitch types in the different areas or by varying the type of yarn. '288 patent, 9:59-62. Changing the yarn type can also be used to impart different properties in different areas, beyond just texture differences. '288 patent, 9:62-66.

55. The '288 patent explains how the inventors believed this was different from conventional articles of footwear, '288 patent, 9:16-29:

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

56. The '288 patent also discloses an embodiment that has areas with three different textures. '288 patent, FIG. 11; 9:30-58. In addition, the '288 patent



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discloses an embodiment in which the textile element 240 forms an interior layer of a multilayered upper 230. '288 patent, 10:33-63; FIGS. 13-14. In the Background section, the '288 patent states that conventional multilayered uppers for athletic footwear "may be formed from multiple material layers that include an exterior layer, an intermediate layer, and an interior layer." '288 patent, 1:54-58. "Although the materials selected for the upper vary significantly, textile materials often form at least a portion of the exterior layer and interior layer." '288 patent, 2:13-15. "An intermediate layer of the upper may be formed from a lightweight polymer foam material that provides cushioning and protects the foot from objects that may contact the upper." '288 patent, 2:4-6. In the upper 230 shown in FIGS. 13-14, the '288 patent explains that the "[u]pper 230 has a configuration that is similar to the configuration of the conventional upper in that various material layers are utilized. In contrast with the conventional upper, however, the interior layer is formed of textile element 240, which is manufactured through the process discussed above. That is, textile element 240 is a single element of textile that forms the interior layer of upper 230." '288 patent, 10:50-56; FIG. 14.



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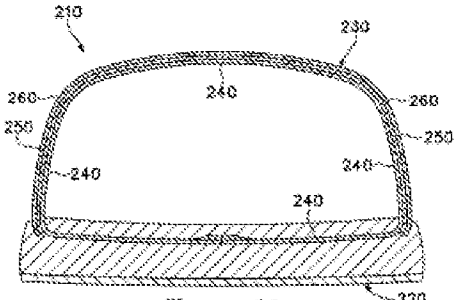


Figure 14

## V. OVERVIEW OF THE '288 PATENT CHALLENGED CLAIMS

57. The challenged claims of the '288 patent are claims 1-38, of which claims 1, 14, 21, 29, and 36 are the independent claims. All of the challenged claims are reproduced below.

| |
|---|
| 1. An article of footwear comprising: |
| an upper incorporating a circular-knitted textile element having a plurality of knit constructions, |
| the circular-knitted textile element being removed from a circular-knitted textile structure, and |
| further having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and |
| a sole structure secured to the upper. |
| 2. The article of footwear recited in claim 1, wherein the circular-knitted textile element forms at least a portion of a lateral side, a medial side, and an instep region of the upper. |
| 3. The article of footwear recited in claim 1, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper. |
| 4. The article of footwear recited in claim 3, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper. |
| 5. The article of footwear recited in claim 4, wherein the second seam extends vertically. |
| 6. The article of footwear recited in claim 4, wherein the edges include at least a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper. |


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| |
|---|
| 7. The article of footwear recited in claim 1, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. |
| 8. The article of footwear recited in claim 1, wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer. |
| 9. The article of footwear recited in claim 1, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper. |
| 10. The article of footwear recited in claim 9, wherein at least one additional element is secured to the exterior surface and forms a portion of the exterior surface. |
| 11. The article of footwear recited in claim 10, wherein the additional element is secured to a forefoot area of the upper. |
| 12. The article of footwear recited in claim 10, wherein the additional element is secured to a heel area of the upper. |
| 13. The article of footwear recited in claim 1, wherein the circular-knitted textile element forms an interior surface of the upper. |
| 14. An article of footwear comprising: |
| an upper incorporating a circular-knitted textile element, |
| the circular-knitted textile element having a first area and a second area with a unitary construction, |
| the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying properties to the circular-knitted textile element, wherein the varying properties are aesthetic or structural, |
| wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer; and |
| a sole structure secured to the upper. |
| 15. The article of footwear recited in claim 14, wherein the first stitch configuration provides a substantially smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smooth texture. |
| 16. The article of footwear recited in claim 15, wherein the second stitch configuration forms a rib structure in the second area. |
| 17. The article of footwear recited in claim 14, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the circular-knitted textile element. |



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| |
|---|
| 18. The article of footwear recited in claim 14, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. |
| 19. The article of footwear recited in claim 14, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper. |
| 20. The article of footwear recited in claim 14, wherein the circular-knitted textile element forms an interior surface of the upper. |
| 21. An article of footwear comprising: |
| an upper incorporating a circular-knitted textile element having a plurality of knit constructions, and |
| further having edges that are joined together to form seams and define at least a portion of a void for receiving a foot, |
| the seams including a first seam and a second seam, |
| the first seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper, and |
| the second seam extending vertically in the heel area; and |
| a sole structure secured to the upper. |
| 22. The article of footwear recited in claim 21, wherein the footwear includes a third seam extending through the forefoot area of the upper. |
| 23. The article of footwear recited in claim 21, wherein at least one of the knit constructions forms an aperture in the circular-knitted textile element. |
| 24. The article of footwear recited in claim 21, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying elasticity of the circular-knitted textile element. |
| 25. The article of footwear recited in claim 21, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying air permeability of the circular-knitted textile element. |
| 26. The article of footwear recited in claim 21, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. |
| 27. The article of footwear recited in claim 21, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper. |
| 28. The article of footwear recited in claim 21, wherein the circular-knitted textile element forms an interior surface of the footwear, and at least one additional textile element forms an exterior surface of the footwear. |
| 29. An article of footwear comprising: |
| an upper incorporating a circular-knitted textile element having a plurality of knit |



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| |
|---|
| constructions, |
| wherein the circular-knitted textile element is formed with a knitting machine, |
| the circular-knitted textile element being removed from a circular-knitted textile structure that includes an outline of the circular-knitted textile element, and |
| the circular-knitted textile element having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and |
| a sole structure secured to the upper. |
| 30. The article of footwear recited in claim 29, wherein the circular-knitted textile element has a structure formed by a wide-tube circular knitting machine. |
| 31. The article of footwear recited in claim 29, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper. |
| 32. The article of footwear recited in claim 31, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper. |
| 33. The article of footwear recited in claim 32, wherein the edges include at least a pair of third edges that are joined to form a second seam extending through a forefoot area of the upper. |
| 34. The article of footwear recited in claim 29, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. |
| 35. The article of footwear recited in claim 29, wherein the circular-knitted textile element forms an interior surface of the upper. |
| 36. An article of footwear comprising: |
| an upper incorporating a knitted textile element, |
| wherein the knitted textile element is formed unitarily with a knitted textile structure, |
| the knitted textile element being removed from the knitted textile structure that includes an outline of the knitted textile element to form edges, |
| the knitted textile element having a first area with a first unitary construction and a second area with a second unitary construction different from the first unitary construction, |
| the first area having a first set of properties, and the second area having a second set of properties that is different from the first set of properties to impart varying characteristics to the textile element, and |
| further having the edges joined together to form a seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper; and |
| a sole structure secured to the upper. |
| 37. The article of footwear recited in claim 36, wherein the first set of properties |



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| |
|---|
| and the second set of properties are at least one of a stitch configuration and a yarn type. |
| 38. The article of footwear recited in claim 36, wherein the knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. |

58. I have reviewed the constructions presented by adidas in this proceeding for various claim terms of the '288 patent. I understand that in *inter partes* review, a claim is to be given the broadest reasonable construction in light of the patent's specification. I have reviewed and agree that the constructions proposed by adidas for the various terms of the '288 patent are appropriate under this standard.

59. It is my opinion that claims 1-38 of the '288 patent are rendered obvious by U.S. Patent No. 5,345,638 to Nishida ("Nishida"), U.S. Patent No. 3,985,003 to Reed ("Reed"), U.S. Patent No. 4,785,558 to Shiomura ("Shiomura"), and U.S. Patent No. 6,779,369 to Shepherd ("Shepherd") and/or by Nishida, U.S. Patent No. 4,038,840 to Castello ("Castello"), U.S. Patent No. 6,330,814 to Fujiwara ("Fujiwara"), Shiomura, and Shepherd, either alone or in combination, as described in the following sections and as detailed in the claim charts attached hereto as Appendices A-B.

## VI. COMMON FEATURES AMONG THE '288 PATENT CLAIMS

60. As discussed above, there is substantial overlap among the features recited in the challenged claims of the '288 patent. I have provided a summary of



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these common features below:

- Preamble:
    - **An article of footwear** (‘288 patent, claims 1, 14, 21, 29, and 36);
- Knitting Techniques & Machinery:
    - **a knitting machine** (‘288 patent, claim 29);
    - **a wide-tube circular knitting machine** (‘288 patent, claim 30);
- **Knitted Textile Element Formed Unitarily with a Knitted Textile Element** (‘288 patent, claim 36);
- **Textile Element Removed from the Textile Structure** (‘288 patent, claims 29, 36);
- **Textile Structure Including an Outline of the Textile Element** (‘288 patent, claims 29, 36);
- Textile Element having a Unitary Construction and having a Plurality of Knit Constructions and/or Areas with Different Stitch Configurations:
    - **the knitted textile element having a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the knitted textile element** (‘288 patent, claims 14 (adds “wherein the



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varying properties are aesthetic or structural"), 36 (adds "the knitted textile element having a first area *with a first unitary construction* and a second area *with a second unitary construction different from the first unitary construction*");

- **upper incorporating a circular-knitted textile element having a plurality of knit constructions** ('288 patent, claims 1, 21, 29);
- **the knit constructions produce varying properties in the circular-knitted textile element** ('288 patent, claims 24 (adds "a varying elasticity of the circular-knitted textile element**"**), 25 (adds "a varying air permeability of the circular-knitted textile element");
- **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** ('288 patent, claim 37 (adds "*the first set of properties and the second set of properties are* at least one of a stitch *configuration* and a yarn type");
- **the first stitch configuration provides a substantially smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smooth texture** ('288 patent, claims 15, 16 (adds that "the second stitch configuration forms a rib structure in the second area");



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- First (Longitudinal), Second (Vertical), and/or Third (Forefoot) Edges and Seams:
    - **Form edges** ('288 patent, claim 36);
    - **the longitudinal edges are joined together to define at least a portion of a void for receiving a foot** ('288 patent, claims 1, 21 (adds "to form seams"), 29);
    - **longitudinal/first pair of edges of the knitted textile element that are joined together to form a seam that extends along a lower region of an upper** ('288 patent, claims 3, 31 (adds "longitudinally"), 36 (adds "from a heel area to a forefoot area"));
    - **the seams including a first seam and a second seam, the first seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper, and the second seam extending vertically in the heel area** ('288 patent, claim 21);
    - **securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper** ('288 patent, claims 4, 5 (adds "vertically"), 32);
    - **a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper** ('288 patent, claims 6, 22, 33);


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- **Sole Structure Secured to the Upper** ('288 patent, claims 1, 14, 21, 29, 36);
- Location of the Textile Element within the Upper:
    - **textile element forms at least a portion of a lateral side, a medial side, and an instep region of the upper** ('288 patent, claim 2);
    - **textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper** ('288 patent, claims 7, 18, 26, 34, 38);
    - **upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer** ('288 patent, claims 8, 14);
    - **textile element forms at least a portion of both an interior surface and an exterior surface of the upper** ('288 patent, claims 9, 19, and 27);
    - **the circular-knitted textile element forms an interior surface of the upper** ('288 patent, claims 13, 20, 28, 35);
- Additional Elements Attached to an Exterior Surface of the Textile Element:
    - **at least one additional element is secured to the exterior surface and forms a portion of the exterior surface** ('288 patent, claims 10,


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11 (adds that it is "secured to a forefoot area of the upper"), 12 (adds that it is "secured to a heel area of the upper"));

- **at least one additional textile element forms an exterior surface of the footwear** ('288 patent, claim 28);

- Aperture Formed in the Textile Element:
  - **at least one of the first stitch configuration and the second stitch configuration forms an aperture in the circular-knitted textile element** ('288 patent, claims 17, 23 (uses "at least one of the knit constructions" instead of the stitch configuration language).

61. It is my opinion that claims 1-38 of the '288 patent are rendered obvious by Nishida, Reed, Shiomura, and Shepherd, and/or by Nishida, Castello, Fujiwara, Shiomura, and Shepherd, as described in the following sections and as detailed in the claim charts attached hereto as Appendices A-B.

62. Nishida, Reed, Castello, Fujiwara, Shiomura, and Shepherd all relate to knitted textiles. Nishida, Reed, Castello, and Fujiwara all relate to knitted textiles that are removed from a larger web of material using program-controlled knitting machines. Nishida states that any conventional textile process may be used to produce these knitted textiles. Reed, Castello, Fujiwara, and Shepherd specifically describe the use of circular knitting machines to produce knitted textiles. Nishida, Reed, Fujiwara, Shiomura, and Shepherd specifically describe



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knitting textile elements having multiple knitted layers. Reed and Fujiwara describe interknitting these layers in certain specific locations. Fujiwara describes using stitches that form apertures in the textile element in these interknitted locations. Shiomura and Shepherd describe using a spacer yarn to couple the two layers together, wherein the spacer yarn forms an intermediate layer between the two knitted layers. Shepherd specifically describes knitting the two knitted layers and the spacer layer simultaneously on a circular weft knitting machine. Nishida and Shiomura specifically describe incorporating multilayered textile elements into shoe uppers, and Reed suggests that the concept of using circular knitting machines to produce footwear items is well-known.

## VII. OVERVIEW OF THE PRIOR ART

63. The claims of the '288 patent recite features that were well-known in the prior art at least as of March 3, 2004.

64. Knitted uppers of a unitary construction with modifications of stitches, yarn types, patterns, or constructions in different areas for creating various functional regions have been known for decades. For example, such constructions have been described in detail in several U.S. patents, such as Nishida.

65. The use of circular knitting machines in the garment industry was historically limited to making tubular, knitted garments, such as ladies' stockings, sweaters, and other garments, wherein the entire knitted fabric was used as a unit



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to form one surface of a finished garment. Reed, 1:33-44. Although Reed recognized that footwear items, such as stockings, were conventionally knit with circular knitting machines, the ability to incorporate complex knit patterns for footwear on a larger scale (as described in Reed) was not historically possible because the labor and complexity involved in manually programming the mechanical-type patterns limited pattern sizes to approximately 144 wales wide, 324 courses high. Reed, 1:48-50.

66. Castello recognized early the benefits of being able to use wide-tube circular knitting machines to produce a web containing textiles with complex stitch configurations, which were removed from the web and incorporated into finished garments. Castello explains that the process of producing textile elements, such as collars, having variety of features like knitting folding creases, knitted sewing marks, mock fashion marks and Jacquard multi-color designs had to be created independently on one or more slow producing flat machines. Castello, 1:39-53. With the advent of single needle selection that can be controlled with programmable patterns in the early 1970's, all of those features could then be combined on a single circular machine and knit simultaneously. Castello, 2:12-21; 3:35-44.

67. In the mid 1970's, computers began to be used as pattern preparation equipment for electronic double knit machines. Reed, 1:45-48. The use of



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computers ushered in a new era for knitting technology, as it did for most equipment of that time. As Reed describes, "[c]omputer electronic knitting brought about the possibilities of making patterns and designs of up to three million stitches (previously approximately 50,000 was maximum). With this system, patterns and designs are possible that before could not be made." Reed, 1:50-55.

68. As the breadth and complexity of computerized patterns increased, the size of circular knitting machines for producing garments also grew to include wide-tube circular knitting machines. Reed states that "[a]n example of a circular knitting machine which will produce knitted structure 10 is Model 9RJ36 made by Wildt, Mellor, Bromley, Ltd. of Leicester, England." Reed, 3:58-60. As described in Burall, the Model 9RJ36 has a diameter of 30 inches. Burall, pp. 46-47. According to ISO 8117, any circular knitting machine with a nominal diameter of 178 mm (7 inches) or larger is categorized as a large (or wide tube) circular knitting machine. ISO 8117, pp. 1-2.

69. By the mid-1970's, it was envisioned that, with the advent of computerized patterns, circular knitting machines could be used to form all types of garments worn by men, women and children. Reed, 5:56-57.

70. Over the next decade, the development of computerized knitting machines progressed in complexity to the point that the technology could be used



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to form a variety of knit configurations within a unitary textile element that would be needed for more durable items, such as shoes. *See* Shimura, Abstract, 1:10-20, 3:4-15; Nishida, Abstract, 3:6-11.

71. For example, by the mid 1980s, the advances in computerized knitting technology led to the development of a multilayered knitted textile in which two knitted layers were interknitted by an elastic spacer layer. Shimura, Abstract, 1:10-20, 3:4-15. This construction first emerged through Raschel or tricot warp knitting technology (*see* Shiomura, Abstract; 1:10-20; 3:4-15), but later migrated to circular knitting machines through additional advances in single needle selection and programming between the dial and cylinder needles (*see* Shepherd, 3:5-4:28).

72. Shiomura determined that these multilayered knitted spacer textiles could be used to form shoe uppers in place of the conventional construction that utilized a plastic foam layer bonded between two fabric layers. Shimura, Abstract; 1:10-20; 3:4-15.

73. Around this same period, footwear production was migrating toward less expensive labor markets (Japan in the 1970s, then Taiwan and Korea in the 1980s, followed by China in the 1990s). As the ability to continually find new inexpensive labor pools became more difficult, the footwear industry, along with the garment industry as a whole, began increasingly looking for new machinery



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and tools to increase automation of the stitching and production processes as an alternative way to reduce the cost of manufacturing. *See* Fujiwara, 1:28-36.

74. In the early 1990s, Tretorn began investigating ways to leverage the advancements in computerized knitting machinery as a means for improving efficiency and reducing cutting waste associated with manufacturing shoe uppers. Nishida, 1:45-47; 2:11-47. Nishida (assigned to Tretorn) contemplates that the method of producing knitted textiles for shoe uppers can be performed with any "conventional textile process." Nishida, 3:6-7. Nishida also recognizes that "the use of program-controlled, particularly computer-controlled, production devices is advantageous, so that style, color, design, size or the like can be varied at will." Nishida, 4:12-18; *see also* 2:40-41; 4:53-54; 5:64-65.

75. Like Nishida, the '288 patent recognizes the benefit of using the advances in knitting machine technology to produce knitted textiles for shoe uppers. Nike identifies the Santoni S.p.A. wide-tube circular knitting machine as being able to form complex knit patterns with higher speeds and productivity. '288 patent, 7:27-30. Nike states that this machine will "form a textile structure having a diameter that ranges from 10 inches to 20 inches, with 8 feed for each diameter. The machine exhibits a maximum 140 revolutions per minute for 10 inch diameters. Furthermore, the machine gauge is variable between 16, 22, 24, 26, 28, and 32 needles per inch, and is suitable for various needle gauges ranging



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from 48 to 75." '288 patent, 7:16-26. Because these wide-tube knitting machines used computer-programmed knit patterns, 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." '288 patent, 7:30-38.

76. While the technology of computerized patterns for wide-tube circular knitting machines may have further evolved between 1992 and 2004 to allow for better quality, speed, and productivity from these machines, Nike did not invent anything about manufacturing textile elements that had not already been envisioned by Castello, Reed, Shiomura, Nishida, Shepherd, and Fujiwara years earlier.

77. I have reviewed other prior art, some of which is relevant to some of the dependent claims. These prior art references describe additional features of shoe uppers made with knitted fabrics. I also had discussions with adidas's external knitting consultant to confirm my understanding of certain stitch configurations. Except for Shepherd, all of these references are prior art under 35 U.S.C. § 102(b) (mentioned in Section I.B above), as they were all published more than one year



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before March 3, 2004. Shepherd is prior art under 35 U.S.C. § 102(e) (mentioned in Section I.B above), as it has a U.S. filing date before March 3, 2004.

78. Other features recited in the Nike claims do not add anything new to what was already known in the art. For example, the concept of adding breathability to a shoe dates back to the early twentieth century with the first Converse Chuck Taylor basketball shoes, which had two extra holes in the upper for additional breathability. Adding mesh panels into the upper for increased breathability has been used long before March 3, 2004. There are many examples of added wear and protection features that have been added since the early 1900s as additional overlays on the base pattern. Likewise, adding additional wear patches to enhance durability or protection also dates back to the early Converse Chuck Taylors.

79. Nishida also describes adding specially constructed regions for durability, support, or breathability. For example, Nishida (3:43-48) discloses "Since, generally, toe area 14 is designed to be relatively deformably soft or elastic, and optionally, also permeable to air, the web of material 1, in toe area 14, according to the present invention, is correspondingly designed by suitable selection of the weave pattern, knit pattern and/or material used . . . ."

80. Furthermore, the concept of forming uppers in multiple layers, with the textile element forming one of the layers, is also well-known long before



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March 3, 2004. The '288 patent itself, Shiomura, and Shepherd all describe such well-known layered configurations in detail. First, both the '288 patent and Shiomura describe a three layered upper comprising an exterior fabric layer, an intermediate plastic foam layer, and an interior fabric layer. '288 patent, 10:50-56; Shiomura, 1:10-20. Shiomura goes on to describe replacing all three layers of the conventional upper with a new knitted spacer fabric, in which the fabric is formed of an outer knit fabric layer, an inner knit fabric layer parallel to and spaced apart from the outer knit fabric layer, and a number of crossing threads that are interknitted to be bound into the outer and inner knit fabric layers. Shiomura, 2:27-35. Shepherd then explains how this multilayered knitted spacer fabric is formed on a double jersey circular knitting machine. Shepherd, 4:53-7:47.

81. Finally, several of the '288 patent claims focus on edges and seam locations in the upper (e.g., '288 patent, claims 1, 3-6, 21-22, 29, 31-33, 36). The placement of seams in various locations is one of the choices made by pattern makers in the shoe industry. Basically, all the seam configurations claimed are simply a few of a limited number of configurations that patternmakers employ to impart various shapes to footwear and to ensure proper fit.

82. Further to this point, the creation of a textile upper for footwear that has edges that are joined together to form seams along the bottom and heel of the upper, as well as in the forefoot area, is a process that has been used to make shoes



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and slippers for more than 100 years. There is nothing new about the various seam locations described in the '288 patent.

83. As Nishida clearly shows in FIGS. 1, 2, 4 and 5, creating a layout for a shoe within a surrounding textile structure that can be cutout and then folded and stitched to form a three-dimensional shoe upper was well known. In fact, the layout shown in FIG. 4 of Nishida is very similar to those shown in the '288 patent. By constructing the upper from the layout shown in FIG. 4 of Nishida, the upper would necessarily have seams in the same places as the upper described and claimed in the '288 patent.

## VIII. GROUND I: NISHIDA IN VIEW OF REED, SHIOMURA, AND SHEPHERD DISCLOSES TO ONE OF ORDINARY SKILL IN THE ART AN ARTICLE OF FOOTWEAR, AS CLAIMED IN CLAIMS 1-38 OF THE '288 PATENT.

84. U.S. Patent No. 5,345,638 to Nishida ("Nishida") issued on September 13, 1994. I understand that Nishida qualifies as prior art to the '288 patent.

85. U.S. Patent No. 3,985,003 to Reed ("Reed") issued on October 12, 1976. I understand that Reed qualifies as prior art to the '288 patent.

86. Paul Burall, "CoID Design Awards," Design, June 1969, pp. 46-47 ("Burall") published in June 1969. I understand that Burall qualifies as prior art to the '288 patent.



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87. ISO 8117:2003(E) Textile machinery - Knitting machines - Nominal diameters of circular machines ("ISO 8117") published on February 15, 2003. I understand that ISO 8117 qualifies as prior art to the '288 patent.

88. U.S. Patent No. 4,785,558 to Shiomura ("Shiomura") issued on November 22, 1988. I understand that Shiomura qualifies as prior art to the '288 patent.

89. U.S. Patent No. 6,779,369 to Shepherd ("Shepherd") has an effective U.S. filing date of July 31, 2003. I understand that Shepherd qualifies as prior art to the '288 patent.

90. As such, with reference to the claim chart attached to this Declaration as Appendix A, Nishida, in combination with Reed, Shiomura, and Shepherd, discloses, teaches, or suggests the features recited in claims 1-38 of the '288 patent.

**A. Preamble**

91. Nishida describes a "a process for the production of a shoe shaped part . . . ." Nishida, 1:10-11; *see also* Abstract; 1:39-47; 1:65-2:10; 2:26-33; 3:27-42; 4:19-30; 4:43-46; 5:3-26; 5:63-6:2; FIGS. 1-3.

92. Reed describes that "[s]till another object is to provide a method for producing a plurality of garments formed about the circumference of a knitted tube." Reed, 2:29-31. Reed goes on to state that "[t]he present invention may be



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used to form all types of garments worn by men, women and children . . . ." Reed, 5:56-57.

### B. Knitting Techniques & Machinery

93. Nishida describes using conventional textile processes and program-controlled web of material production devices to form a textile structure with a single or a plurality of textile elements in the shape of a shoe upper. "In FIGS. 1 and 2, a web of material is identified by 1, and is produced by a ***conventional textile process***, for example, by weaving and/or knitting and/or embroidering." Nishida, 3:6-9 (emphasis added); *see also* Abstract; 1:10-18; 1:47-2:5; 2:11-25; 2:40-47; 3:6-26; 3:43-52; 3:59-4:5; 4:12-18; 4:47-60; 5:64-65; FIGS. 1-2.

94. Nishida also recognizes that "the use of ***program-controlled, particularly computer-controlled, production devices is advantageous***, so that style, color, design, size or the like can be varied at will." Nishida, 4:12-18; *see also* 2:40-41; 4:53-54; 5:64-65.

95. Like Nishida, Reed points out that "[c]omputer electronic knitting brought about the possibilities of making patterns and designs of up to three million stitches (previously approximately 50,000 was maximum). With this system, patterns and designs are possible that before could not be made." Reed, 1:50-55. By way of background, Reed explains that the use of circular knitting machines in the garment industry were historically limited to making tubular,



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knitted garments, such as ladies' stockings, sweaters, and other garments, wherein the entire knitted fabric was used as a unit to form one surface of a finished garment. Reed, 1:33-44. Although Reed recognized that footwear items, such as stockings, were conventionally knit with circular knitting machines, the ability to incorporate complex knit patterns for footwear on a larger scale (as described in Reed) was not historically possible because the labor and complexity involved in manually programming the mechanical-type patterns limited pattern sizes to approximately 144 wales wide, 324 courses high. Reed, 1:48-50

96. Reed goes on to describe using a circular-knitting machine to simultaneously knit one or more textile elements with a surrounding textile structure, the textile elements located in different portions of the textile structure; removing the textile element(s) from the textile structure; and incorporating the textile element(s) into any type of garment worn by men, women, and children, including stockings and hosiery. Reed, Abstract; 1:58-64; 2:14-16; 2:22-31; 3:1-19; 3:58-60; 4:68-5:2; 5:56-57; 5:67-6:5; FIGS. 1, 2A, 2-6.

97. Reed explains that the present invention uses "an electronic circular double knitting machine" and that an "object of the present invention is to provide a method of reducing the cost of manufacturing of garments by ***using the versatility of a computerized electronic knitting machine***." Reed, 1:58-59 (emphasis added); *see also* 2:23-25; FIGS. 1-6.



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### C. Circular-Knitted Textile Structure Formed with a Wide-Tube Circular Knitting Machine

98. As the breadth and complexity of computerized patterns increased, the size of circular knitting machines for producing garments also grew to include wide-tube circular knitting machines. Reed states that "[a]n example of a circular knitting machine which will produce knitted structure 10 is Model 9RJ36 made by Wildt, Mellor, Bromley, Ltd. of Leicester, England." Reed, 3:58-60. With respect to the example shown in Figures 1 and 2, Reed explicitly describes that he is using his knitting machine and technique to make a plurality of "skirts 16, 18, and 20" "[a]round the circumference of the knitted structure 10." Reed, 3:5-7; FIGS. 1-2. That fact alone would inform a skilled person that the circumference of the circular knitted tube must be at least large enough to accommodate the width of three skirts, and would certainly require a circumference larger than 22 inches as each skirt (even sized for a child) would require more than 7 inches of space around the circumference of the knitted tube. The skilled person would also have understood that a circular knitting machine having a circumference of at least 22 inches (i.e., a nominal diameter of at least 7 inches) is a wide-tube circular knitting machine. This understanding is evidenced by ISO 8117, which provides a table in which any circular knitting machine with a nominal diameter of 178 mm (7 inches) or larger is categorized as a large (or wide tube) circular knitting machine. ISO 8117, pp. 1-2. Hence, skilled persons would thus have recognized that wide-tube knitting



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machines were used to make Reed's garments and would understand that the Model 9RJ36 was one such example. Indeed, as a revolutionary and award-winning wide-tube knitting machine, the skilled person at least as of March 3, 2004, would have been aware of the 9RJ36, and would have known that it had a diameter of 30 inches, as evidenced by Burall. Burall, pp. 46-47.

### D. Knitted Textile Element Formed Unitarily with a Knitted Textile Structure

99. Nishida and Reed describe that one or more textile elements are formed unitarily with the surrounding textile structure. Nishida describes that the layouts 2 are produced by either (1) printing them on the web of material or (2) knitting them inside the web of material 1. Nishida, 1:50-56. "[I]n the production of a web of material, both ***the patterns or partial patterns in the form of layouts of the shoe upper*** and the patterns or partial patterns in the form of a sole part, ***are produced by*** a fabric printing process (which is generally well known in the textile industry) on the web of material and/or by ***a textile production process inside the web of material*** . . . ." Nishida, 1:50-56 (emphasis added); *see also* Abstract; 1:47-2:5; 2:11-25; 2:40-47; 3:6-26; 3:43-52; 3:59-4:5; 4:47-60; 5:64-65; FIGS. 1-2.

100. Nishida states that "[a]s can be seen, ***any number of layouts 2 in the most varied configurations and/or designs as well as of different sizes can be produced on a single web of material 1***. For this purpose, above all, ***the use of program-controlled, particularly computer-controlled, production devices is***



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***advantageous***, so that style, color, design, size or the like can be varied at will." Nishida, 4:12-18 (emphasis added); *see also* 2:40-41; 4:53-54; 5:64-65.

101. Nishida goes on to explain that "***only just those parts of the web of material*** are ***produced*** in the necessary quality, thickness, multilayers or the like ***which correspond to the pattern or to an area of a pattern of the shoe upper or the related shoe part***. The ***remaining area of the web of material*** in contrast can consist of a simple, lightweight or inexpensive material quality, which ***holds together only the patterns or areas of such patterns in the web of material*** after their completion." Nishida, 2:12-20 (emphasis added); *see also* Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2.

102. Nishida also describes that "[t]he web of material 1 can be provided with a single or with a plurality of layouts 2 of the shape of a shoe upper 3, as it is represented from the side, for example, in FIG. 3." Nishida, 3:9-12; *see also* Abstract; 1:47-2:5; 2:11-25; 2:40-2:47; 3:6-26; 3:43-52; 3:59-4:5; 4:47-60; 5:64-65; FIGS. 1-3.

103. Reed similarly states that "[t]he present invention uses an electronic circular double knitting machine programmed to ***simultaneously knit two concentric tubes***, one on the dial set of needles and a second on the cylinder set of needles and additionally programmed to interconnect the two concentric tubes by a knit interlock stitch ***to form the outline of the design of a garment***." Reed, 1:58-



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64 (emphasis added). A person of ordinary skill in the relevant art at least as of March 3, 2004 would have understood that the textile element is produced unitarily with the surrounding textile structure in the circular knitting machine due to the way that a circular knitting machine forms the consecutive courses around the circumference of the circular knitting machine. Because each consecutive course of the circular knitting machine forms a portion of the textile element and the surrounding textile structure, the circular knitting machine forms the textile element unitarily with the surrounding textile structure.

104. Reed further explains that these computerized electronic knitting machines may be used to produce "a ***plurality of garments*** formed about the circumference of a knitted tube." Reed, 2:29-31; FIG. 1 (emphasis added). "As can be seen, the knitted structure 10 includes (around its circumference) a ***plurality of finished garments*** which need only be severed from the structure 10 and turned inside out if a hidden seam is desired." Reed, 3:15-19 (emphasis added); *see also* Abstract; 1:58-64; 2:22-25; 3:5-7; 3:58-60; 4:68-5:2; FIG. 1.



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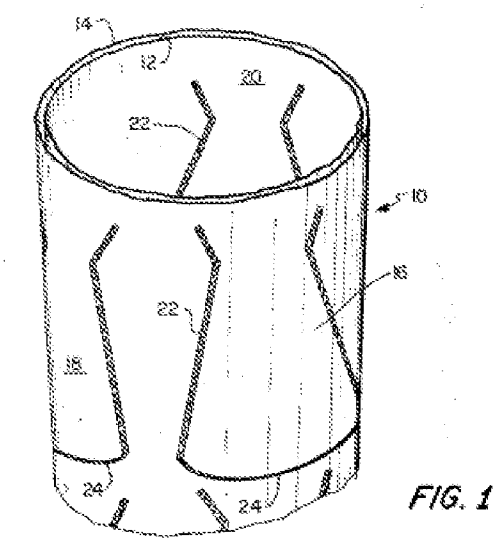


FIG. 1

### E. Textile Element Removed from the Textile Structure

105. Nishida and Reed describe how the textile elements are removed from the cylindrical textile structure. Nishida states that the "process for the production of a shoe shaped part [involves] using a web of material with a plurality of patterns in the form of the layout of a shoe upper, ***cutting out these layouts from the web of material*** and stitching the parts of the shoe upper to a top part, and fastening the related part of the sole to the edge area of the cut-open outside edge of the assigned layout and to a shoe shaped part produced according to this process." Nishida, 1:10-18 (emphasis added); *see also* Abstract; 1:65-2:10; 2:20-25; 2:30-33; 3:31-35; 4:31-43.

106. Reed similarly states that "[t]he interconnecting knitting 24 is merely to define the lower outline of the skirt ***upon which the pattern may be cut***. As can be seen, the knitted structure 10 includes (around its circumference) ***a plurality of***



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***finished garments which need only be severed from the structure 10*** and turned inside out if a hidden seam is desired." Reed, 3:12-19 (emphasis added). "As indicated previously, once the knitted structure 10 is removed from the knitting machine, ***the individual garments may be severed by cutting along the outline*** formed by the interconnecting stitches represented by the X's and O's. If desired, the ***fabric may be cut with a hot knife*** so that the edges are fused together to add additional strength to the seams." Reed, 5:67-6:5 (emphasis added); *see also* Abstract; 2:14-16; 3:12-19; 5:67-6:5; FIGS. 2, 4-6.

**F. Textile Structure Including an Outline of the Textile Element**

107. Nishida and Reed describe forming an outline/pattern/texture in the cylindrical textile structure having a shape and/or proportion of the textile element. Nishida states that "in the production of a web of material, both ***the patterns or partial patterns in the form of layouts of the shoe upper*** and the patterns or partial patterns in the form of a sole part, ***are produced by*** a fabric printing process (which is generally well known in the textile industry) on the web of material and/or by ***a textile production process inside the web of material*** . . . ." Nishida, 1:50-56 (emphasis added); *see also* Abstract; 1:10-18; 1:40-47; 1:50-2:47; 4:13-18; 4:47-60; 5:63-6:2; FIGS. 1-2, 4-5.

108. Reed additionally states that "[t]he garments 16, 18 and 20 are ***outlined*** by a plurality of interconnecting knitted stitches 22 and 24." Reed, 3:8-9



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(emphasis added). "The ***outline seam 24*** is formed from two sets of X 's and O's which are offset in the wale axes by four wales. The degree of wale offset to form the desired outline is a matter of design and thus not critical." Reed, 4:42-45 (emphasis added). "[O]nce the knitted structure 10 is removed from the knitting machine, the individual garments may be severed by cutting along ***the outline formed by the interconnecting stitches*** represented by the X's and O's." Reed, 5:67-6:3 (emphasis added).

### G. Textile Element having a Unitary Construction and having a Plurality of Knit Constructions and/or Areas with Different Stitch Configurations

109. Nishida and Reed describe that the textile element has a unitary construction within which there are areas of different knit configurations having different textures, which may be produced by varying the stitch type within each area.

110. Nishida describes that "in the embodiment according to FIGS. 1 and 2, with layout 2 on the web of material 1, ***areas 26 and 27 are produced in a configuration***, color or style ***that is different from the other areas***." Nishida, 4:6-9 (emphasis added). "With the use of program-controlled web of material production devices, after a one-time creation of the program, the size of the layout corresponding to the shoe size, the woven or ***knitted type of individual areas or contours***, the type of fiber or yarn and/or the color ***can be selected almost at will***."



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Nishida, 2:40-45 (emphasis added); *see also* Abstract; 1:65-69; 3:15-26; 3:47-48; 4:12-28; 4:48-55; 5:56-6:2.

111. For example, the '288 patent describes varying the "stitch type" as a way to vary the type of texture in different areas, and as separate from varying the type of yarn. '288 Patent, 9:33-50; 9:54-62. Nishida specifically describes using different materials, different compositions (such as twisted or parallel processing or the like), and different knit types or knit patterns, therefore describing for the skilled person using different stitch configurations in different areas as a way to give the textile element different properties in different areas. Nishida, Abstract; 1:65-69; 2:40-45; 3:15-26; 3:47-48; 4:6-9; 4:12-28; 4:48-55; 5:56-6:2.

112. Nishida goes on to describe that these varying properties may include a varying elasticity, air permeability, absorptivity, softness, extensibility, wear resistance, and appearance. "Since, generally, toe area 14 is designed to be relatively deformably soft or elastic, and optionally, also permeable to air, the web of material 1, in toe area 14, according to the present invention, is correspondingly designed by suitable selection of the weave pattern, knit pattern and/or the material used, such as, for example, Silk or plastic. The type of production can, additionally, ***insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a net-like woven or knitted structure***." Nishida, 3:43-52. "[T]he layouts of the shoe upper and sole parts are ***produced by***



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***modifying the overall construction of the web of material*** in the locations of the layouts relative to that in portions thereof where the layouts of the shoe upper and the sole parts are not provided, ***using*** one of a ***different*** weaving and ***knitting type*** for the layouts of the shoe upper than is used for producing the sole parts, said weaving and knitting types being matched to differing requirements for materials of the shoe upper and sole part of a shoe in relation to properties thereof including at least one of the properties of absorptivity, ***air permeability***, ***softness***, ***extensibility***, wear resistance and appearance." Nishida, 6:1-31(emphasis added); *see also* 5:63-6:2.

113. Regarding varying properties, Nishida further states that "[a]s already indicated, the webs of material being used can be produced by program-controlled web of material production devices whose programs can be matched almost at will according to the corresponding basic setting with deviations in the size of the layouts of the individual shoe uppers or ***with changes of the type of weave or knit of individual areas*** or contours, the type of fiber or yarn and/or the color." Nishida, 5:63-6:2. A person of ordinary skill in the art at least as of March 3, 2004 would have understood that Nishida's disclosure regarding varying the knit of individual areas would include having a substantially smooth texture in one area, and a rougher texture in another area. Such an understanding is evident in view of Nishida's statement that "softness" is specifically one of the properties to be



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combined with Nishida's statement that "[l]ayout 2 is divided into different individual parts or areas, which differ from one another, such as by being of another material style and/or by being of different fibers or yarns, for example, from wool, wool with metal yarns, silk, silk with metal yarns, wool with plastic fibers or the like . . . ." Nishida, 3:15-25. Furthermore, a person of ordinary skill in the relevant art at least as of March 3, 2004 would have understood Nishida's disclosure regarding a varying extensibility to mean that portions of the knit configuration may have a rib structure, which is designed to provide greater elasticity / extensibility than portions of the knit configuration without rib structures.

114. Reed likewise describes this feature in two different ways:

115. First, Reed describes that the edges of the garments 16, 18, 20 are formed by interknitted stitches, whereas the remainder of the garments 16, 18, 20 are formed by non-interknitted stitches. Specifically, Reed describes that the outline of the garments 16, 18, 20 is formed with interknitted stitches (shown in X's and O's in FIG. 2), which are formed by feeds 1, 2, 3, and 4 on needles 7, 9, 8, and 10 (as shown in FIG. 3B and 3D). Reed, 5:3-18, FIGS. 3A-3E. In contrast, "two feeds [i.e., feeds 1, 3 for the dial needles] are used for one course of the inner tube 12 and two feeds [i.e., feeds 2, 4 for the cylinder needles] are used for the outer tube 14." Reed, 4:61-64; FIGS. 2A, 3A-3E.

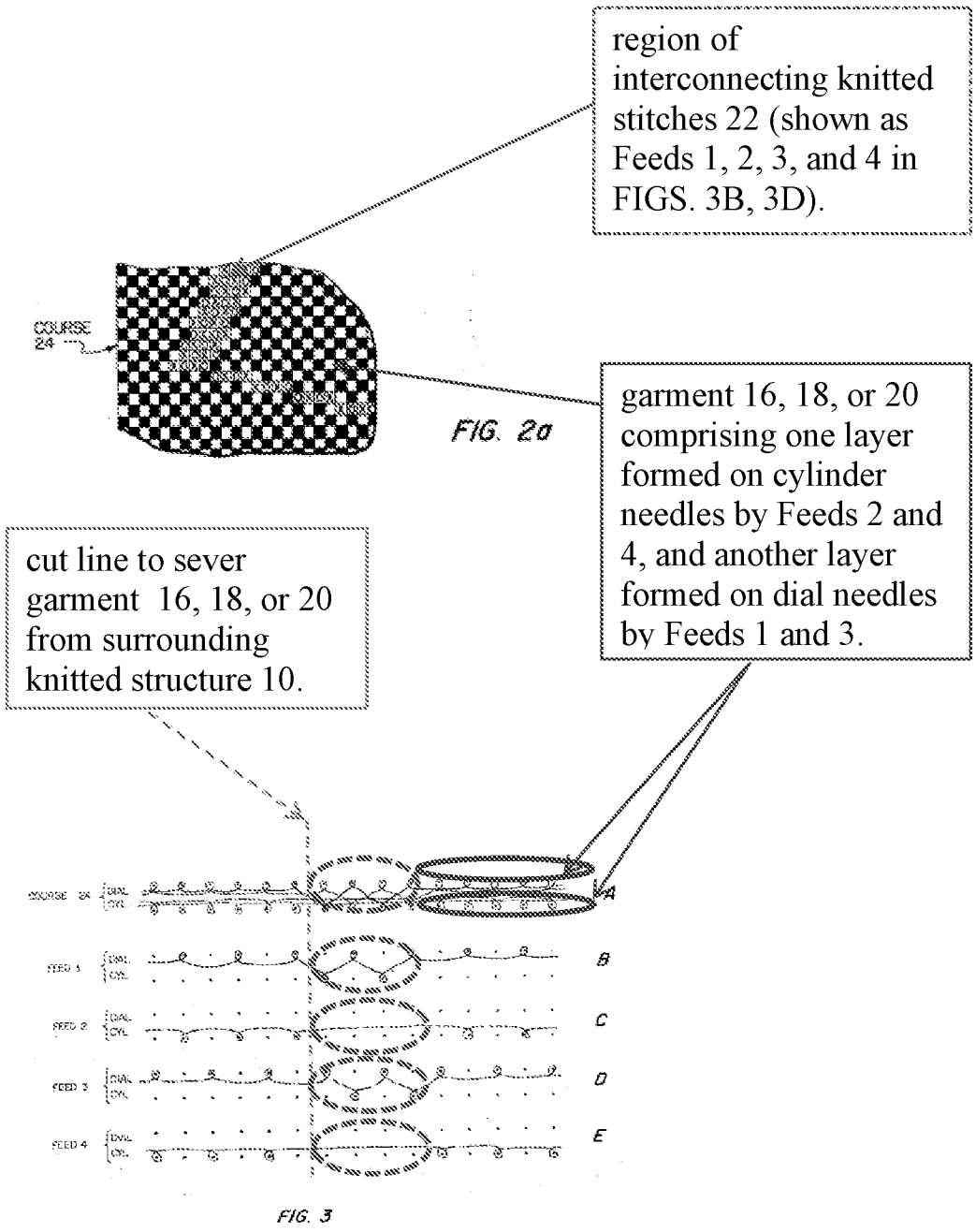


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116. Reed goes on to explain that "once the knitted structure 10 is removed from the knitting machine, the individual garments may be severed by cutting along the outline formed by the interconnecting stitches represented by the X's and O's." Reed, 5:67-6:3; *see also* 4:61-64; FIGS. 2, 2A, 3A-3E. As illustrated in the attached claim chart for claim 1 of the '288 patent, because the interknitted stitches are part of the garments 16, 18, 20, and the garments 16, 18, 20 also comprise areas that are only formed as part of the outer tube 14 or the inner tube 12, the garments 16, 18, 20 have a plurality of different knitted textures formed by varying at least one of the stitch type and the yarn type.



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117. Second, Reed also goes on to describe how the two layers 12, 14 themselves may be formed of different yarns or stitch configurations. "If the two tubes 12 and 14 are knitted of two different fibers, the knitted structure may form sections of a garment to be assembled in the regular manner. For example, the



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outside tube 14 may be a normal decorative fabric wherein the inner tube 12 may be formed of a material such as lining. By simultaneously knitting and interknitting the two layers, a step is saved by producing a section of garment which is prelined. Similarly, the layer 12 (instead of being lining) may be interfacing, which is attached to the outside layer 14 and again saves a step in the manufacture of garments. Another example where two different fibers are used to make the inner and outer tubing would be in the foundation garment industry, where the inner fabric could be cotton or other soft fibers and the outer fabric would be lycra or elasticized yarns." Reed, 3:61-4:9.

### H. First (Longitudinal), Second (Vertical), and/or Third (Forefoot) Edges and Seams

#### 1. Longitudinal Edges Joined Together to Define at least a Portion of a Void for Receiving a Foot and/or to Form a Seam that Extends along a Lower Region/Surface of an Upper

118. Nishida shows longitudinal edges 29.3 and 29.4 in FIG. 4 (reproduced below), as illustrated in the attached claim chart for claim 1 of the '288 patent. "With the embodiment according to FIG. 4, a sole part section 29.1 that extends over the entire length of the sole is provided on outside contour 31 in the approximate form of a half of sole part 29, and a sole part section 29.2 which forms the remainder of sole part 29 is provided on the outside contour 30. Both sole part sections 29.1 and 29.2 complement each other to complete sole part 29.



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In this case, their outside contours 29.3 and 29.4 are connected with one another, for example stitched and/or glued and/or fused or the like, preferably by a longitudinal seam." Nishida, 5:3-13; *see also* 4:22-30; 6:5-41; 6:47-54; FIGS. 3-4.

119. As part of converting the layout into a shoe upper, Nishida describes joining longitudinal edges 29.3 and 29.4 in FIG. 4 to define at least a portion of a void for receiving a foot, as well as to form a seam that extends along a lower region of an upper. "[T]he sole part is formed of sole part sections which extend over the entire length of an insole to be formed and which are connected to outside contours of the layout of the shoe upper; and wherein outside edge portions of the sole part sections are fastened together, by producing a lengthwise seam, to form the sole part." Nishida, 6:47-54; *see also* 4:22-30; 5:3-13; 6:5-41; FIGS. 3, 4 (reproduced below).



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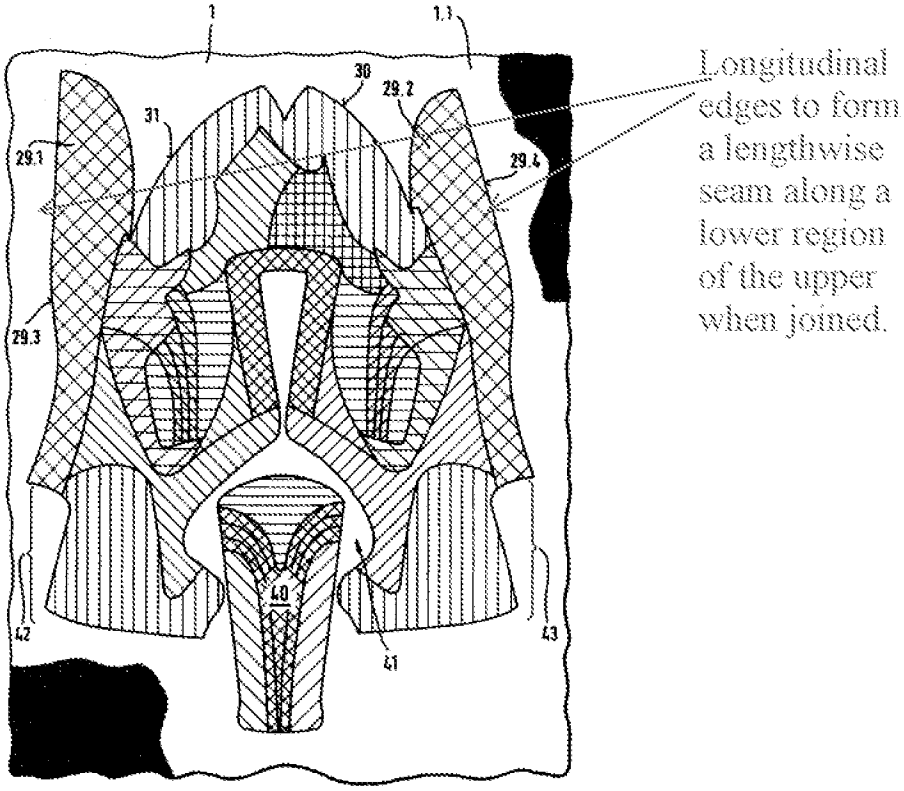


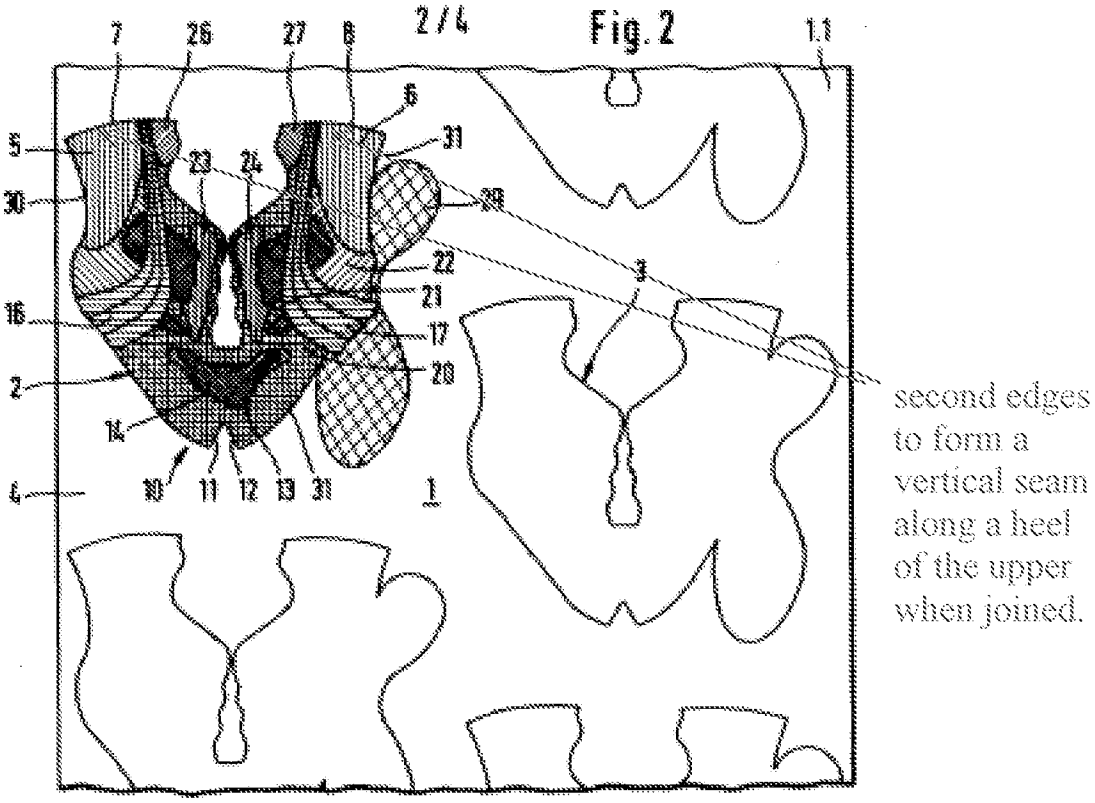

Fig. 4

### 2. Second (Vertical) Edges Joined to Form a Seam that Extends Vertically along a Heel Region of an Upper

120. Nishida also discloses joining a second pair of edges as part of converting the layout into a shoe upper, in which the joined edges form a second seam that extends vertically along a heel region of the upper, as illustrated in the attached claim chart for claim 4 of the '288 patent. "After cutting out layout 2 from the web of material 1, the edges 7 and 8 are stitched together and a heel seam thus is formed. Then, heel counter 9, represented in FIG. 3, is applied, for example, glued and/or stitched, to adjacent areas 5 and 6." Nishida, 3:31-36; *see also* 4:9-11; 6:5-41; FIGS. 2 (reproduced below), 4.



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### 3. Third (Forefoot) Edges Joined to Form a Seam that Extends through a Forefoot Area of an Upper

121. Nishida also discloses joining a third pair of edges as part of converting the layout into a shoe upper, in which the joined edges form a third seam that extends through a forefoot area of the upper, as illustrated in the attached claim chart for claim 6 of the '288 patent. "Correspondingly, the contours of edges 11 and 12 are stitched together in the form of shoe toe 10, and a seam is formed on the shoe toe. To reduce wear, a toe cap 15, represented in FIG. 3, can be applied, especially glued and/or stitched, on the front area, adjacent to front edge 13 of toe area 14." Nishida, 3:37-42; *see also* 4:19-30; 6:5-41; FIGS. 2 (reproduced below), 4.



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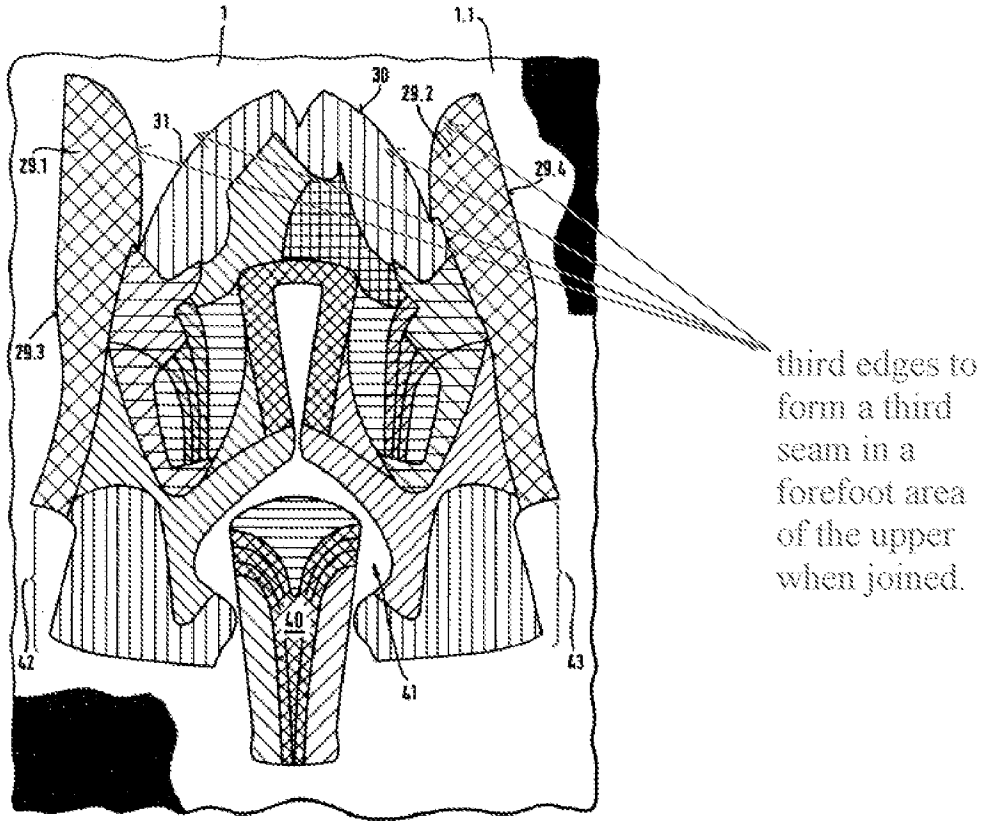


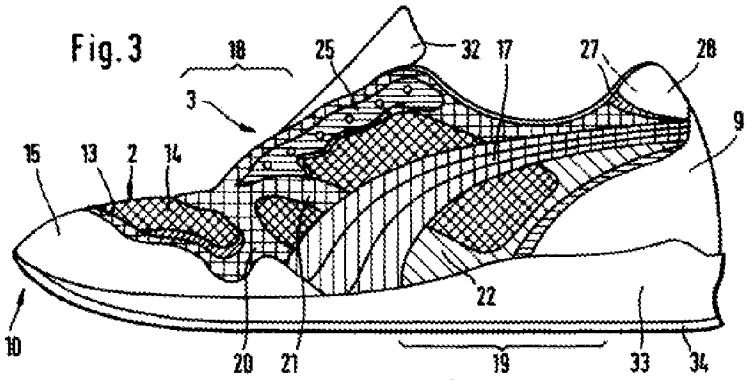

Fig. 4

## I. Combining the Textile Element Into Footwear Components

122. Nishida describes "***stitching parts of the layout*** of the cut-out unit on provided seams ***to form an upper of the shoe shaped part*** . . . ." Nishida, 6:36-38 (emphasis added). "Completed shoe upper 3 is then brought into a gluing, injection or casting mold, in which a midsole 33 and an outsole 34 are molded by known measures, as is represented in FIG. 3." Nishida, 4:43-46; *see also* Abstract; 1:40-47; 1:50-56; 1:60-2:5; 2:34-37; 2:40-45; 3:6-26; 3:46-48; 3:66-4:1; 4:13-18; 4:25-60; 5:10-26; FIG. 3 (reproduced below).



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## J. Upper Construction Using Textile Elements

### 1. Circular-Knitted Textile Element Forms at least a Portion of a Lateral Side, a Medial Side, and an Instep Region of the Upper

123. Nishida describes that the textile element can be positioned in at least a portion of a lateral side, a medial side, and an instep region of the shoe upper. Nishida, 3:15-18; 3:27-42 (describing that parts of the layout forms a heel region and a toe region); 3:59-4:9 (describing that parts of the layout form the heel region and lacing areas); 5:3-8 (describing that parts of the layout form a sole region); 3:15-4:46; FIGS. 1-5.

### 2. Circular-Knitted Textile Element is one of an Exterior Layer, an Intermediate Layer, and an Interior Layer of the Upper

124. There are at least two types of upper construction involving three layers, in which a circular-knitted textile element forms an interior layer of the upper. Both types are designed as an improvement over a well-known multilayered upper construction, which is described in the background sections of Shiomura and the '288 patent.



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125. Regarding this well-known construction, Shiomura states that "[i]n general, a fabric is commonly used as a shoe upper of an athletic shoe. It is said that proper elasticity inherent in the shoe upper made of a fabric is advantageous in that it does not give a sense of oppression and a sense of fatigue. With respect to the shoe upper made of a fabric having such elasticity, U.S. Pat. Nos. 3,793,750 and 4,043,058 each propose a shoe upper having a multi-layer sandwich construction prepared by ***interposing a plastic foam layer, such as a polyurethane layer, between an outer fabric layer and an inner fabric layer and bonding them***." Shiomura, 1:10-20 (emphasis added).

126. Likewise, the '288 patent states that "[v]arious materials may be utilized in manufacturing the upper. The upper of an article of athletic footwear, for example, ***may be formed from multiple material layers that include an exterior layer, an intermediate layer, and an interior layer.***" '288 patent, 1:54-58 (emphasis added). "Although the materials selected for the upper vary significantly, ***textile materials often form at least a portion of the exterior layer and interior layer***." '288 patent, 2:13-15 (emphasis added). "***An intermediate layer*** of the upper may be formed from a ***lightweight polymer foam material*** that provides cushioning and protects the foot from objects that may contact the upper." '288 patent, 2:4-6 (emphasis added).



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### a) Substitution of Circular-Knit Textile in Place of Interior Fabric Layer in Conventional Multilayered Upper Construction

127. With respect to the first type of improvement over the well-known multilayered upper construction, the '288 patent explains that the only difference between the well-known prior art multi-layered construction and the claimed invention is the use of the textile element as the inner layer. Specifically, the '288 patent states that "***[u]pper 230 has a configuration that is similar to the configuration of the conventional upper in that various material layers are utilized. In contrast with the conventional upper***, however, ***the interior layer is formed of textile element 240***, which is manufactured through the process discussed above. That is, ***textile element 240 is a single element of textile that forms the interior layer of upper 230***." '288 patent, 10:50-56 (emphasis added); FIG. 14 (reproduced below).

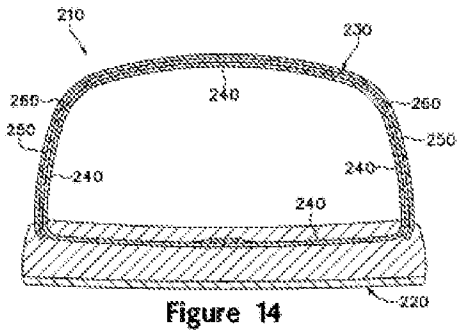


Figure 14

128. The '288 patent describes that the benefit of this modification to the well-known multilayered upper construction is so that "textile element 240


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includes few seams that may contact the foot. In addition, the stitches utilized at various locations of textile element 240 may modify the texture of the interior surface of upper 230, thereby limiting the degree of slip that occurs between the foot and upper 230 or enhancing the air-permeability of upper 230 in specific locations." '288 patent, 10:56-63 (emphasis added).

129. It would have been obvious to the skilled person at least as of March 3, 2004, that the interior (or the exterior) fabric layer of a conventional multi-layered upper construction could be replaced with a circular-knitted textile, such as the one collectively described in Nishida and Reed (Nishida, Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2; Reed, Abstract; 1:58-64; 2:22-25; 2:29-31; 3:5-7; 3:58-60; 4:68-5:2; FIG. 1), as this is nothing more than combining "prior art elements according to known methods to yield predictable results" and/or the "[u]se of known technique[s] to improve similar devices (methods, or products) in the same way." *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417-22 (2007); MPEP § 2143 (A, C). This is particularly the case where "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. at 421. In this configuration, the upper comprises an exterior fabric layer, an intermediate plastic foam layer, and an interior circular-knitted textile layer collectively described by Nishida and Reed,



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wherein the circular-knitted textile of Nishida and Reed forms an interior layer of the upper.

**b) Replacement of Conventional Multilayered Upper Construction with Spacer Fabric Comprising Multiple Circular-Knit Layers**

130. With respect to the second type of improvement over the well-known multilayered upper construction, Shiomura explains that the use of the "plastic foam layer interposed therein is not necessarily satisfactory in air permeability. Therefore, this causes problems such that the inside of the shoe becomes stuffy and hot because of abnormal temperature increase attributable to the sweating and generation of heat from feet during exercise, which brings about a discomfort. Further, although the above-mentioned resin foam layer has elasticity, it is large in resistance to the movement between the outer and inner fabric layers, because it is bonded to each of the outer and inner fabric layers with an adhesive, which leads to a large resistance of the shoe upper per se to bending. This inhibited the effect of alleviating a sense of oppression and a sense of fatigue for the feet." Shiomura, 1:21-35.

131. In view of these drawbacks associated with both the type of intermediate layer used, as well as the use of an adhesive to bond the layers together, Shiomura instead proposed to replace all three layers with a new spacer fabric comprising three knitted layers. Specifically, Shiomura describes that "[a]s

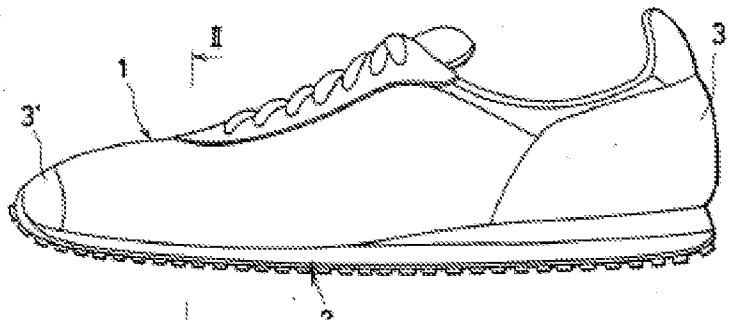
shown in FIGS. 1 and 2, the athletic shoe of the present invention comprises a shoe upper 1 and a rubber sole 2 attached to the shoe upper 1." Shiomura, 2:20-22; FIG. 1 (reproduced below). "FIG. 2 is a cross-sectional view taken along the line II--II of FIG. 1." Shiomura, 2:8-9; FIG. 2 (reproduced below).

132. "As shown in FIGS. 3 and 4, the shoe upper 1 comprises an outer knit fabric layer 4, an inner knit fabric layer 5 provided parallel to the outer knit fabric layer 4 through a space 6, and a number of crossing threads 7 which cross the space 6. The outer knit fabric layer 4 is knitted from a yarn 41 while the inner knit fabric layer 5 is knitted from a yarn 42. The crossing threads 7 are interknitted to be bound into the outer and inner knit fabric layers 4, 5." Shiomura, 2:27-35; FIGS. 3-4 (reproduced below).



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FIG.1




outer knit fabric layer 4 forms an exterior surface of the shoe upper 1.

FIG.2

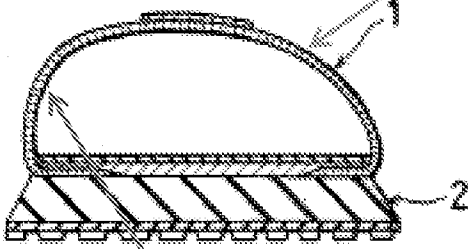
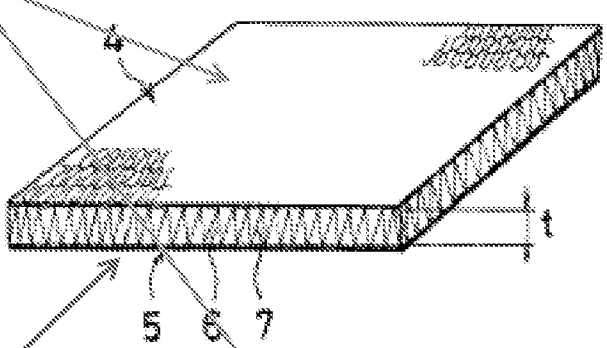
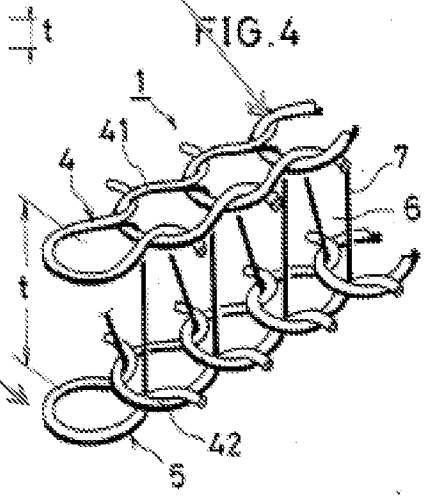



FIG.3




inner knit fabric layer 5 forms an interior surface of the shoe upper 1.

FIG.4






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133. Shiomura additionally explains that "[a]lthough the yarns 41, 42 used for the outer and inner knit fabric layers may be any of synthetic fibers such as polyester and nylon and natural fibers such as cotton and hemp and are not particularly limited, ***the yarn 41 of the outer knit fabric layer is preferably a filament yarn or a spun yarn made of a synthetic fiber having excellent wear resistance*** while the ***yarn 42 of the inner knit fabric layer is preferably a spun yarn made of a natural fiber having excellent moisture absorptivity***." Shiomura, 2:45-54. Because the outer knit fabric layer 4 forms an exterior surface of the upper 1, Shiomura suggests that this layer should be formed of "a synthetic fiber having excellent wear resistance." Shiomura, 2:45-54. Conversely, because the inner knit fabric layer 5 forms an interior surface of the upper 1 adjacent the wearer's foot when worn, Shiomura suggests that this layer should be formed of "a natural fiber having excellent moisture absorptivity" so as to wick away sweat and heat from feet during exercise. Shiomura, 2:45-54. Thus, Shiomura describes an upper formed of three knitted layers: an inner knitted fabric layer 5, an intermediate knitted spacer layer 6, and an outer knitted fabric layer 4.

134. Like Shiomura, Shepherd describes that "[r]eferring to FIGS. 1 and 2 of the accompanying drawings, the weft knitted flat jacquard spacer fabric 10 includes a weft knitted jacquard pattern front layer 11 and a weft knitted plain back layer 12 disposed parallel to one another at a predetermined spacing and coupled



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together by a network of spacer yarns 13 which are preferably firmer and more resilient than the yarns of the face and back layers." Shepherd, 5:12-18, FIG. 2 (reproduced below).

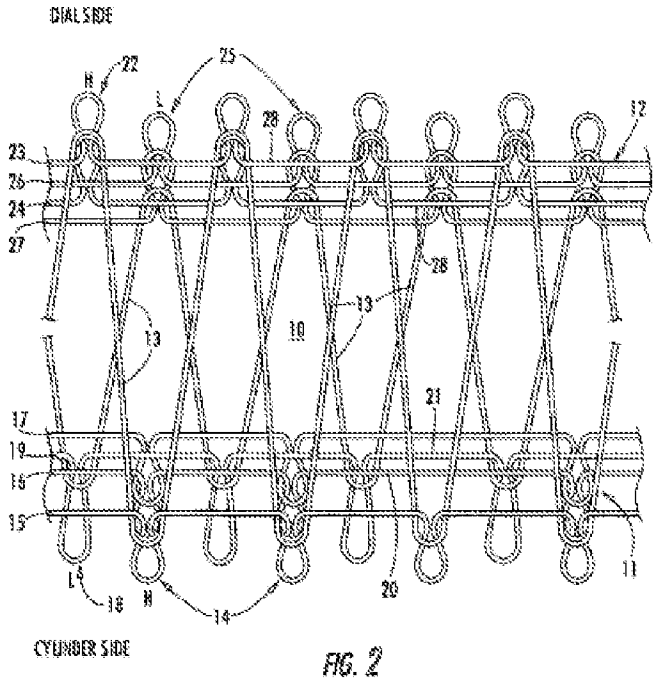


FIG. 2

135. Shepherd goes on to explain how the knitted layers (like those described in Shiomura) may be knitted with a circular knitting machine. "The jacquard pattern weft knitted spacer fabrics illustrated in the accompanying drawings may be knitted on a double jersey circular knitting machine that is described in the aforementioned EP-A-0 591 987, with that machine operating in an interlock gating mode with the cylinder and dial needles reciprocating between welt, tuck and knit positions respectively in substantially common planes. The cylinder needle selection is controlled by an electronic selection mechanism in


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conjunction with cylinder cams, while the dial needle selection is controlled by dual cam tracks respectively controlling the low and high butt dial needles." Shepherd, 4:62-5:5; FIG. 1 (reproduced below). In this configuration, Shiomura and Shepherd collectively describe an upper formed of three circular-knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular-knitted fabric layer 4, wherein the inner circular-knitted fabric layer 5 forms an interior layer of the upper 1, the intermediate circular-knitted spacer layer 6 forms an intermediate layer of the upper 1, and the outer circular-knitted fabric layer 4 forms an exterior layer of the upper 1.

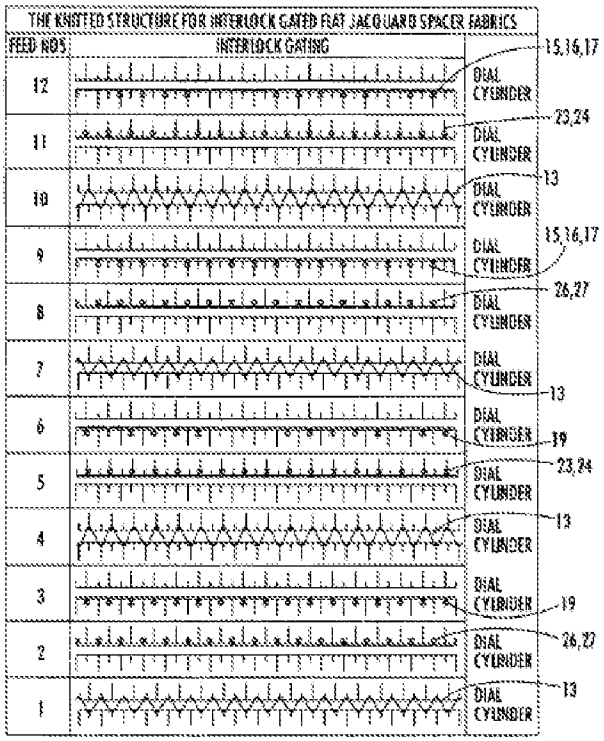



FIG. 1



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### 3. Upper includes an Exterior Layer, an Intermediate Layer, and an Interior Layer, and the Circular-Knitted Textile Element Forms at least a Portion of the Interior Layer

136. First, as described in Section VIII.J.2.a) above, both the '288 patent and Shiomura describe a well-known upper construction in which a plastic foam intermediate layer is sandwiched between an interior fabric layer and an exterior fabric layer. '288 patent, 1:54-58: 2:4-6; 2:13-15; Shiomura, 1:10-20. The '288 patent goes on to describe that the only difference between the well-known prior art multi-layered construction and the claimed invention is the use of the textile element as the inner layer. '288 patent, 10:50-63.

137. In view of this well-known prior art construction described in the '288 patent and in Shiomura, it would have been obvious to the skilled person at least as of March 3, 2004, that the interior fabric layer of a conventional multi-layered upper construction could be replaced with a circular-knitted textile, such as the one collectively described in Nishida and Reed. Nishida, Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2; Reed, Abstract; 1:58-64; 2:22-25; 2:29-31; 3:5-7; 3:15-19; 3:58-60; 4:68-5:2; FIG. 1. In this configuration, the upper comprises an exterior fabric layer, an intermediate plastic foam layer, and an interior circular-knitted textile layer collectively described by Nishida and Reed, wherein the circular-knitted textile of Nishida and Reed forms at least a portion of the interior layer of the upper.



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138. Second, as described in Section VIII.J.2.b) above, Shiomura and Shepherd collectively describe an upper formed of three circular-knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular- knitted fabric layer 4, wherein the inner circular-knitted fabric layer 5 forms at least a portion of the interior layer of the upper 1. Shiomura, 2:8-9; 2:20-22; 2:27-35; 2:45-54; FIGS. 1-4; Shepherd, 4:62-5:5; 5:12-18, FIGS. 1-2.

#### 4. The Circular-Knitted Textile Element Forms an Interior Surface of the Upper

139. First, as described in Section VIII.J.2.a) above, both the '288 patent and Shiomura describe a well-known upper construction in which a plastic foam intermediate layer is sandwiched between an interior fabric layer and an exterior fabric layer. '288 patent, 1:54-58: 2:4-6; 2:13-15; Shiomura, 1:10-20. The '288 patent goes on to describe that the only difference between the well-known prior art multi-layered construction and the claimed invention is the use of the textile element as the inner layer. '288 patent, 10:50-63.

140. In view of this well-known prior art construction described in the '288 patent and in Shiomura, it would have been obvious to the skilled person at least as of March 3, 2004, that the interior fabric layer of a conventional multi-layered upper construction could be replaced with a circular-knitted textile, such as the one collectively described in Nishida and Reed. Nishida, Abstract; 1:40-2:5; 2:11-



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2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2; Reed, Abstract; 1:58-64; 2:22-25; 2:29-31; 3:5-7; 3:58-60; 4:68-5:2; FIG. 1. In this configuration, the upper comprises an exterior fabric layer, an intermediate plastic foam layer, and an interior circular-knitted textile layer collectively described by Nishida and Reed, wherein the circular-knitted textile of Nishida and Reed forms an interior layer of the upper.

141. Second, as described in Section VIII.J.2.b) above, Shiomura and Shepherd collectively describe an upper formed of three knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular- knitted fabric layer 4. Shiomura, 2:8-9; 2:20-22; 2:27-35; 2:45-54; FIGS. 1-4; Shepherd, 4:62-5:5; 5:12-18, FIGS. 1-2. In this configuration, Shiomura and Shepherd collectively describe an upper formed of three circular-knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular-knitted fabric layer 4, wherein the inner circular-knitted fabric layer 5 forms an interior layer of the upper 1.

142. Third, Reed discloses that "[i]f the two tubes 12 and 14 are knitted of two different fibers, the knitted structure may form sections of a garment to be assembled in the regular manner. For example, the outside tube 14 may be a normal decorative fabric ***wherein the inner tube 12 may be formed of a material such as lining***. By simultaneously knitting and interknitting the two layers, a step



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is saved by producing a section of garment which is prelined." Reed, 3:61-68 (emphasis added). It would have been obvious to the skilled person at least as of March 3, 2004, that modifying Nishida's upper to incorporate the circular-knitted textile element of Reed would result in an upper with an interior surface formed by the inner tube 12 portion of Reed's circular-knitted textile.

**5. The Circular-Knitted Textile Element Forms an Interior Surface of the Upper, and at least one Additional Textile Element forms an Exterior Surface of the Footwear**

143. First, as described in Section VIII.J.2.a) above, both the '288 patent and Shiomura describe a well-known upper construction in which a plastic foam intermediate layer is sandwiched between an interior fabric layer and an exterior fabric layer. '288 patent, 1:54-58: 2:4-6; 2:13-15; Shiomura, 1:10-20. The '288 patent goes on to describe that the only difference between the well-known prior art multi-layered construction and the claimed invention is the use of the textile element as the inner layer. '288 patent, 10:50-63.

144. In view of this well-known prior art construction described in the '288 patent and in Shiomura, it would have been obvious to the skilled person at least as of March 3, 2004, that the interior fabric layer of a conventional multi-layered upper construction could be replaced with a circular-knitted textile, such as the one collectively described in Nishida and Reed. Nishida, Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2;



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Reed, Abstract; 1:58-64; 2:22-25; 2:29-31; 3:5-7; 3:58-60; 4:68-5:2; FIG. 1. In this configuration, the upper comprises an exterior fabric layer, an intermediate plastic foam layer, and an interior circular-knitted textile layer collectively described by Nishida and Reed, wherein the circular-knitted textile of Nishida and Reed forms an interior surface of the upper, and the exterior fabric layer is an additional textile element that forms an exterior surface of the footwear.

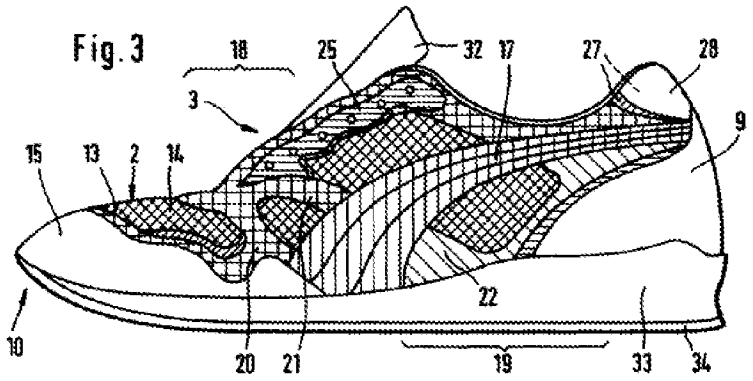
145. Second, as described in Section VIII.J.2.b) above, Shiomura and Shepherd collectively describe an upper formed of three knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular- knitted fabric layer 4. Shiomura, 2:8-9; 2:20-22; 2:27-35; 2:45-54; FIGS. 1-4; Shepherd, 4:62-5:5; 5:12-18, FIGS. 1-2. In this configuration, Shiomura and Shepherd collectively describe an upper formed of three circular-knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular-knitted fabric layer 4, wherein the inner circular-knitted fabric layer 5 forms an interior surface of the upper 1, and the outer circular-knitted fabric layer 4 is an additional textile element that forms an exterior surface of the footwear.

#### 6. Circular-Knitted Textile Element Forms at least a Portion of both an Interior Surface and an Exterior Surface of the Upper



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146. Nishida describes that additional elements may be attached to an exterior surface of the layouts 2 and therefore form a portion of the exterior surface of the upper, thereby leaving portions of the layouts 2 uncovered so that the uncovered portions (such as areas 20, 21, 22, and toe area 14) form at least a portion of the exterior surface of the upper. Nishida, Abstract; 2:11-22; 2:37-39; 2:45-47; 3:6-15; 3:29-36; 3:39-42; 3:59-4:1; 4:9-11; FIG. 3.




147. As described in Section VIII.J.4 above, Reed discloses that "[i]f the two tubes 12 and 14 are knitted of two different fibers, the knitted structure may form sections of a garment to be assembled in the regular manner. For example, the outside tube 14 may be a normal decorative fabric ***wherein the inner tube 12 may be formed of a material such as lining***. By simultaneously knitting and interknitting the two layers, a step is saved by producing a section of garment which is prelined." Reed, 3:61-68 (emphasis added).

148. It would have been obvious to the skilled person at least as of March 3, 2004, that modifying Nishida's upper to incorporate the circular-knitted textile

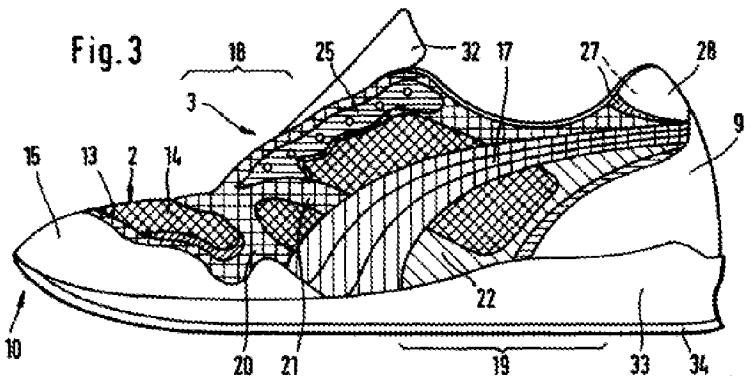


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element of Reed would result in an upper having at least a portion of an interior surface formed by the inner tube 12 portion of Reed's circular-knitted textile and at least a portion of an exterior surface formed by the outer tube 14 portion of Reed's circular-knitted textile.

### 7. Additional Element Secured to the Exterior Surface (Forefoot and/or Heel) of the Circular-Knitted Textile Element and Forms at least a Portion of the Exterior Surface

149. Nishida describes that additional elements such as toe caps, heel counters, and/or lacing strips may be secured to the exterior surface of the upper and may form a portion of the exterior surface of the upper. The toe caps may be secured to a forefoot area of the upper, and the heel counters may be secured to a heel area of the upper. Nishida, Abstract; 2:11-22; 2:37-39; 2:45-47; 3:6-15; 3:29-36; 3:39-42; 3:59-4:1; 4:9-11; FIG. 3.




## K. Aperture(s) Formed in the Textile Element

150. The '288 patent describes apertures in one of three ways:



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(1) "[T]he u-shaped area becomes ***an aperture*** in textile element 40 and effectively forms ankle opening 36" ('288 patent, 6:25-26);

(2) "The air-permeability of textile element 40" may also vary in the different areas. Third texture 48" is formed to include ***a plurality of apertures*** that extend through textile element 40". The ***apertures*** may be formed by omitting stitches at specific locations during the wide-tube circular knitting process, and the ***apertures*** facilitate the transfer of air between the void within upper 20 and the area outside of upper 20" ('288 patent, 9:47-54); and

(3) "Lace 131 extends through ***a plurality of apertures*** formed in textile element 140. The ***apertures*** may be formed by omitting stitches at specific locations." ('288 patent, 10:16-19).

151. With respect to the first type of "ankle opening" aperture, Nishida discloses that the u-shaped area in the layout 2 forms an ankle opening 36 when formed into the shoe upper. *See* Nishida, FIGS. 1-5.

152. With respect to the second type of "air-permeability" apertures, Nishida discloses that the "type of production can, additionally, insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a ***net-like woven or knitted structure***." Nishida, 3:49-52 (emphasis added); *see also* 3:43-52; 3:66-4:5; 6:25-31.



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153. With respect to the third type of "lace hole" apertures, Nishida describes lacing strips that may be layered over the net-like structure to reinforce that structure and holes formed in the lacing strips may be aligned with the existing holes in the net-like structure. Nishida, 4:1-5. Thus, Nishida explains that "the lacing areas 23 and 24 *can be made dimensionally stable* in corresponding manners, especially *if, for example, no additional trimmings, such as the lacing strips 25, shown in FIG. 3, are to be applied*." Nishida, 4:1-5 (emphasis added). Nishida thus recognizes that (a) the lacing strips are optional and may not be applied; (b) that the net-like structure may itself then be used or (c) if no lacing strips are applied and the net-like structure is used, then the lacing areas can be further stabilized via an embroidery. Nishida, 4:31-38. However, if the additional lacing strips and embroidery are not added, the textile element still includes the net-like structure in the lacing area.

### L. The Skilled Person Would Have Been Motivated to Combine Nishida, Reed, Shiomura, and Shepherd.

154. Nishida's explicit statements that a method of producing knitted textiles for shoe uppers can be performed with any "conventional textile process . . ." such as "weaving and/or knitting and/or embroidering" (Nishida, 3:6-9) and that "the use of program-controlled, particularly computer-controlled, production devices is advantageous, so that style, color, design, size or the like can be varied at will" (Nishida, 4:12-18) would have suggested to a person of ordinary skill in

the relevant art at least as of March 3, 2004 that Nishida's method of making shoes with uppers formed of textile fabrics could be performed with any knitting machine having computerized or programmable single needle selection capabilities, as those advanced capabilities provide the ability to reduce the quality and quantity of cutting waste between layouts.

155. With this understanding, the skilled person would have been motivated to form articles of footwear as described in Nishida using Reed's computer-controlled circular knitting machinery and resulting textile element, as such a design choice would have been predictable and well known to a person with ordinary skill in the art. This is particularly the case where "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). Reed, Abstract; 1:58-64; 2:14-16; 2:22-31; 3:1-19; 3:58-60; 4:68-5:2; 5:56-57; 5:67-6:5; FIGS. 1, 2A, 2-6.

156. Moreover, the skilled person would have found Reed's process of producing textile elements to be analogous art to Nishida's process, as both are directed to methods of simultaneously forming textile articles within a surrounding textile structure using "program-controlled web of material production devices" (as described in Nishida, 2:40-41; 4:15-17; 4:53-54; 5:64-65) and a "computerized electronic knitting machine" (as described in Reed, 1:58-59; 2:23-25); removing the textile element from the surrounding textile structure; and incorporating the



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textile element into a wearable item. Nishida, Abstract; 1:10-18; 1:40-2:37; 2:40-47; 3:6-52; 3:59-4:5; 4:12-60; 5:3-26; 5:63-6:2; 6:36-38; FIGS. 1-3; Reed, 1:58-64; 2:14-16; 2:22-31; 3:1-19; 3:58-60; 4:68-5:18; 5:56-57; 5:67-6:5; FIGS. 1, 2A, 2-6.

157. Additionally, Nishida and Reed are directed to reducing costs associated with producing textile elements using the latest advances in knitting technology. Nishida states that "[i]t is of further advantage in the process according to the present invention that the individual patterns or partial patterns already can be produced ***directly*** in the production of the web of material in the desired shoe size, by which the cutting waste can be still further limited, since the individual patterns or partial patterns in the provided size can directly adjoin one another." Nishida, 2:27-33 (emphasis added). "With the use of program-controlled web of material production devices, after a one-time creation of the program, the size of the layout corresponding to the shoe size, the woven or knitted type of individual areas or contours, the type of fiber or yarn and/or the color can be selected almost at will." Nishida, 2:40-45.

158. Reed similarly states that "[a]nother object of the present invention is to provide a method of reducing the cost of manufacturing of garments by using the versatility of a computerized electronic knitting machine" and that "[s]till another object is to provide a method for producing a plurality of garments formed about the circumference of a knitted tube." Reed, 2:22-31. Given the variety of



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sizes of shoe uppers and the fact that including multiple uppers around circumference of a circular knitted tube directly increases efficiency, the skilled person would have been motivated to combine Nishida's process with Reed's process to produce textiles for shoe uppers, particularly in view of the improvements in single needle selection that allows for specific control over stitch configurations in different parts of the upper.

159. The skilled person would have been motivated to look to Shiomura and Shepherd for suggestions regarding knitted textile structures that meet the performance characteristics for athletic shoes. The multilayered knitted spacer fabric described in Shiomura was known to provide a "shoe upper [with] a combination of suitable elasticity with high air permeability" for use with "an athletic shoe suitable for use primarily in marathon, jogging, tennis, volleyball and like sports." Shiomura, 1:6-9; 1:38-41. Shepherd describes how to make this multilayered knitted spacer fabric using computer-controlled circular knitting machinery. Shepherd, 4:53-7:47.

160. In view of the substantial similarities between the methods described in Reed and Nishida, and the specifics regarding the multilayered circular-knitted spacer fabric described in Shiomura and Shepherd, a person of ordinary skill in the relevant art would certainly have been motivated to modify Nishida's method to include the additional features described by Reed, Shiomura, and Shepherd to



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produce a textile element for use in a shoe upper, as well as to produce a shoe incorporating such a textile element.

161. The combination of Nishida, Reed, Shiomura, and Shepherd is nothing more than combining "prior art elements according to known methods to yield predictable results" and/or the "[u]se of known technique[s] to improve similar devices (methods, or products) in the same way." *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417-22 (2007); MPEP § 2143 (A, C). This is particularly the case where "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. at 421.

162. It is therefore my opinion that Nishida, Reed, Shiomura, and Shepherd together teach and render obvious claims 1-38 of the '288 patent.

## IX. GROUND II: NISHIDA IN VIEW OF CASTELLO, FUJIWARA, SHIMURA, AND SHEPHERD DISCLOSES TO ONE OF ORDINARY SKILL IN THE ART AN ARTICLE OF FOOTWEAR, AS CLAIMED IN CLAIMS 1-38 OF THE '288 PATENT.

163. U.S. Patent No. 5,345,638 to Nishida ("Nishida") issued on September 13, 1994. I understand that Nishida qualifies as prior art to the '288 patent.

164. U.S. Patent No. 4,038,840 to Castello ("Castello") issued on August 2, 1977. I understand that Castello qualifies as prior art to the '288 patent.



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165. U.S. Patent No. 6,330,814 to Fujiwara ("Fujiwara") issued on December 18, 2001. I understand that Fujiwara qualifies as prior art to the '288 patent.

166. David J. Spencer, Knitting Technology: A Comprehensive Handbook and Practical Guide (Third Ed., Woodhead Publishing Ltd. 2001) ("Spencer") published in 2001. I understand that Spencer qualifies as prior art to the '288 patent.

167. ISO 8117:2003(E) Textile machinery - Knitting machines - Nominal diameters of circular machines ("ISO 8117") published on February 15, 2003. I understand that ISO 8117 qualifies as prior art to the '288 patent.

168. U.S. Patent No. 4,785,558 to Shiomura ("Shiomura") issued on November 22, 1988. I understand that Shiomura qualifies as prior art to the '288 patent.

169. U.S. Patent No. 6,779,369 to Shepherd ("Shepherd") was filed in the U.S. on July 31, 2003. I understand that Shepherd qualifies as prior art to the '288 patent.

170. As such, with reference to the claim chart attached to this Declaration as Appendix B, Nishida, in combination with Castello, Fujiwara, Shiomura, and Shepherd, discloses, teaches, or suggests the features recited in claims 1-38 of the '288 patent.



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### A. Preamble

171. Nishida describes a "a process for the production of a shoe shaped part . . . ." Nishida, 1:10-11; *see also* Abstract; 1:39-47; 1:65-2:10; 2:26-33; 3:27-42; 4:19-30; 4:43-46; 5:3-26; 5:63-6:2; FIGS. 1-3.

172. Castello describes that "[t]he present invention resides in a novel method of fabricating knitted collars on circular knitting machines . . . ." Castello, 1:39-40; *see also* Abstract; 1:35-2:4; 3:34-4:10; 4:22-5:44; 6:35-58; 7:1-5; FIGS. 1, 2A, 2-5.

173. Fujiwara similarly states that "FIG. 1 illustrates schematically a formation of a circular knitted fabric as a first embodiment of the present invention, from which fabric a garment such as a sweater is obtained without necessitating any subsequent sewing process." Fujiwara, 3:45-48; *see also* 1:58-3:18; 3:59-4:65.

### B. Knitting Techniques & Machinery

174. Nishida describes using conventional textile processes and program-controlled web of material production devices to form a textile structure with a single or a plurality of textile elements in the shape of a shoe upper. "In FIGS. 1 and 2, a web of material is identified by 1, and is produced by a ***conventional textile process***, for example, by weaving and/or knitting and/or embroidering." Nishida, 3:6-9 (emphasis added); *see also* Abstract; 1:10-18; 1:47-2:5; 2:11-25;



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2:40-47; 3:6-26; 3:43-52; 3:59-4:5; 4:12-18; 4:47-60; 5:64-65; FIGS. 1-2.

175. Nishida also recognizes that "the use of ***program-controlled, particularly computer-controlled, production devices is advantageous***, so that style, color, design, size or the like can be varied at will." Nishida, 4:12-18; *see also* 2:40-41; 4:53-54; 5:64-65.

176. Like Nishida, Castello describes that "[i]n utilizing the method of the present invention, circular machines having either Jacquard cards, or pattern wheels or drums or any other known suitable mechanical means of needle selection can be used. For purposes of illustration, a Jacquard type machine with cards, such as a TJI or Links and Links machine will be described." Castello, 1:43-49. By way of background, Castello recognized early the benefits of being able to use wide-tube circular knitting machines to produce a web containing textiles with complex stitch configurations, which were removed from the web and incorporated into finished garments. Castello explains that the process of producing textile elements, such as collars, having variety of features like knitting folding creases, knitted sewing marks, mock fashion marks and Jacquard multi-color designs had to be created independently on one or more slow producing flat machines. With the advent of single needle selection that can be controlled with programmable patterns, all of those features could then be combined on a single circular machine and knit simultaneously. Castello, 1:39-53; 2:12-21; 3:35-44.

177. Fujiwara similarly describes using computerized large circular knitting machines to produce textile structures having one or more textile elements located therein. "In other words, it is desirable that the circular knitting machine is the one that, at each thread feeding position, is provided with ***a computer controlled pattern control mechanism***. Namely, for practicing the present invention, it is desirable that the circular knitting machine is of a so-called double knitting type by which an independent needle selection control is obtained at each thread feeder not only for the cylinder needles but also for the dial needles. Such a type of a circular knitting machine is, for example, available from Fukuhara Industrial Trading Co., Ltd., Osaka, Japan under the trade name of V-LEC4D." Fujiwara, 4:12-21 (emphasis added); *see also* 1:58-3:18; 4:66-5:7; FIGS. 1, 4, 6, 7.

### C. Circular-Knitted Textile Structure Formed with a Wide-Tube Circular Knitting Machine

178. Castello goes on to describe an exemplary circular knitting machine that may be used for performing the method. "Referring again to FIG. 5, I show a sketch which may be employed in conjunction with an ***eight-cut*** L.H. circular machine having 64 levers per automat. Assuming twelve automats, the machine could be programmed to knit three collar constructions 16 per layer 12. In the illustration shown, ***768 needles*** would be employed less approximately 10 needles on each side of the gate on automats one and twelve." Castello, 5:18-25 (emphasis added); *see also* Abstract; 1:35-53; 1:47-64; 3:34-39; 4:23-38.



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179. The skilled person at least as of March 3, 2004, would have understood how to calculate the diameter of the L.H. circular knitting machine based on the information provided by Castello. Spencer provides extrinsic evidence to support this understanding. As described in Spencer, "[l]atch needle weft knitting machines normally have a gauge expressed in ***needles per inch***, which in the USA is referred to as ***'cut'***, being short for the phrase 'tricks cut per inch'." Spencer, pp. 29-30 (emphasis added). Thus, according to Spencer, an eight-cut circular knitting machine, which is a latch needle weft knitting machine, has eight needles per inch. Given that there are 768 needles around the circumference of the machine described in Castello, the total circumference in inches is calculated by dividing the total number of needles (768) by the number of needles per inch (8), which results in a total circumference of 96 inches. The circumference of a circular knitting machine is equal to the diameter times $\pi$, so the diameter is equal to 96 inches / $\pi$, or 30.55 inches. The skilled person would also have understood that a circular knitting machine with a nominal diameter of 7 inches or larger is a wide-tube circular knitting machine. ISO 8117 provides extrinsic evidence to support this understanding, as it provides a table in which any circular knitting machine with a nominal diameter of 178 mm (7 inches) or larger is categorized as a large (or wide tube) circular knitting machine. ISO 8117, pp. 1-2.



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### D. Knitted Textile Element Formed Unitarily with a Knitted Textile Structure

180. Nishida, Castello, and Fujiwara describe that one or more textile elements are formed unitarily with the surrounding textile structure. Nishida states that "[a]s can be seen, ***any number of layouts 2 in the most varied configurations and/or designs as well as of different sizes can be produced on a single web of material 1***. For this purpose, above all, ***the use of program-controlled, particularly computer-controlled, production devices is advantageous***, so that style, color, design, size or the like can be varied at will." Nishida, 4:12-18 (emphasis added); *see also* 2:40-41; 4:53-54; 5:64-65.

181. Nishida goes on to explain that "***only just those parts of the web of material*** are ***produced*** in the necessary quality, thickness, multilayers or the like ***which correspond to the pattern or to an area of a pattern of the shoe upper or the related shoe part***. The ***remaining area of the web of material*** in contrast can consist of a simple, lightweight or inexpensive material quality, which ***holds together only the patterns or areas of such patterns in the web of material*** after their completion." Nishida (emphasis added), 2:12-20; *see also* Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2.

182. Nishida also describes that "[t]he web of material 1 can be provided with a single or with a plurality of layouts 2 of the shape of a shoe upper 3, as it is represented from the side, for example, in FIG. 3." Nishida, 3:9-12; *see also*



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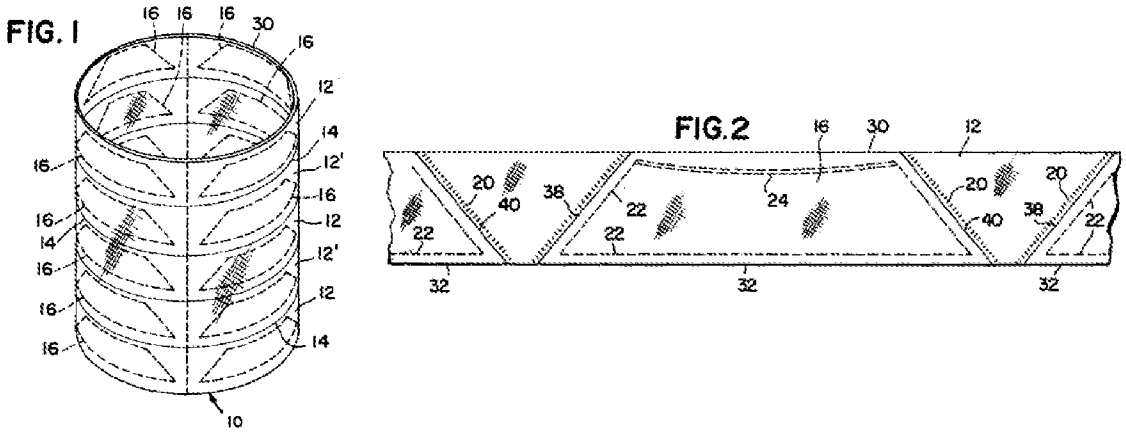
Abstract; 1:47-2:5; 2:11-25; 2:40-2:47; 3:6-26; 3:43-52; 3:59-4:5; 4:47-60; 5:64-65; FIGS. 1-3.

183. Castello explains that "[a]fter a suitable sketch has been prepared on the graph paper showing the desired collar shape, design, color, mock fashion marks, etc., knitting machine cards (or some equivalent system) are then punched or otherwise prepared in conventional manner and set up on the machine to thereby automatically control the machine stitches to knit the tubular cloth 10 with the layers 12, 12', the separating threads 14 and the collar construction 16 knitted therein." Castello, 3:59-67. Castello further states that "[t]he method of the present invention also eliminates the need for patterns for use when cutting inasmuch as ***knitting cutting guide lines 20 are knit directly into the tubular knitted cloth 10 during the knitting operation***." Castello, 4:39-42 (emphasis added). A knitted, indented, circular or straight fold ***crease mark 24 can be knit directly into the tubular cloth 10 during the knitting operation***. Castello, 4:53-55; *see also* 3:34-45; 3:68-4:55; 5:18-44; FIGS. 1, 2 (reproduced below). A person of ordinary skill in the relevant art at least as of March 3, 2004 would have understood that Castello's textile element is produced unitarily the surrounding textile structure in the circular knitting machine due to the way that a circular knitting machine forms the consecutive courses around the circumference of the circular knitting machine. Because each consecutive course of the circular knitting machine forms a portion



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of the textile element and the surrounding textile structure, the circular knitting machine forms the textile element unitarily with the surrounding textile structure.




184. Castello goes on to explain that "[t]he tubular fabric is designed to produce a plurality of vertically juxtaposed layers, each having a height equal to the height of the collar being produced. A ***plurality of collars***, for example, four are knitted in each layer." Castello, 1:59-63 (emphasis added); *see also* 1:65-68; 3:34-49; 3:59-4:4; FIGS. 1, 2A.

185. Fujiwara similarly describes that "[a]ccording to the present invention, the circular knitted fabric is constructed by an inner and outer layers, which are separate with each other and which are knitted by the dial and cylinder needles, respectively. The inner and outer layers are, along an outline of an article or a garment, connected with each other by using a stitching construction using both of the dial and cylinder needles." Fujiwara, 2:31-37; *see also* 1:58-3:18; 4:66-5:7; FIGS. 1, 4 (reproduced below); FIGS. 6, 7. Fujiwara further states that "[t]he



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***progress of the knitting causes a circular knitted fabric*** of a substantially hose shape ***to be produced, which has closed stitched lines M as repeated patterns in the continuous length of the fabric***." **Fujiwara**, 6:12-15 (emphasis added). Like Castello, a person of ordinary skill in the relevant art at least as of March 3, 2004 would have understood that Fujiwara's textile element is produced unitarily with the surrounding textile structure in the circular knitting machine due to the way that a circular knitting machine forms the consecutive courses around the circumference of the circular knitting machine. Because each consecutive course of the circular knitting machine forms a portion of the textile element and the surrounding textile structure, the circular knitting machine forms the textile element unitarily with the surrounding textile structure.

Fig. 1

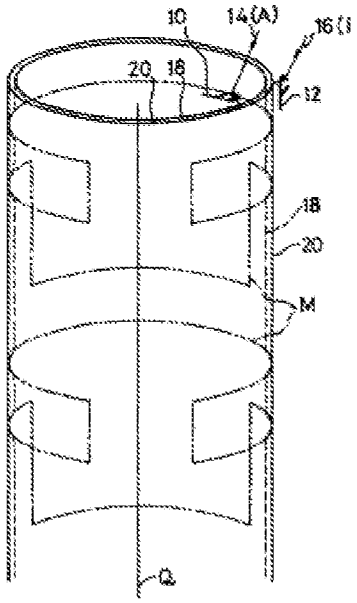
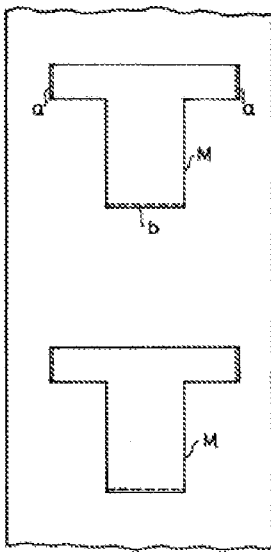



Fig. 4




186. Fujiwara further states that "[t]he progress of the knitting causes a circular knitted fabric of a substantially hose shape to be produced, which has



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closed stitched lines M as ***repeated patterns*** in the continuous length of the fabric. The fabric is cut along the longitudinal cut line Q in FIG. 1. As a result, a continuous length of a fabric having closed stitched lines M as ***repeated patterns*** as shown in FIG. 4 is obtained. Then, the fabric is subjected to a cutting along the stitching line M, while the stitched parts are at least partly remained." Fujiwara, 6:12-20 (emphasis added); FIGS. 1, 4, 6, 7.

### E. Textile Element Removed from the Textile Structure

187. Nishida, Castello, and Fujiwara describe how the textile elements are removed from the cylindrical textile structure. Nishida states that the "process for the production of a shoe shaped part [involves] using a web of material with a plurality of patterns in the form of the layout of a shoe upper, ***cutting out these layouts from the web of material*** and stitching the parts of the shoe upper to a top part, and fastening the related part of the sole to the edge area of the cut-open outside edge of the assigned layout and to a shoe shaped part produced according to this process." Nishida, 1:10-18 (emphasis added); *see also* Abstract; 1:65-2:10; 2:20-25; 2:30-33; 3:31-35; 4:31-43.

188. Castello similarly states that "[a]fter the tubular cloth 10 has been knit by the machine (not shown), the draw threads 14 are pulled to separate the cloth into a plurality of individual layers 12, 12'. The layers are then cut along the knitted



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cut guide lines 20 to produce a plurality of individual collars 16, each having cut sides 38, 40." Castello, 3:67-4:4; *see also* 4:38-45; 4:67-5:17.

189. Likewise, Fujiwara explains that "[a]s a result, when the fabric is cut outwardly along the outline while the stitched parts are at least partially left, a garment can be obtained, which has a front and back bodies, which are connected along the outline M." Fujiwara, 5:7-11; *see also* 1:58-3:18; 6:12-42; 7:25-37.

**F. Textile Structure Including an Outline of the Textile Element**

190. Nishida, Castello, and Fujiwara describe forming an outline/pattern/texture in the cylindrical textile structure having a shape and/or proportion of the textile element. Nishida states that "in the production of a web of material, both ***the patterns or partial patterns in the form of layouts of the shoe upper*** and the patterns or partial patterns in the form of a sole part, ***are produced by*** a fabric printing process (which is generally well known in the textile industry) on the web of material and/or by ***a textile production process inside the web of material*** . . . ." Nishida, 1:50-56 (emphasis added); *see also* Abstract; 1:10-18; 1:40-47; 1:50-2:47; 4:13-18; 4:47-60; 5:63-6:2; FIGS. 1-2, 4-5.

191. Castello likewise states that "[t]he method of the present invention also eliminates the need for patterns for use when cutting inasmuch as knitting cutting guide lines 20 are knit directly into the tubular knitted cloth 10 during the knitting operation. The only cutting required is along the sides 38, 40 of the collar



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which have the cutting guide lines 20 already knit directly in the fabric. Mock fashion marks 22 can be knit along the sides 38, 40 and the bottom edge 32' of the collar in any desired design or pattern by employing conventional knitting procedures. The bottom edge 32' of the collar need not be additionally sewn inasmuch as this is a knitted finished edge which remains after pulling the draw thread 14 and so requires no additional operations." Castello, 4:38-52; *see also* 1:68; 2:45-50; 3:50-58; 4:2-4; 4:11-12; 4:22-33; 4:67-5:17; 5:35-44; FIG. 5.

192. Similarly, Fujiwara states that "[i]n FIG. 1, a closed phantom line M indicates, in a very schematic manner, an outline of a sweater as a garment wherein one of the inner and outer layers 18 and 20 becomes one side (front body) of the sweater while the other of the inner and outer layers 18 and 20 becomes the other side (back body) of the sweater. Along the outline M of a necessary width, the inner and outer tubular layers 18 and 20 are connected or stitched with each other, so that the both of the layers 18 and 20 are integrated." Fujiwara, 4:66-5:7; *see also* 2:34-37; 3:62-4:5; 5:20-41; 6:12-22; 7:25-32; FIGS. 1, 4, 6, 7.

### G. Textile Element having a Unitary Construction and having a Plurality of Knit Constructions and/or Areas with Different Stitch Configurations

193. Nishida, Castello, and Fujiwara describe that the textile element has a unitary construction within which there are areas of different knit configurations



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having different textures, which may be produced by varying the stitch type within each area.

194. Nishida describes that "in the embodiment according to FIGS. 1 and 2, with layout 2 on the web of material 1, ***areas 26 and 27 are produced in a configuration***, color or style ***that is different from the other areas***." Nishida, 4:6-9 (emphasis added). "With the use of program-controlled web of material production devices, after a one-time creation of the program, the size of the layout corresponding to the shoe size, the woven or ***knitted type of individual areas or contours***, the type of fiber or yarn and/or the color ***can be selected almost at will***." Nishida, 2:40-45 (emphasis added); *see also* Abstract; 1:65-69; 3:15-26; 3:47-48; 4:12-28; 4:48-55; 5:56-6:2.

195. For example, the '288 patent describes varying the "stitch type" as a way to vary the type of texture in different areas, and as separate from varying the type of yarn. '598 Patent, 9:33-50; 9:54-62. Nishida specifically describes using different materials, different compositions (such as twisted or parallel processing or the like), and different knit types or knit patterns, therefore describing for the skilled person using different stitch configurations in different areas as a way to give the textile element different properties in different areas. Nishida, Abstract; 1:65-69; 2:40-45; 3:15-26; 3:47-48; 4:6-9; 4:12-28; 4:48-55; 5:56-6:2.



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196. Nishida goes on to describe that these varying properties may include a varying elasticity, air permeability, absorptivity, softness, extensibility, wear resistance, and appearance. "Since, generally, toe area 14 is designed to be relatively deformably soft or elastic, and optionally, also permeable to air, the web of material 1, in toe area 14, according to the present invention, is correspondingly designed by suitable selection of the weave pattern, knit pattern and/or the material used, such as, for example, Silk or plastic. The type of production can, additionally, ***insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a net-like woven or knitted structure***." Nishida, 3:43-52. "[T]he layouts of the shoe upper and sole parts are ***produced by modifying the overall construction of the web of material*** in the locations of the layouts relative to that in portions thereof where the layouts of the shoe upper and the sole parts are not provided, ***using*** one of a ***different*** weaving and ***knitting type*** for the layouts of the shoe upper than is used for producing the sole parts, said weaving and knitting types being matched to differing requirements for materials of the shoe upper and sole part of a shoe in relation to properties thereof including at least one of the properties of absorptivity, ***air permeability***, ***softness***, ***extensibility***, wear resistance and appearance." Nishida, 6:1-31(emphasis added); *see also* 5:63-6:2.



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197. Regarding varying properties, Nishida further states that "[a]s already indicated, the webs of material being used can be produced by program-controlled web of material production devices whose programs can be matched almost at will according to the corresponding basic setting with deviations in the size of the layouts of the individual shoe uppers or ***with changes of the type of weave or knit of individual areas*** or contours, the type of fiber or yarn and/or the color." Nishida, 5:63-6:2. A person of ordinary skill in the art at least as of March 3, 2004 would have understood that Nishida's disclosure regarding varying the knit of individual areas would include having a substantially smooth texture in one area, and a rougher texture in another area. Such an understanding is evident in view of Nishida's statement that "softness" is specifically one of the properties to be combined with Nishida's statement that "[l]ayout 2 is divided into different individual parts or areas, which differ from one another, such as by being of another material style and/or by being of different fibers or yarns, for example, from wool, wool with metal yarns, silk, silk with metal yarns, wool with plastic fibers or the like . . . ." Nishida, 3:15-25. Furthermore, a person of ordinary skill in the relevant art at least as of March 3, 2004 would have understood Nishida's disclosure regarding a varying extensibility to mean that portions of the knit configuration may have a rib structure, which is designed to provide greater



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elasticity / extensibility than portions of the knit configuration without rib structures.

198. For example, Castello describes that "as seen in FIG. 5, a graph 18 is first laid out in accordance with practices well known to those skilled in the art to show features such as peripheral knitted cutting guide lines 20, knitted fashion marks 22, knitted neck fold lines 24 and knitted guide marks 26, 28. The guide marks 26, 28 serve as guides to aid sewing machine operators when the collar is being affixed to the remainder of the garment." Castello, 3:51-58.

199. As illustrated in the graph 18 (FIG. 5), "a collar construction 16 can be produced on a single circular knitting machine having an integral knitted fold crease 24, knitted sewing guide marks 26, 28, mock fashion marks 22 and any desired Jacquard color designs (not illustrated) which previously could be produced only independently from one or another by a slow producing flat machine. ***The fashion marks 22 may be knitted in conventional manner spaced apart in any desired stitch pattern, such as by Jacquard patterns***. The fashion marks 22 may be knit continuously about the periphery of the collar." Castello, 4:23-33 (emphasis added). Castello goes on to explain that "[i]n accordance with the sketch of FIG. 5, the entire collar construction 16 can be drawn and punched to a desired pattern by employing known procedures, that is, any desired collar point configuration can be designed, more or fewer fashion marks 22 can be provided,


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***more or fewer collar fold marks 24 (knitted as reversed jersey)*** can be knit, ***more or fewer stripes, various colors, patterns (not illustrated)*** can be programmed into the circular knitting machine." Castello, 5:35-44 (emphasis added); FIG. 5.

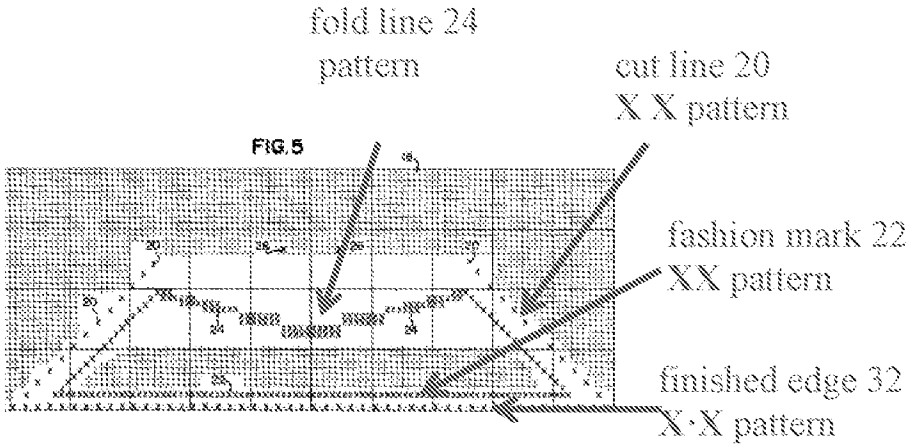
200. Castello also points out that "the top and bottom edges 30, 32 of each layer 12, 12' are finished, knitted edges which remain after separation of the layers by pulling the draw threads 14 and can serve as the top and bottom edges respectively, 30', 32' of each individual collar 16 without further sewing or other operations." Castello, 4:4-10.

201. Castello goes on to explain that the "circular neck fold line 24 of jersey stitches . . . create[s] a collar that lays naturally on the back of the neck without 'hiking' up or down to thereby enhance the beauty and utility of the collar. The fold 24 remains permanent even after washing or dry cleaning inasmuch as it is knitted directly into the fabric and thus reduces pressing costs in the finished garment." Castello, 4:53-63; *see also* 1:43-49; 1:54-68; 2:12-21; 2:42-52; 3:34-58; 4:34-5:7; 5:13-17.

202. These different stitch configurations around the collar 16 are illustrated in guide 18 (FIG. 5), wherein the X·X·X·X pattern at the bottom of the collar 16 showing the finished edge 32 and the spaced apart X X X X pattern along the sides showing the cut line 20 indicate stitch configurations in those regions that are different from each other, as well as from the fashion marks 22 and the fold


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line 24. Castello, FIG. 5 (reproduced below). Therefore, within the collar 16, there are at least four different stitch configurations forming a plurality of different textures.




203. As described in Section IX.F above, Fujiwara describes that the outline M of the garment is formed with interknitted stitches (as shown in FIGS. 3A and 3B), and that these interknitted stitches may be a jacquard, birds eye, eyelet, ***circular rib***, or interlock stitch configuration. Fujiwara, 5:57-6:7; *see also* 7:21-24. In contrast, Fujiwara states that the non-interknitted portions of each layers 18, 20 comprises a ***plain stitch configuration***. Fujiwara, 5:42-56. Because the interknitted stitches are part of the garment, and the garment also comprises areas that are only formed as part of the inner tubular layer 18 or the outer tubular layer 20, the garment has a plurality of different knitted textures formed by varying at least one of the stitch type and the yarn type. In other words, Fujiwara describes


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that the non-interknitted portions have a substantially smooth texture, and the interknitted portions have a rougher texture and/or a rib structure.

### H. First (Longitudinal), Second (Vertical), and/or Third (Forefoot) Edges and Seams

#### 1. Longitudinal Edges Joined Together to Define at least a Portion of a Void for Receiving a Foot and/or to Form a Seam that Extends along a Lower Region/Surface of an Upper

204. Nishida shows longitudinal edges 29.3 and 29.4 in FIG. 4 (reproduced below), as illustrated in the attached claim chart for claim 1 of the '288 patent. "With the embodiment according to FIG. 4, a sole part section 29.1 that extends over the entire length of the sole is provided on outside contour 31 in the approximate form of a half of sole part 29, and a sole part section 29.2 which forms the remainder of sole part 29 is provided on the outside contour 30. Both sole part sections 29.1 and 29.2 complement each other to complete sole part 29. In this case, their outside contours 29.3 and 29.4 are connected with one another, for example stitched and/or glued and/or fused or the like, preferably by a longitudinal seam." Nishida, 5:3-13; *see also* 4:22-30; 6:5-41; 6:47-54; FIGS. 3-4.

205. As part of converting the layout into a shoe upper, Nishida describes joining longitudinal edges 29.3 and 29.4 in FIG. 4 to define at least a portion of a void for receiving a foot, as well as to form a seam that extends along a lower region of an upper. "[T]he sole part is formed of sole part sections which extend



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over the entire length of an insole to be formed and which are connected to outside contours of the layout of the shoe upper; and wherein outside edge portions of the sole part sections are fastened together, by producing a lengthwise seam, to form the sole part." Nishida, 6:47-54; *see also* 4:22-30; 5:3-13; 6:5-41; FIGS. 3, 4 (reproduced below).

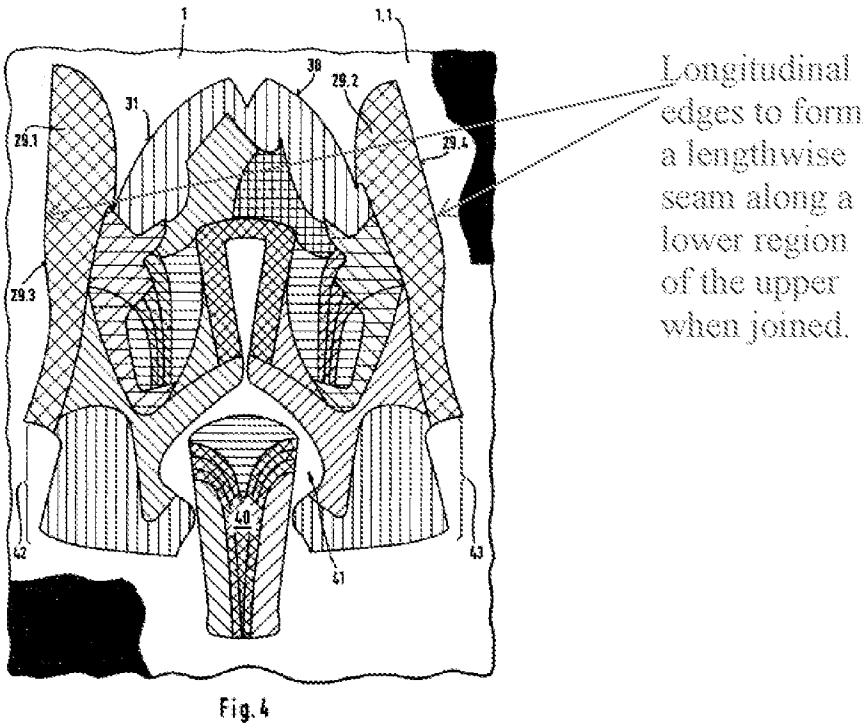
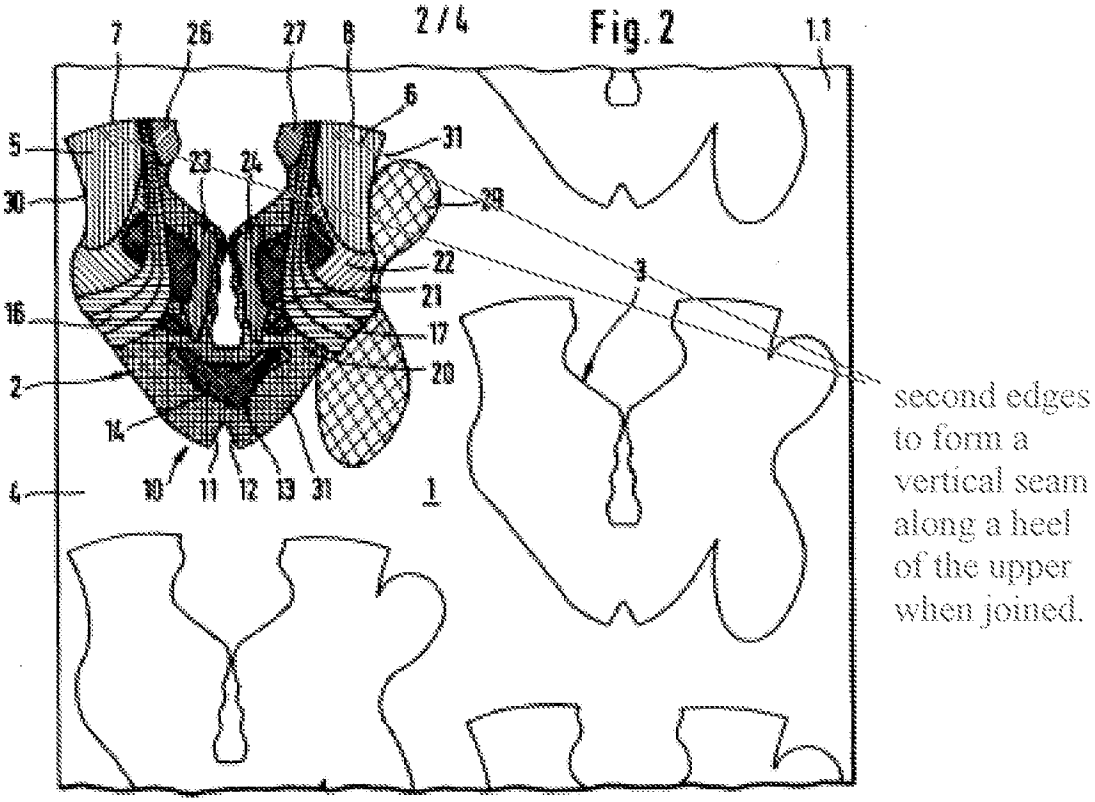


Fig. 4


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### 2. Second (Vertical) Edges Joined to Form a Seam that Extends Vertically along a Heel Region of an Upper

206. Nishida also discloses joining a second pair of edges as part of converting the layout into a shoe upper, in which the joined edges form a second seam that extends vertically along a heel region of the upper, as illustrated in the attached claim chart for claim 4 of the '288 patent. "After cutting out layout 2 from the web of material 1, the edges 7 and 8 are stitched together and a heel seam thus is formed. Then, heel counter 9, represented in FIG. 3, is applied, for example, glued and/or stitched, to adjacent areas 5 and 6." Nishida, 3:31-36; *see also* 4:9-11; 6:5-41; FIGS. 2 (reproduced below), 4.






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### 3. Third (Forefoot) Edges Joined to Form a Seam that Extends through a Forefoot Area of an Upper

207. Nishida also discloses joining a third pair of edges as part of converting the layout into a shoe upper, in which the joined edges form a third seam that extends through a forefoot area of the upper, as illustrated in the attached claim chart for claim 6 of the '288 patent. "Correspondingly, the contours of edges 11 and 12 are stitched together in the form of shoe toe 10, and a seam is formed on the shoe toe. To reduce wear, a toe cap 15, represented in FIG. 3, can be applied, especially glued and/or stitched, on the front area, adjacent to front edge 13 of toe area 14." Nishida, 3:37-42; *see also* 4:19-30; 6:5-41; FIGS. 2 (reproduced below), 4.



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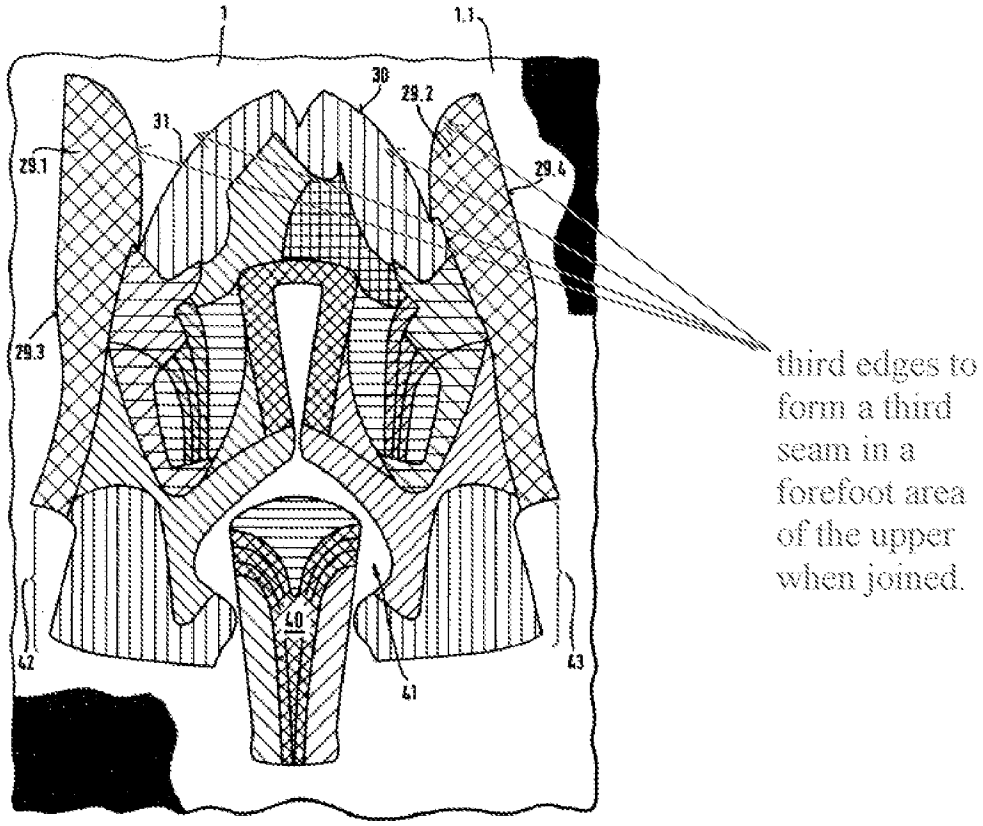


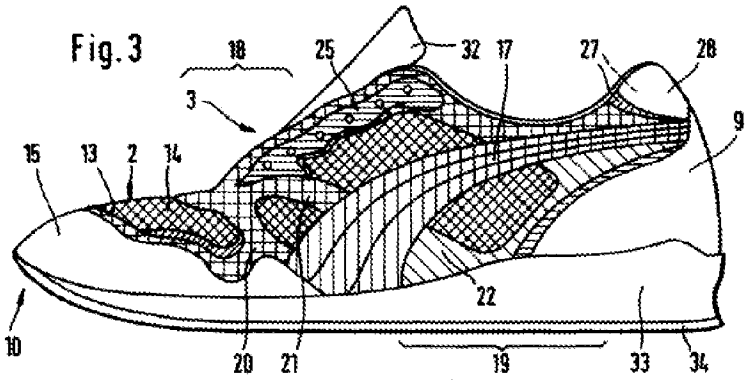

Fig. 4

## I. Combining the Textile Element Into Footwear Components

208. Nishida describes "***stitching parts of the layout*** of the cut-out unit on provided seams ***to form an upper of the shoe shaped part*** . . . ." Nishida, 6:36-38 (emphasis added). "Completed shoe upper 3 is then brought into a gluing, injection or casting mold, in which a midsole 33 and an outsole 34 are molded by known measures, as is represented in FIG. 3." Nishida, 4:43-46; *see also* Abstract; 1:40-47; 1:50-56; 1:60-2:5; 2:34-37; 2:40-45; 3:6-26; 3:46-48; 3:66-4:1; 4:13-18; 4:25-60; 5:10-26; FIG. 3 (reproduced below).



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## J. Upper Construction Using Textile Elements

### 1. Circular-Knitted Textile Element Forms at least a Portion of a Lateral Side, a Medial Side, and an Instep Region of the Upper

209. Nishida describes that the textile element can be positioned in at least a portion of a lateral side, a medial side, and an instep region of the shoe upper. Nishida, 3:15-18; 3:27-42 (describing that parts of the layout forms a heel region and a toe region); 3:59-4:9 (describing that parts of the layout form the heel region and lacing areas); 5:3-8 (describing that parts of the layout form a sole region); 3:15-4:46; FIGS. 1-5.

### 2. Circular-Knitted Textile Element is one of an Exterior Layer, an Intermediate Layer, and an Interior Layer of the Upper

210. There are at least two types of upper construction involving three layers, in which a circular-knitted textile element forms an interior layer of the upper. Both types are designed as an improvement over a well-known multilayered



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upper construction, which is described in the background sections of Shiomura and the '288 patent.

211. Regarding this well-known construction, Shiomura states that "[i]n general, a fabric is commonly used as a shoe upper of an athletic shoe. It is said that proper elasticity inherent in the shoe upper made of a fabric is advantageous in that it does not give a sense of oppression and a sense of fatigue. With respect to the shoe upper made of a fabric having such elasticity, U.S. Pat. Nos. 3,793,750 and 4,043,058 each propose a shoe upper having a multi-layer sandwich construction prepared by ***interposing a plastic foam layer, such as a polyurethane layer, between an outer fabric layer and an inner fabric layer and bonding them***." Shiomura, 1:10-20 (emphasis added).

212. Likewise, the '288 patent states that "[v]arious materials may be utilized in manufacturing the upper. The upper of an article of athletic footwear, for example, ***may be formed from multiple material layers that include an exterior layer, an intermediate layer, and an interior layer.***" '288 patent, 1:54-58 (emphasis added). "Although the materials selected for the upper vary significantly, ***textile materials often form at least a portion of the exterior layer and interior layer***." '288 patent, 2:13-15 (emphasis added). "***An intermediate layer*** of the upper may be formed from a ***lightweight polymer foam material*** that



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provides cushioning and protects the foot from objects that may contact the upper." '288 patent, 2:4-6 (emphasis added).

**a) Substitution of Circular-Knit Textile in Place of Interior Fabric Layer in Conventional Multilayered Upper Construction**

213. With respect to the first type of improvement over the well-known multilayered upper construction, the '288 patent explains that the only difference between the well-known prior art multi-layered construction and the claimed invention is the use of the textile element as the inner layer. Specifically, the '288 patent states that "***[u]pper 230 has a configuration that is similar to the configuration of the conventional upper in that various material layers are utilized. In contrast with the conventional upper***, however, ***the interior layer is formed of textile element 240***, which is manufactured through the process discussed above. That is, ***textile element 240 is a single element of textile that forms the interior layer of upper 230***." '288 patent, 10:50-56 (emphasis added).

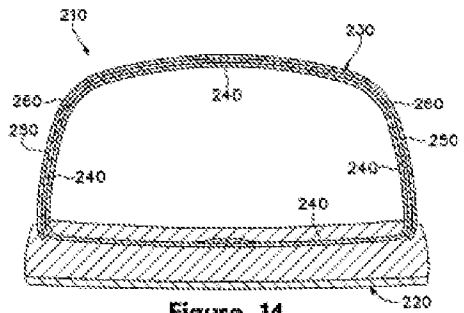


Figure 14


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214. The '288 patent describes that the benefit of this modification to the well-known multilayered upper construction is so that "textile element 240 includes few seams that may contact the foot. In addition, the stitches utilized at various locations of textile element 240 may modify the texture of the interior surface of upper 230, thereby limiting the degree of slip that occurs between the foot and upper 230 or enhancing the air-permeability of upper 230 in specific locations." '288 patent, 10:56-63 (emphasis added).

215. It would have been obvious to the skilled person at least as of March 3, 2004, that the interior (or the exterior) fabric layer of a conventional multi-layered upper construction could be replaced with a circular-knitted textile, such as the one collectively described in Nishida and Castello (Nishida, Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2; Castello, Abstract; 1:35-53; 1:47-68; 3:34-39; 3:59-4:4; 4:23-38; 5:18- FIGS. 1, 2A), as this is nothing more than combining "prior art elements according to known methods to yield predictable results" and/or the "[u]se of known technique[s] to improve similar devices (methods, or products) in the same way." *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417-22 (2007); MPEP § 2143 (A, C). This is particularly the case where "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. at 421. In this configuration, the upper comprises an exterior fabric layer, an intermediate plastic

foam layer, and an interior circular-knitted textile layer collectively described by Nishida and Castello, wherein the circular-knitted textile of Nishida and Castello forms an interior layer of the upper.

**b) Replacement of Conventional Multilayered Upper Construction with Spacer Fabric Comprising Multiple Circular-Knit Layers**

216. With respect to the second type of improvement over the well-known multilayered upper construction, Shiomura explains that the use of the "plastic foam layer interposed therein is not necessarily satisfactory in air permeability. Therefore, this causes problems such that the inside of the shoe becomes stuffy and hot because of abnormal temperature increase attributable to the sweating and generation of heat from feet during exercise, which brings about a discomfort. Further, although the above-mentioned resin foam layer has elasticity, it is large in resistance to the movement between the outer and inner fabric layers, because it is bonded to each of the outer and inner fabric layers with an adhesive, which leads to a large resistance of the shoe upper per se to bending. This inhibited the effect of alleviating a sense of oppression and a sense of fatigue for the feet." Shiomura, 1:21-35.

217. In view of these drawbacks associated with both the type of intermediate layer used, as well as the use of an adhesive to bond the layers together, Shiomura instead proposed to replace all three layers with a new spacer



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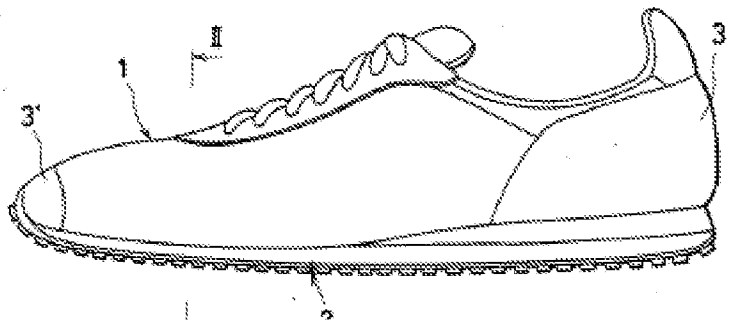
fabric comprising three knitted layers. Specifically, Shiomura describes that "[a]s shown in FIGS. 1 and 2, the athletic shoe of the present invention comprises a shoe upper 1 and a rubber sole 2 attached to the shoe upper 1." Shiomura, 2:20-22; FIG. 1 (reproduced below). "FIG. 2 is a cross-sectional view taken along the line II--II of FIG. 1." Shiomura, 2:8-9; FIG. 2 (reproduced below).

218. "As shown in FIGS. 3 and 4, the shoe upper 1 comprises an outer knit fabric layer 4, an inner knit fabric layer 5 provided parallel to the outer knit fabric layer 4 through a space 6, and a number of crossing threads 7 which cross the space 6. The outer knit fabric layer 4 is knitted from a yarn 41 while the inner knit fabric layer 5 is knitted from a yarn 42. The crossing threads 7 are interknitted to be bound into the outer and inner knit fabric layers 4, 5." Shiomura, 2:27-35; FIGS. 3-4 (reproduced below).



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FIG.1




outer knit fabric layer 4 forms an exterior surface of the shoe upper 1.

FIG.2

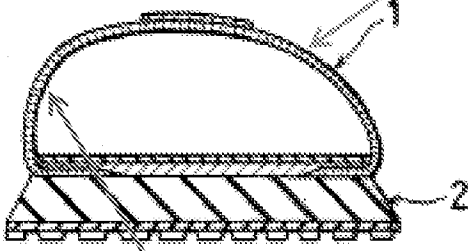
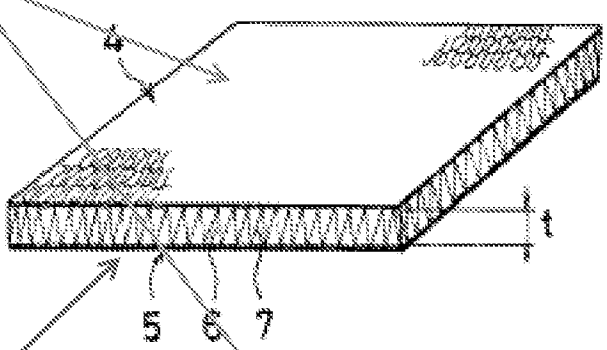
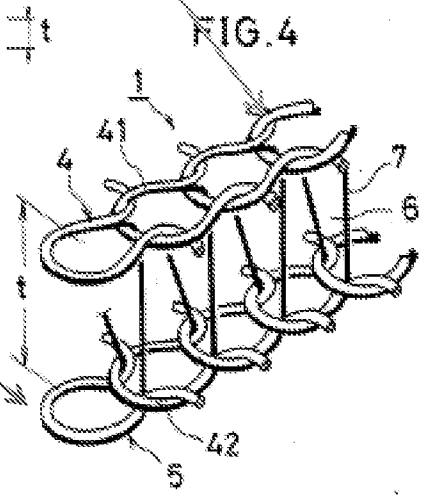



FIG.3




inner knit fabric layer 5 forms an interior surface of the shoe upper 1.

FIG.4






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219. Shiomura additionally explains that "[a]lthough the yarns 41, 42 used for the outer and inner knit fabric layers may be any of synthetic fibers such as polyester and nylon and natural fibers such as cotton and hemp and are not particularly limited, ***the yarn 41 of the outer knit fabric layer is preferably a filament yarn or a spun yarn made of a synthetic fiber having excellent wear resistance*** while the ***yarn 42 of the inner knit fabric layer is preferably a spun yarn made of a natural fiber having excellent moisture absorptivity***." Shiomura, 2:45-54. Because the outer knit fabric layer 4 forms an exterior surface of the upper 1, Shiomura suggests that this layer should be formed of "a synthetic fiber having excellent wear resistance." Conversely, because the inner knit fabric layer 5 forms an interior surface of the upper 1 adjacent the wearer's foot when worn, Shiomura suggests that this layer should be formed of "a natural fiber having excellent moisture absorptivity" so as to wick away sweat and heat from feet during exercise. Thus, Shiomura describes an upper formed of three knitted layers: an inner knitted fabric layer 5, an intermediate knitted spacer layer 6, and an outer knitted fabric layer 4.

220. Like Shiomura, Shepherd describes that "[r]eferring to FIGS. 1 and 2 of the accompanying drawings, the weft knitted flat jacquard spacer fabric 10 includes a weft knitted jacquard pattern front layer 11 and a weft knitted plain back


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layer 12 disposed parallel to one another at a predetermined spacing and coupled together by a network of spacer yarns 13 which are preferably firmer and more resilient than the yarns of the face and back layers." Shepherd, 5:12-18, FIG. 2 (reproduced below).

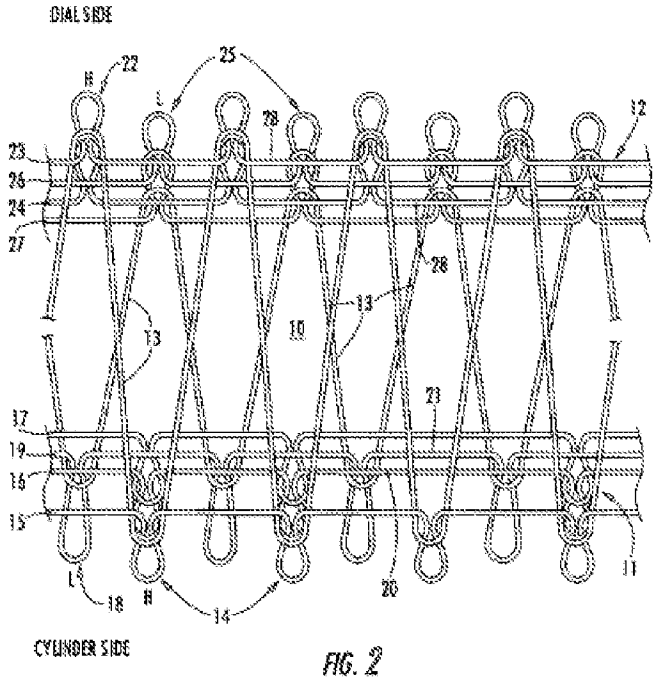



FIG. 2

221. Shepherd goes on to explain how the knitted layers (like those described in Shiomura) may be knitted with a circular knitting machine. "The jacquard pattern weft knitted spacer fabrics illustrated in the accompanying drawings may be knitted on a double jersey circular knitting machine that is described in the aforementioned EP-A-0 591 987, with that machine operating in an interlock gating mode with the cylinder and dial needles reciprocating between welt, tuck and knit positions respectively in substantially common planes. The


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cylinder needle selection is controlled by an electronic selection mechanism in conjunction with cylinder cams, while the dial needle selection is controlled by dual cam tracks respectively controlling the low and high butt dial needles." Shepherd, 4:62-5:5; FIG. 1 (reproduced below). In this configuration, Shiomura and Shepherd collectively describe an upper formed of three circular-knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular-knitted fabric layer 4, wherein the inner circular-knitted fabric layer 5 forms an interior layer of the upper 1, the intermediate circular-knitted spacer layer 6 forms an intermediate layer of the upper 1, and the outer circular-knitted fabric layer 4 forms an exterior layer of the upper 1.



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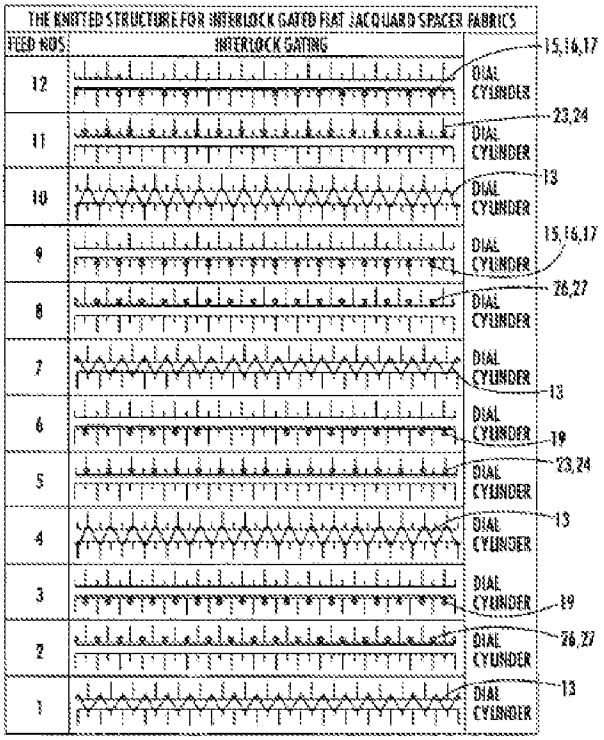



FIG. 1

### 3. Upper includes an Exterior Layer, an Intermediate Layer, and an Interior Layer, and the Circular-Knitted Textile Element Forms at least a Portion of the Interior Layer

222. First, as described in Section IX.J.2.a) above, both the '288 patent and Shiomura describe a well-known upper construction in which a plastic foam intermediate layer is sandwiched between an interior fabric layer and an exterior fabric layer. '288 patent, 1:54-58: 2:4-6; 2:13-15; Shiomura, 1:10-20. The '288 patent goes on to describe that the only difference between the well-known prior art multi-layered construction and the claimed invention is the use of the textile element as the inner layer. '288 patent, 10:50-63.



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223. In view of this well-known prior art construction described in the '288 patent and in Shiomura, it would have been obvious to the skilled person at least as of March 3, 2004, that the interior fabric layer of a conventional multi-layered upper construction could be replaced with a circular-knitted textile, such as the one collectively described in Nishida and Castello. Nishida, Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2; Castello, Abstract; 1:35-53; 1:47-68; 3:34-39; 3:59-4:4; 4:23-38; 5:18- FIGS. 1, 2A.

224. In this configuration, the upper comprises an exterior fabric layer, an intermediate plastic foam layer, and an interior circular-knitted textile layer collectively described by Nishida and Castello, wherein the circular-knitted textile of Nishida and Castello forms at least a portion of the interior layer of the upper.

225. Second, as described in Section IX.J.2.b) above, Shiomura and Shepherd collectively describe an upper formed of three knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular- knitted fabric layer 4. Shiomura, 2:8-9; 2:20-22; 2:27-35; 2:45-54; FIGS. 1-4; Shepherd, 4:62-5:5; 5:12-18, FIGS. 1-2. In this configuration, Shiomura and Shepherd collectively describe an upper formed of three circular-knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular-knitted fabric layer 4, wherein the



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inner circular-knitted fabric layer 5 forms at least a portion of the interior layer of the upper 1.

#### 4. The Circular-Knitted Textile Element Forms an Interior Surface of the Upper

226. First, as described in Section IX.J.2.a) above, both the '288 patent and Shiomura describe a well-known upper construction in which a plastic foam intermediate layer is sandwiched between an interior fabric layer and an exterior fabric layer. '288 patent, 1:54-58: 2:4-6; 2:13-15; Shiomura, 1:10-20. The '288 patent goes on to describe that the only difference between the well-known prior art multi-layered construction and the claimed invention is the use of the textile element as the inner layer. '288 patent, 10:50-63.

227. In view of this well-known prior art construction described in the '288 patent and in Shiomura, it would have been obvious to the skilled person at least as of March 3, 2004, that the interior fabric layer of a conventional multi-layered upper construction could be replaced with a circular-knitted textile, such as the one collectively described in Nishida and Castello. Nishida, Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2; Castello, Abstract; 1:35-53; 1:47-68; 3:34-39; 3:59-4:4; 4:23-38; 5:18- FIGS. 1, 2A. In this configuration, the upper comprises an exterior fabric layer, an intermediate plastic foam layer, and an interior circular-knitted textile layer



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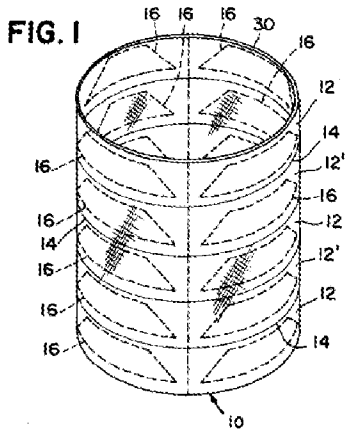
collectively described by Nishida and Castello, wherein the circular-knitted textile of Nishida and Castello forms an interior layer of the upper.

228. Second, as described in Section IX.J.2.b) above, Shiomura and Shepherd collectively describe an upper formed of three knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular- knitted fabric layer 4. Shiomura, 2:8-9; 2:20-22; 2:27-35; 2:45-54; FIGS. 1-4; Shepherd, 4:62-5:5; 5:12-18, FIGS. 1-2. In this configuration, Shiomura and Shepherd collectively describe an upper formed of three circular-knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular-knitted fabric layer 4, wherein the inner circular-knitted fabric layer 5 forms an interior layer of the upper 1.

229. Third, Castello describes that the collars are knitted as single layers so that the same layer forms the interior and exterior surface. *See* Castello, FIG. 1 (reproduced below, and showing that the collars are visible in the layer from both the outside and inside views).



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230. It would have been obvious to the skilled person at least as of March 3, 2004, that modifying Nishida's upper to incorporate the circular-knitted textile element of Castello would result in an upper with an interior surface formed by Castello's circular-knitted textile.

**5. The Circular-Knitted Textile Element Forms an Interior Surface of the Upper, and at least one Additional Textile Element forms an Exterior Surface of the Footwear**

231. First, as described in Section IX.J.2.a) above, both the '288 patent and Shiomura describe a well-known upper construction in which a plastic foam intermediate layer is sandwiched between an interior fabric layer and an exterior fabric layer. '288 patent, 1:54-58: 2:4-6; 2:13-15; Shiomura, 1:10-20. The '288 patent goes on to describe that the only difference between the well-known prior art multi-layered construction and the claimed invention is the use of the textile element as the inner layer. '288 patent, 10:50-63.



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232. In view of this well-known prior art construction described in the '288 patent and in Shiomura, it would have been obvious to the skilled person at least as of March 3, 2004, that the interior fabric layer of a conventional multi-layered upper construction could be replaced with a circular-knitted textile, such as the one collectively described in Nishida and Castello. Nishida, Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-58; 3:59-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2; Castello, Abstract; 1:35-53; 1:47-68; 3:34-39; 3:59-4:4; 4:23-38; 5:18- FIGS. 1, 2A. In this configuration, the upper comprises an exterior fabric layer, an intermediate plastic foam layer, and an interior circular-knitted textile layer collectively described by Nishida and Castello, wherein the circular-knitted textile of Nishida and Castello forms an interior surface of the upper, and the exterior fabric layer is an additional textile element that forms an exterior surface of the footwear.

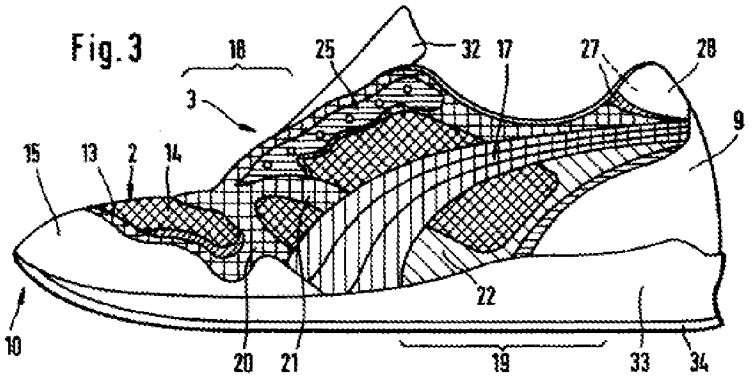
233. Second, as described in Section IX.J.2.b) above, Shiomura and Shepherd collectively describe an upper formed of three knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-knitted spacer layer 6, and an outer circular- knitted fabric layer 4. Shiomura, 2:8-9; 2:20-22; 2:27-35; 2:45-54; FIGS. 1-4; Shepherd, 4:62-5:5; 5:12-18, FIGS. 1-2. In this configuration, Shiomura and Shepherd collectively describe an upper formed of three circular-knitted layers: an inner circular-knitted fabric layer 5, an intermediate circular-


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knitted spacer layer 6, and an outer circular-knitted fabric layer 4, wherein the inner circular-knitted fabric layer 5 forms an interior layer of the upper 1, and the outer circular-knitted fabric layer 4 is an additional textile element that forms an exterior surface of the footwear.

### 6. Circular-Knitted Textile Element Forms at least a Portion of both an Interior Surface and an Exterior Surface of the Upper

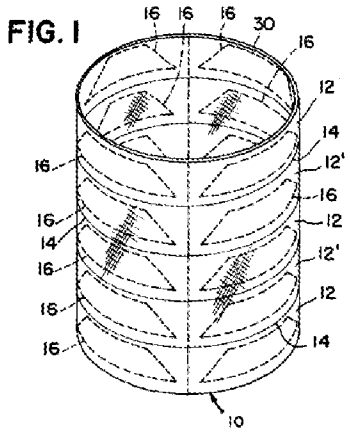
234. First, Nishida describes that additional elements may be attached to an exterior surface of the layouts 2 and therefore form a portion of the exterior surface of the upper, thereby leaving portions of the layouts 2 uncovered so that the uncovered portions (such as areas 20, 21, 22, and toe area 14) form at least a portion of the exterior surface of the upper. Nishida, Abstract; 2:11-22; 2:37-39; 2:45-47; 3:6-15; 3:29-36; 3:39-42; 3:59-4:1; 4:9-11; FIG. 3.




235. As described in Section IX.J.4 above, Castello describes that the collars are knitted as single layers so that the same layer forms the interior and


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exterior surface. *See* Castello, FIG. 1 (reproduced below, and showing that the collars are visible in the layer from both the outside and inside views).



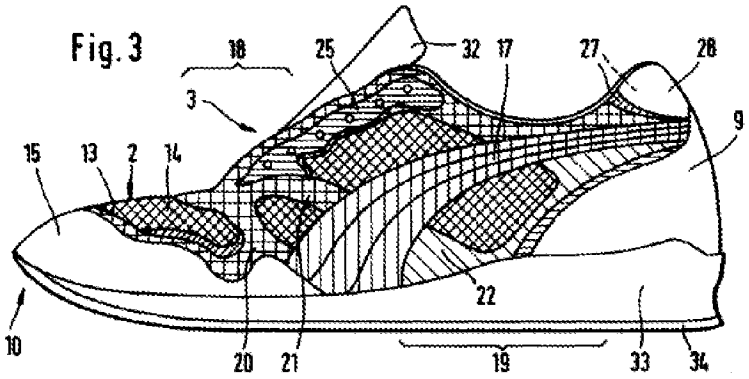

236. It would have been obvious to the skilled person at least as of March 3, 2004, that modifying Nishida's upper to incorporate the circular-knitted textile element of Castello would result in an upper having at least a portion of an interior surface formed by Castello's circular-knitted textile and at least a portion of an exterior surface formed by Castello's circular-knitted textile.

### 7. Additional Element Secured to the Exterior Surface (Forefoot and/or Heel) of the Circular-Knitted Textile Element and Forms at least a Portion of the Exterior Surface

237. Nishida describes that additional elements such as toe caps, heel counters, and/or lacing strips may be secured to the exterior surface of the upper and may form a portion of the exterior surface of the upper. The toe caps may be secured to a forefoot area of the upper, and the heel counters may be secured to a


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heel area of the upper. Nishida, Abstract; 2:11-22; 2:37-39; 2:45-47; 3:6-15; 3:29-36; 3:39-42; 3:59-4:1; 4:9-11; FIG. 3.




## K. Aperture(s) Formed in the Textile Element

238. The '288 patent describes apertures in one of three ways:

(1) "[T]he u-shaped area becomes ***an aperture*** in textile element 40 and effectively forms ankle opening 36" ('288 patent, 6:25-26);

(2) "The air-permeability of textile element 40" may also vary in the different areas. Third texture 48" is formed to include ***a plurality of apertures*** that extend through textile element 40". The ***apertures*** may be formed by omitting stitches at specific locations during the wide-tube circular knitting process, and the ***apertures*** facilitate the transfer of air between the void within upper 20 and the area outside of upper 20" ('288 patent, 9:47-54); and



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(3) "Lace 131 extends through ***a plurality of apertures*** formed in textile element 140. The ***apertures*** may be formed by omitting stitches at specific locations." ('288 patent, 10:16-19).

239. With respect to the first type of "ankle opening" aperture, Nishida discloses that the u-shaped area in the layout 2 forms an ankle opening 36 when formed into the shoe upper. *See* Nishida, FIGS. 1-5.

240. With respect to the second type of "air-permeability" apertures, Nishida discloses that the "type of production can, additionally, insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a ***net-like woven or knitted structure***." Nishida, 3:49-52 (emphasis added); *see also* 3:43-52; 3:66-4:5; 6:25-31.

241. With respect to the third type of "lace hole" apertures, Nishida describes lacing strips that may be layered over the net-like structure to reinforce that structure and holes formed in the lacing strips may be aligned with the existing holes in the net-like structure. Nishida, 4:1-5. Thus, Nishida explains that "the lacing areas 23 and 24 *can be made dimensionally stable* in corresponding manners, especially *if, for example, no additional trimmings, such as the lacing strips 25, shown in FIG. 3, are to be applied*." Nishida, 4:1-5 (emphasis added). Nishida thus recognizes that (a) the lacing strips are optional and may not be applied; (b) that the net-like structure may itself then be used or (c) if no lacing



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strips are applied and the net-like structure is used, then the lacing areas can be further stabilized via an embroidery. Nishida, 4:31-38. However, if the additional lacing strips and embroidery are not added, the textile element still includes the net-like structure in the lacing area.

242. Furthermore, Fujiwara describes forming apertures by omitting stitches at specific locations, such as is described by the '288 patent as the mechanism for forming the "air permeability" and the "lace hole" apertures. For example, Fujiwara suggests that the interknitted stitches that form the outline M of the textile element may be formed with a birds eye or eyelet stitching. Fujiwara, 5:65-6:11; 6:43-62; 7:21-24. Specifically, Fujiwara states that "FIGS. 3A and 3B illustrate schematically in a course direction knitting diagrams at yarn feeders in groups A and B, respectively at the stitched part of the fabric. At the yarn feeder in the group A, the yarn 14 is subjected to a knitting by both of the dial and cylinder needles 10 and 12, so that the inner and outer layers 18 and 20 are integrated. In the example shown in FIG. 3A, ***the integrated fabric*** is of a so-called rib stitch in a rib stitch arrangement between the dial and cylinder needles 10 and 12. However, in a jacquard arrangement (not shown) of the dial and cylinder needles 10 and 12, ***it is possible that another desired stitching, such as birds eye, eyelet,*** circular rib or interlock ***may be employed***. In the similar way, at the yarn feeder in the group B in FIG. 3B, the yarn 16 is subjected to a knitting by both of the dial and cylinder


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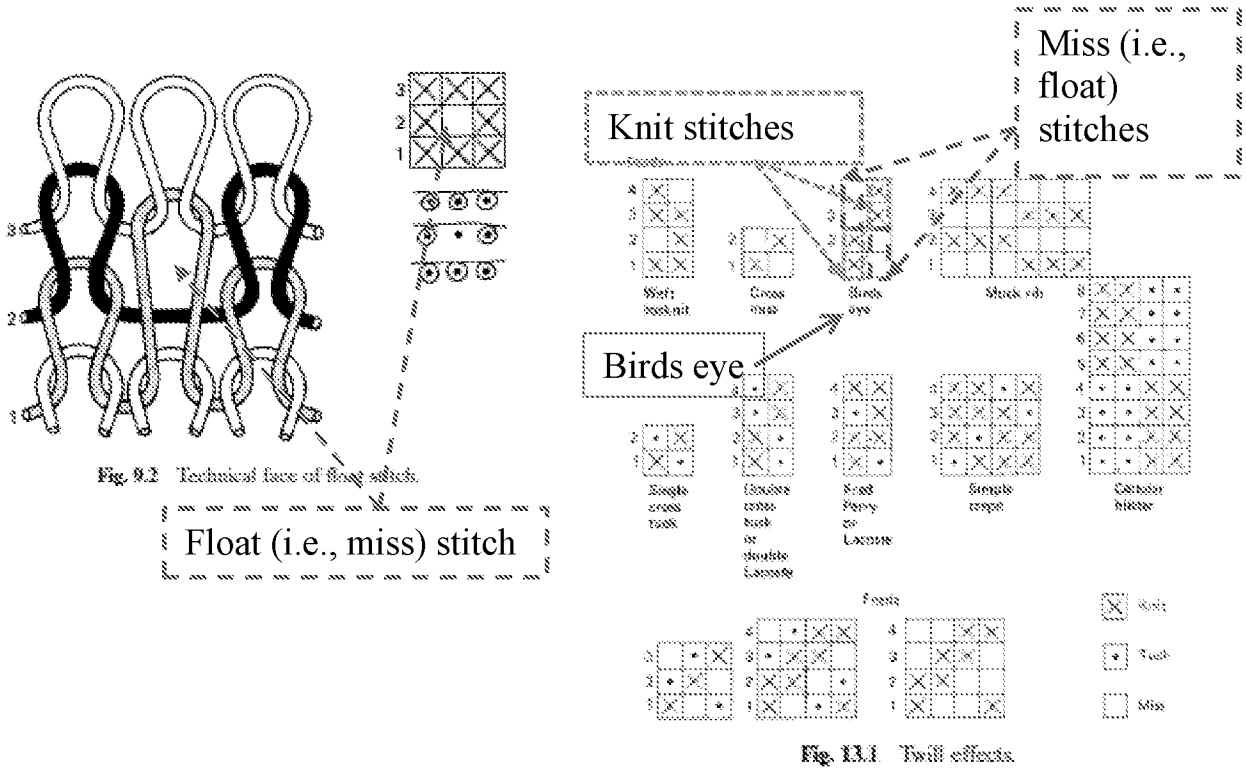
needles 10 and 12, so that the inner and outer layers 18 and 20 are integrated. Similarly, ***any of stitching such as bird's eye, eyelet,*** circular rib or interlock ***may also be employed***." Fujiwara, 5:57-6:7 (emphasis added); FIGS. 3A, 3B.

243. A skilled person at least as of March 3, 2004 would have understood that a birds eye stitch configuration forms an aperture in the knitted textile by omitting stitches. Spencer provides extrinsic evidence to support this understanding. According to Spencer, a birds eye stitch is a combination of knit and miss stitches. Spencer, p. 146; FIG. 13.1 (reproduced below). Spencer explains that "a ***miss stitch*** would always be ***floating freely on the technical back***." Spencer, p. 94 (emphasis added). Likewise, Spencer explains that the same definition applies to a float stitch: "[i]n FIG. 9.2, the ***float stitch*** shows the ***missed yarn floating freely on the*** reverse side of the held loop. (This is the ***technical back*** of single-jersey structures but is the inside of rib and interlock structures.)" Spencer, p. 92 (emphasis added); FIG. 9.2 (reproduced below). In short, the terms "miss stitch" and "float stitch" are interchangeable.

244. Spencer goes on to explain that a float stitch "is produced when a needle (M) holding its old loop fails to receive the new yarn that passes, as a float loop, to the back of the needle and to the reverse side of the resultant stitch, joining together the two nearest needle loops knitted from it." Spencer, p. 92. As a result, the float (or miss) stitch forms an aperture in the textile fabric in each specific


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location where "the missed yarn float[s] freely on the reverse side of the held loop." Spencer, p. 92. In other words, the skilled person would have understood Fujiwara's suggestion of using a birds eye stitch to form at least a portion of the interknitted outline M would produce apertures by omitting stitches in specific locations within the knitted textile element.




## L. The Skilled Person Would Have Been Motivated to Combine Nishida, Castello, Fujiwara, Shiomura, and Shepherd.

245. Nishida's explicit statements that a "method of producing knitted textiles for shoe uppers can be performed with any "conventional textile process . . ." such as "weaving and/or knitting and/or embroidering" (Nishida, 3:6-9) and that "the use of ***program-controlled***, particularly ***computer-controlled***, production


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devices is advantageous, so that style, color, design, size or the like can be varied at will" (Nishida, 4:12-18) would have suggested to a person of ordinary skill in the relevant art at least as of March 3, 2004 that Nishida's method of making shoes with uppers formed of textile fabrics could be performed with any knitting machine having computerized or programmable single needle selection capabilities, as those advanced capabilities provide the ability to reduce the quality and quantity of cutting waste between layouts.

246. With this understanding, the skilled person would have been motivated to form articles of footwear as described in Nishida using Castello's program-controlled circular knitting machinery and resulting textile element, as well as Fujiwara's circular knitting machinery with "computer controlled pattern control mechanism" and resulting textile element, as such a design choice would have been predictable and well known to a person with ordinary skill in the art. This is particularly the case where "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). Castello, Abstract; 1:35-53; 1:47-64; 3:34-39; 4:23-38; 5:18-25; Fujiwara, 1:58-3:18; 4:12-21; 4:66-5:7; FIGS. 1, 4, 6, 7.

247. Moreover, the skilled person would have found Nishida's process of producing textile elements to be analogous art to Castello's and Fujiwara's processes, as all three processes are directed to methods of simultaneously forming


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textile elements within a surrounding textile structure using programmable and/or computerized single needle selection technology, removing the textile elements, and incorporating the textile elements into a wearable item. Nishida, Abstract; 1:10-18; 1:40-2:37; 2:40-47; 3:6-52; 3:59-4:5; 4:12-60; 5:3-26; 5:63-6:2; 6:36-38; FIGS. 1-3; Castello, Abstract; 1:35-2:21; 2:42-52; 3:34-5:44; 6:35-58; 7:1-9; 7:23-25; 8:17-19; FIGS. 1, 2A, 2-5; Fujiwara, 1:58-3:18; 3:45-48; 3:59-5:11; 5:42-6:62; 7:25-37; FIGS. 1, 4, 6, 7.

248. Additionally, Castello, Fujiwara, and Nishida are directed to reducing costs associated with producing textile elements using the latest advances in knitting technology. Castello states that "[t]he present invention resides in a novel method of fabricating knitted collars on circular knitting machines which results in a far greater production capability at resulting cost savings over that presently possible on flat machines." Castello, 1:39-43.

249. Fujiwara similarly states that "according to the method invention, an article or garment can be obtained from a fabric without or substantially without necessitating any sewing process, which otherwise is essential, thereby reducing a production cost of an article or garment from a fabric." Fujiwara, 3:13-18. "[S]ewing is a bottleneck from the view point of increase in an production efficiency as well as of decrease in a production cost" such that "there has



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heretofore been a strong requirement as to a development in a garment making by which any sewing is not necessary." Fujiwara, 1:30-35.

250. Nishida likewise states that a "process is used by which such shoe uppers can be produced in a timesaving and efficient manner" with "only a small number of individual parts that have to be produced separately and applied to the upper later" over conventional methods that generate expensive cutting waste. Nishida, Abstract, 2:45-47. "It is of further advantage in the process according to the present invention that the individual patterns or partial patterns already can be produced ***directly*** in the production of the web of material in the desired shoe size, by which the cutting waste can be still further limited, since the individual patterns or partial patterns in the provided size can directly adjoin one another." Nishida, 2:27-33 (emphasis added). "With the use of program-controlled web of material production devices, after a one-time creation of the program, the size of the layout corresponding to the shoe size, the woven or knitted type of individual areas or contours, the type of fiber or yarn and/or the color can be selected almost at will." Nishida, 2:40-45. As a result, the person of ordinary skill in the relevant art at least as of March 3, 2004 would have found that Castello, Nishida, and Fujiwara are directed to solving a similar problem: expensive and time consuming production of textile components.

251. The skilled person would also have been motivated to look to



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Shiomura and Shepherd for suggestions regarding knitted textile structures that meet the performance characteristics for athletic shoes. The multilayered knitted spacer fabric described in Shiomura was known to provide a "shoe upper [with] a combination of suitable elasticity with high air permeability" for use with "an athletic shoe suitable for use primarily in marathon, jogging, tennis, volleyball and like sports." Shiomura, 1:6-9; 1:38-41. Shepherd describes how to make this multilayered knitted spacer fabric using computer-controlled circular knitting machinery. Shepherd, 4:53-7:47.

252. In view of the substantial similarities between the methods described in Castello, Fujiwara, and Nishida, and the specifics regarding the multilayered circular-knitted spacer fabric described in Shiomura and Shepherd, a person of ordinary skill in the relevant art would certainly have been motivated to modify Nishida's method to include the additional features described by Castelo, Fujiwara, Shiomura, and Shepherd to produce a textile element for use in a shoe upper, as well as to produce a shoe incorporating such a textile element.

253. The combination of Nishida, Castello, Fujiwara, Shiomura, and Shepherd is nothing more than combining "prior art elements according to known methods to yield predictable results" and/or the "[u]se of known technique[s] to improve similar devices (methods, or products) in the same way." *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417-22 (2007); MPEP § 2143 (A, C). This is


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particularly the case where "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. at 421.

254. It is therefore my opinion that Nishida, Castello, Fujiwara, Shiomura, and Shepherd together teach and render obvious claims 1-38 of the '288 patent.

## X. SUMMARY

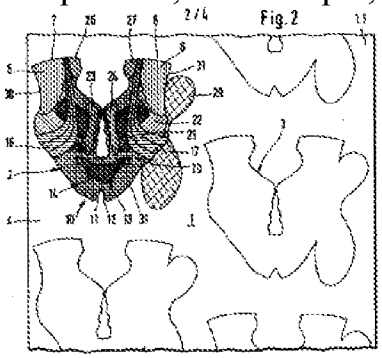
255. I note that my analysis is continuing and that I may modify or supplement my conclusions as I receive additional information. I declare under penalty of perjury that the foregoing Declaration is true and correct.

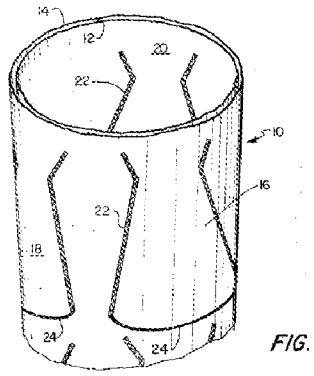
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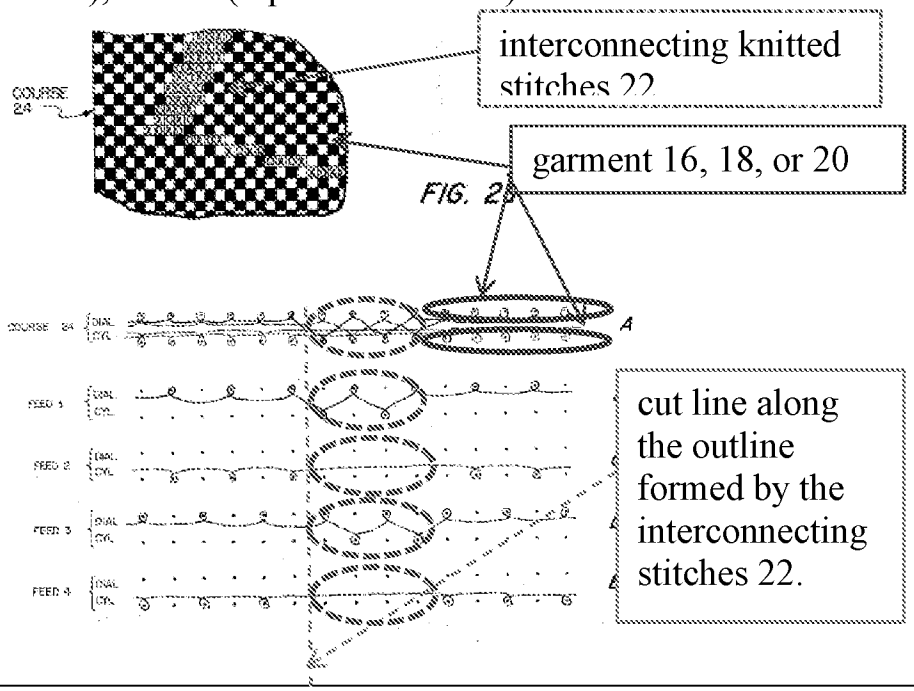
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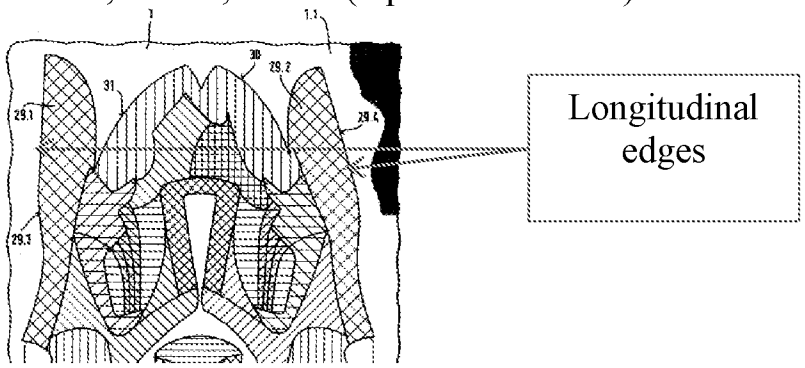


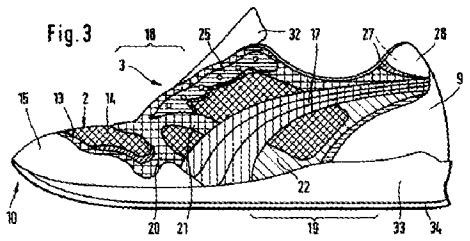
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| CLAIM | GROUND 1 |
|---|---|
| [1A] An article of footwear comprising: | "This invention relates to a process for the production of a shoe shaped part . . . ." **Nishida**, 1:10-11; *see also* Abstract; 1:65-2:10; 2:26-33; 3:27-42; 4:19-30; 4:43-46; 5:3-26; 5:63-6:2.<br><br>"Still another object is to provide a method for producing a plurality of garments formed about the circumference of a knitted tube." **Reed**, 2:29-31. "The present invention may be used to form all types of garments worn by men, women and children . . . ." **Reed**, 5:56-57. |
| [1B] an upper incorporating a circular-knitted textile element having a plurality of knit constructions, | **Circular-knitted textile element:**<br>"In FIGS. 1 and 2, a web of material is identified by 1, and is produced by a conventional textile process, for example, by weaving and/or knitting and/or embroidering." **Nishida**, 3:6-9; *see also* Abstract; 1:10-18; 1:47-2:5; 2:11-25; 2:40-47; 3:6-26; 3:43-52; 3:59-4:5; 4:12-18; 4:47-60; 5:64-65; FIGS. 1, 2 (reproduced at right).<br>  <br>"As can be seen, ***any number of layouts 2 in the most varied configurations and/or designs as well as of different sizes can be produced on a single web of material 1***. For this purpose, above all, ***the use of program-controlled, particularly computer-controlled, production devices is advantageous***, so that style, color, design, size or the like can be varied at will." **Nishida**, 4:12-18 (emphasis added); *see also* Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2.<br><br>"Another object of the present invention is to provide a method of reducing the cost of manufacturing of garments by using the versatility of a ***computerized electronic knitting machine***." **Reed**, 2:22-25 (emphasis added); *see also* 1:58-59; FIGS. 1-6.<br>"The present invention uses an electronic circular double knitting |

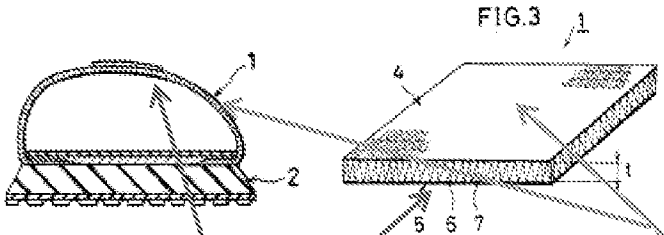
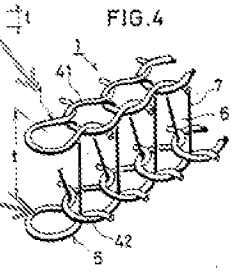
| CLAIM | GROUND 1 |
|---|---|
| | machine programmed to ***simultaneously knit two concentric tubes***, one on the dial set of needles and a second on the cylinder set of needles and additionally programmed to interconnect the two concentric tubes by a knit interlock stitch ***to form the outline of the design of a garment***." **Reed**, 1:58-64 (emphasis added); FIG. 1 (reproduced at right); *see also* 3:5-7; 4:68-5:2.  FIG. 1<br><br>**<u>Plurality of Knit Constructions:</u>**<br>"Finally, in the embodiment according to FIGS. 1 and 2, with layout 2 on the web of material 1, ***areas 26 and 27 are produced in a configuration***, color or style ***that is different from the other areas***." **Nishida**, 4:6-9 (emphasis added); *see also* Abstract; 1:65-69; 2:40-45; 3:15-26; 3:43-48; 4:12-28; 4:48-55; 5:56-6:2.<br><br>"[T]he layouts of the shoe upper and sole parts are ***produced by modifying the overall construction of the web of material*** in the locations of the layouts relative to that in portions thereof where the layouts of the shoe upper and the sole parts are not provided, ***using*** one of a ***different*** weaving and ***knitting type*** for the layouts of the shoe upper than is used for producing the sole parts, said weaving and knitting types being matched to differing requirements for materials of the shoe upper and sole part of a shoe in relation to properties thereof including at least one of the properties of absorptivity, ***air permeability***, ***softness***, ***extensibility***, wear resistance and appearance." **Nishida**, 6:1-31 (emphasis added); *see also* 5:63-6:2.<br><br>"The knitted structure of course 24 of FIG. 2 formed by program 1 is illustrated in FIGS. 3A-3E. The inner knitting fabric formed on the dial needles are shown in FIG. 3A above the outer knitted fabric formed on the cylinder needles. Feed 1 (FIG. 3B) knits on dial needles 2, 4, 6, 8, 12, 14, etc. to form alternate stitches on the inner tube with feed 3 (FIG. 3D) on dial needles 1, 3, 5, 7, 9, |

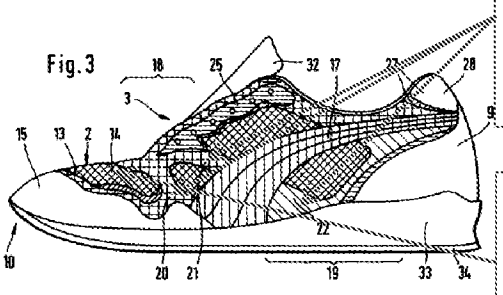
| CLAIM | GROUND 1 |
|---|---|
| | 11, 13, 15, etc. stitches therebetween. The outer fabric is formed basically from an alternation of the cylinder needles using feeds 2 and 4 (FIGS. 3C and 3E, respectively). ***Interknitted stitches (shown as X's and O's in FIG. 2) are formed by feeds 1 and 3 on needles 7 and 9 and 8 and 10, respectively, as shown in FIGS. 3B and 3D. As can be seen in FIG. 3A, feeds 1 and 3 form part of the outer fabric at interconnecting stitches 7, 8, 9, and 10 of course 24 of FIG. 2***." **Reed**, 5:3-18 (emphasis added); FIGS. 3A-3E. "[O]nce the knitted structure 10 is removed from the knitting machine, the individual garments may be severed by cutting along the outline formed by the interconnecting stitches represented by the X's and O's." **Reed**, 5:67-6:3; *see also* 3:61-4:49; 4:61-64; FIGS. 2, 2A (reproduced below), 3A-3E (reproduced below).<br>  <br> |
| [1C] the circular-knitted textile element being removed from a circular-knitted textile structure, and | "This invention relates to a process for the production of a shoe shaped part using a web of material with a plurality of patterns in the form of the layout of a shoe upper, ***cutting out these layouts from the web of material*** and stitching the parts of the shoe upper to a top part, and fastening the related part of the sole to the edge area of the cut-open outside edge of the assigned layout and to a shoe shaped part produced according to this process." |

| CLAIM | GROUND 1 |
|---|---|
| | **Nishida**, 1:10-18 (emphasis added); *see also* Abstract; 1:65-2:10; 2:20-25; 2:30-33; 3:31-35; 4:31-43.<br><br>"As indicated previously, once the knitted structure 10 is removed from the knitting machine, ***the individual garments may be severed by cutting along the outline*** formed by the interconnecting stitches represented by the X's and O's. If desired, the ***fabric may be cut with a hot knife*** so that the edges are fused together to add additional strength to the seams." **Reed**, 5:67-6:5 (emphasis added); *see also* Abstract; 2:14-16; 3:12-19; 5:67-6:5; FIGS. 2, 4-6. |
| [1D] further having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and | "With the embodiment according to FIG. 4, a sole part section 29.1 that extends over the entire length of the sole is provided on outside contour 31 in the approximate form of a half of sole part 29, and a sole part section 29.2 which forms the remainder of sole part 29 is provided on the outside contour 30. Both sole part sections 29.1 and 29.2 complement each other to complete sole part 29. ***In this case, their outside contours 29.3 and 29.4 are connected with one another, for example stitched and/or glued and/or fused or the like, preferably by a longitudinal seam***." **Nishida**, 5:3-13; FIG. 4 (reproduced below).<br>  <br>"[T]he sole part is formed of sole part sections which extend over the entire length of an insole to be formed and which are connected to outside contours of the layout of the shoe upper; and wherein outside edge portions of the sole part sections are fastened together, by producing a lengthwise seam, to form the sole part." **Nishida**, 6:47-54; *see also* 4:22-30; 6:5-41; FIGS. 3-4. |
| [1E] a sole | Nishida describes "***stitching parts of the layout*** of the cut-out |

| CLAIM | GROUND 1 |
|---|---|
| structure secured to the upper. | unit on provided seams ***to form an upper of the shoe shaped part*** . . . ." **Nishida**, 6:36-38 (emphasis added); "Completed shoe upper 3 is then brought into a gluing, injection or casting mold, in which a midsole 33 and an outsole 34 are molded by known measures, as is represented in FIG. 3." **Nishida**, 4:43-46; *see also* Abstract; 1:40-47; 1:50-56; 1:60-2:5; 2:34-37; 2:40-45; 3:6-26; 3:46-48; 3:66-4:1; 4:13-18; 4:25-60; 5:10-26; FIG. 3 (reproduced at right).   |
| [2] The article of footwear recited in claim 1, wherein the circular-knitted textile element forms at least a portion of a lateral side, a medial side, and an instep region of the upper. | "The individual parts or areas of shoe upper 3 can be representations of those areas on which a trimming, for example, a part resistant to wear, is applied. For example, ***areas 5 and 6*** are provided for applying ***an inside or outside heel counter 9*** (FIG. 3)." **Nishida**, 3:27-31 (emphasis added). "To reduce wear, a toe cap 15, represented in FIG. 3, can be applied, especially glued and/or stitched, on the front area, adjacent to front edge 13 of ***toe area 14***." **Nishida**, 3:39-42(emphasis added). "Areas 20, 21 and 22, identified in FIG. 3, ***running from instep area 18 to heel area 19*** . . . ." **Nishida**, 3:59-60 (emphasis added). *See also* **Nishida**, 3:15-4:46; 3:59-4:9; 5:3-8; FIGS. 1-5. |
| [3] The article of footwear recited in claim 1, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper. | ***See* Appendix A, claim 1D.** |
| [4] The article of footwear recited in claim 3, wherein the edges include a pair of second edges that are joined to form | "After cutting out layout 2 from the web of material 1, the edges 7 and 8 are stitched together and a heel seam thus is formed. Then, heel counter 9, represented in FIG. 3, is applied, for example, glued and/or stitched, to adjacent areas 5 and 6." **Nishida**, 3:31-36; *see also* 4:9-11; 6:5-41; FIGS. 2, 4. |

| CLAIM | GROUND 1 |
|---|---|
| a second seam extending along a heel region of the upper. | |
| [5] The article of footwear recited in claim 4, wherein the second seam extends vertically. | **See Appendix A, claim 4.** |
| [6] The article of footwear recited in claim 4, wherein the edges include at least a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper. | "According to an advantageous further development of the invention, an individual part 29 in the form of an insole can be co-produced on layout 2 of shoe upper 3. After being cut out, this individual part 29 remains connected with layout 2, and after or during the shaping and fixing of shoe upper 3 from layout 2, part 29 is folded into the plane of the shoe sole and is fastened to the lower edge zone of the shoe upper 3. This lower edge zone is defined in layout 2 by outside contours 30 and 31, and the manner of its fastening can be, in a way known in the art, for example, by gluing, stitching, tacking or the like." **Nishida**, 4:19-30; FIG. 4; *see also* 3:37-42; 6:5-41; FIGS. 2, 4. |
| [7] The article of footwear recited in claim 1, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. | **Conventional Multilayered Upper With Interior Circular-Knitted Textile Layer Substituted in Place of Interior Fabric Layer**<br><br>"***Areas 20, 21 and 22*** . . . ***can be woven or knitted in two or more layers*** or can be especially thick or additionally embroidered." **Nishida**, 3:59-4:1 (emphasis added); *see also* Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2.)<br><br>"[T]he outside tube 14 may be a normal decorative fabric ***wherein the inner tube 12 may be formed of a material such as lining***." **Reed**, 3:64-66; (emphasis added). Reed, Abstract; 1:58-64; 2:22-25; 2:29-31; 3:5-7; 3:58-60; 3:67-4:3; 4:68-5:2; FIG. 1.<br><br>**Multilayered Upper With Spacer Fabric Comprising Multiple Circular-Knit Layers** |

| CLAIM | GROUND 1 |
|---|---|
| | "As shown in FIGS. 3 and 4, the shoe upper 1 comprises an outer knit fabric layer 4, an inner knit fabric layer 5 provided parallel to the outer knit fabric layer 4 through a space 6, and a number of crossing threads 7 which cross the space 6. The outer knit fabric layer 4 is knitted from a yarn 41 while the inner knit fabric layer 5 is knitted from a yarn 42. The crossing threads 7 are interknitted to be bound into the outer and inner knit fabric layers 4, 5." **Shiomura**, 2:27-35; FIG. 1; FIGS. 2-4 (reproduced below); *see also* 2:20-22; 2:45-54.<br>  <br><br>outer knit fabric layer 4 forms an exterior surface of the shoe upper 1.<br>  <br><br>inner knit fabric layer 5 forms an interior surface of the shoe upper 1.<br>"Referring to FIGS. 1 and 2 of the accompanying drawings, the weft knitted flat jacquard spacer fabric 10 includes a weft knitted jacquard pattern front layer 11 and a weft knitted plain back layer 12 disposed parallel to one another at a predetermined spacing and coupled together by a network of spacer yarns 13 which are preferably firmer and more resilient than the yarns of the face and back layers." Shepherd, 5:12-18; *see also* 4:62-55; FIGS. 1-2. |
| [8] The article of footwear recited in claim 1, wherein the upper includes an exterior layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer. | ***See* Appendix A, claim 7.** |

| CLAIM | GROUND 1 |
|---|---|
| [9] The article of footwear recited in claim 1, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper. | **Nishida**, Abstract; 2:11-22; 2:37-39; 2:45-47; 3:6-15; 3:29-36; 3:39-42; 3:59-4:1; 4:9-11; FIG. 3; FIG. 3<br>  <br><br>Areas 20, 21, 22 of the layout 2 shown in the exterior view of the upper 3.<br>Toe area 14 of the layout 2 shown in the exterior view of the upper 3.<br>"[T]he outside tube 14 may be a normal decorative fabric ***wherein the inner tube 12 may be formed of a material such as lining***." **Reed**, 3:64-66; (emphasis added). Reed, Abstract; 1:58-64; 2:22-25; 2:29-31; 3:5-7; 3:58-60; 3:67-4:3; 4:68-5:2; FIG. 1. |
| [10] The article of footwear recited in claim 9, wherein at least one additional element is secured to the exterior surface and forms a portion of the exterior surface. | "The individual parts or areas of shoe upper 3 can be representations of those areas on which a trimming, for example, a part resistant to wear, is applied. For example, ***areas 5 and 6 are provided for applying*** an inside or ***outside heel counter 9*** (FIG. 3)." **Nishida**, 3:27-29 (emphasis added). "To reduce wear, ***a toe cap 15***, represented in FIG. 3, ***can be applied,*** especially glued and/or stitched, ***on the front area***, adjacent to front edge 13 of ***toe area 14***." **Nishida**, 3:39-42(emphasis added). *See also* **Nishida**, Abstract; 2:11-22; 2:37-39; 2:45-47; 3:6-15; 3:29-36; 3:6-15; 3:29-36; 3:39-42; 3:59-4:1; 4:9-11; FIG. 3. |

| | |
|---|---|
| [11] The article of footwear recited in claim 10, wherein the additional element is secured to a forefoot area of the upper. | ***See* Appendix A, claim 10.** |
| [12] The article of footwear recited in claim 10, wherein the additional element is secured to a heel area of the upper. | ***See* Appendix A, claim 10.** |
| [13] The article of footwear recited in claim 1, wherein the circular-knitted textile element forms an interior surface of the upper. | ***See* Appendix A, claims 7, 9.** |
| [14A] An article of footwear comprising: | ***See* Appendix A, claim 1A.** |

| CLAIM | GROUND 1 | |
|---|---|---|
| [14B] an upper incorporating a circular-knitted textile element, | | ***See* Appendix A, claim 1B.** |
| [14C] the circular-knitted textile element having a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying properties to the circular-knitted textile element, wherein the varying properties are aesthetic or structural, | | ***See* Appendix A, claim 1B.** |
| [14D] wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer; and | | ***See* Appendix A, claim 8.** |
| [14E] a sole structure secured to the upper. | | ***See* Appendix A, claim 1E.** |
| [15] The article of footwear recited in claim 14, wherein the first stitch configuration provides a substantially smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smoother texture. | ***See* Appendix A, claim 1B.**<br><br>"Since, generally, toe area 14 is designed to be relatively deformably ***soft*** or ***elastic***, and optionally, also ***permeable to air***, the web of material 1, in toe area 14, according to the present invention, is correspondingly designed by suitable selection of the weave pattern, ***knit pattern*** and/or the material used, such as, for example, Silk or plastic. The type of production can, additionally, ***insure that the toe area 14 has a good air exchange capability***. ***For example, this can be achieved by a net-like woven or knitted structure."*** **Nishida**, 3:43-52 (emphasis added).<br><br>"[T]he layouts of the shoe upper and sole parts are ***produced by modifying the overall construction of the web of material*** in the locations of the layouts relative to that in portions thereof where the layouts of the shoe upper and the sole parts are not provided, ***using*** one of a ***different*** weaving and ***knitting type*** for the layouts of the shoe upper than is used for producing the sole parts, said weaving and knitting types being matched to differing requirements for materials of the shoe upper and sole part of a shoe in relation to properties thereof including at least one of the | |

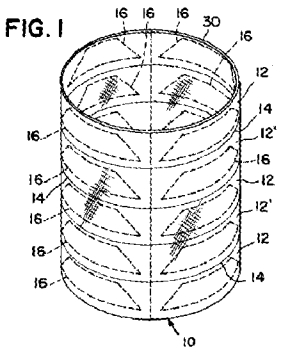
| CLAIM | GROUND 1 |
|---|---|
| | properties of absorptivity, ***air permeability***, ***softness***, ***extensibility***, wear resistance and appearance." **Nishida**, 6:1-31(emphasis added); *see also* 5:63-6:2. |
| [16] The article of footwear recited in claim 15, wherein the second stitch configuration forms a rib structure in the second area. | ***See* Appendix A, claim 15.** |
| [17] The article of footwear recited in claim 14, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the circular-knitted textile element. | Nishida discloses that the u-shaped area in the layout 2 forms an ankle opening 36 when formed into the shoe upper. *See* **Nishida**, FIGS. 1-5.<br><br>"Since, generally, toe area 14 is designed to be relatively deformably soft or elastic, and optionally, also permeable to air, the web of material 1, in toe area 14, according to the present invention, is correspondingly designed by suitable selection of the weave pattern, knit pattern and/or the material used, such as, for example, Silk or plastic. The type of production can, additionally, insure that the toe area 14 has a good air exchange capability. **For example, this can be achieved by a net-like woven or knitted structure**." **Nishida**, 3:43-52 (emphasis added); *see also* 3:66-4:5; 6:25-31.<br><br>Nishida also describes lacing strips that may be layered over the net-like structure to reinforce that structure and holes formed in the lacing strips may be aligned with the existing holes in the net-like structure. **Nishida**, 4:1-5. |
| [18] The article of footwear recited in claim 14, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. | **See Appendix A, claim 7.** |
| [19] The article of footwear recited in claim 14, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper. | **See Appendix A, claim 9.** |
| [20] The article of footwear recited in claim 14, wherein the circular-knitted textile element forms an interior surface of the upper. | **See Appendix A, claims 7, 9.** |
| [21A] An article of footwear comprising: | ***See* Appendix A, claim 1A.** |
| [21B] an upper incorporating a circular-knitted textile element | ***See* Appendix A,** |

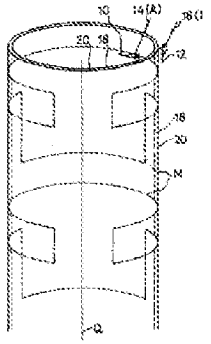
| CLAIM | GROUND 1 |
|---|---|
| having a plurality of knit constructions, and | **claim 1B.** |
| [21C] further having edges that are joined together to form seams and define at least one portion of a void for receiving a foot, | ***See* Appendix A, claim 1D.** |
| [21D] the seams including a first seam and a second seam, the first seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper, and the second seam extending vertically in the heel area; and | ***See* Appendix A, claims 3, 4, 5.** |
| [21E] a sole structure secured to the upper. | ***See* Appendix A, claim 1E.** |
| [22] The article of footwear recited in claim 21, wherein the footwear includes a third seam extending through the forefoot area of the upper. | ***See* Appendix A, claim 6.** |
| [23] The article of footwear recited in claim 21, wherein at least one of the knit constructions forms an aperture in the circular-knitted textile element. | ***See* Appendix A, claim 17.** |
| [24] The article of footwear recited in claim 21, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying elasticity of the circular-knitted textile element. | ***See* Appendix A, claim 15.** |
| [25] The article of footwear recited in claim 21, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying air permeability of the circular-knitted textile element. | ***See* Appendix A, claim 15.** |
| [26] The article of footwear recited in claim 21, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. | ***See* Appendix A, claim 7.** |
| [27] The article of footwear recited in claim 21, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper. | ***See* Appendix A, claim 9.** |
| [28] The article of footwear recited in claim 21, wherein the circular-knitted textile element forms an interior surface of the upper, and at least one additional textile element form an exterior surface of the footwear. | ***See* Appendix A, claim 7.** |
| [29A] An article of footwear comprising: | ***See* Appendix A, claim 1A.** |
| [29B] an upper incorporating a circular-knitted textile element | ***See* Appendix A,** |

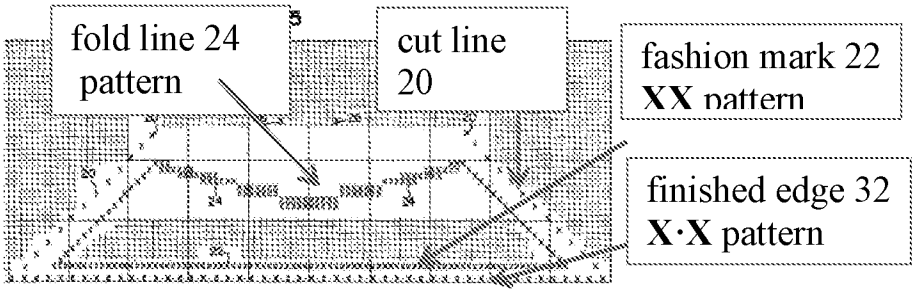
| CLAIM | GROUND 1 | |
|---|---|---|
| having a plurality of knit constructions, | | **claim 1B.** |
| [29C] wherein the circular-knitted textile element is formed with a knitting machine, | | ***See* Appendix A, claim 1B.** |
| [29D] the circular-knitted element being removed from a circular-knitted textile structure | | ***See* Appendix A, claim 1C.** |
| [29E] that includes an outline of the circular-knitted textile element | "[I]n the production of a web of material, both ***the patterns or partial patterns in the form of layouts of the shoe upper*** and the patterns or partial patterns in the form of a sole part, ***are produced by*** a fabric printing process (which is generally well known in the textile industry) on the web of material and/or by ***a textile production process inside the web of material*** . . . ." **Nishida**, 1:50-56 (emphasis added); *see also* Abstract; 1:10-18; 1:40-47; 1:50-2:47; 4:13-18; 4:47-60; 5:63-6:2; FIGS. 1-2.<br><br>"The garments 16, 18 and 20 are ***outlined*** by a plurality of interconnecting knitted stitches 22 and 24." **Reed**, 3:8-9 (emphasis added). "The outline seam 24 is formed from two sets of X's and O's which are offset in the wale axes by four wales. The degree of wale offset ***to form the desired outline*** is a matter of design and thus not critical." **Reed**, 4:42-45 (emphasis added); *see also* 5:67-6:3 (emphasis added). | |
| [29F] having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and | | ***See* Appendix A, claim 1D.** |
| [29G] a sole structure secured to the upper. | | ***See* Appendix A, claim 1E.** |
| [30] The article of footwear recited in claim 29, wherein the circular-knitted textile element has a structure formed by a wide-tube circular knitting | "An example of a ***circular knitting machine*** which will produce knitted structure 10 is Model 9RJ36 made by Wildt, Mellor, Bromley, Ltd. of Leicester, England." **Reed**, 3:58-60 (emphasis added); *see also* Abstract; 1:58-64.<br><br>"Around the circumference of the knitted structure 10 are illustrated three garments which, for example, may be skirts 16, 18, 20." **Reed**, 3:5-7; FIGS. 1-2. | |

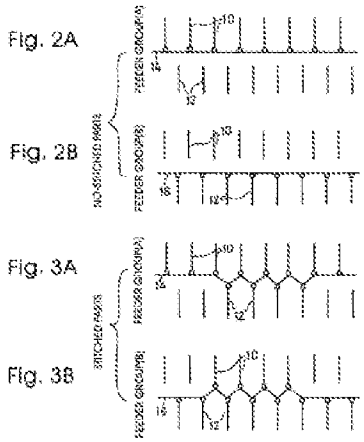
| CLAIM | GROUND 1 |
|---|---|
| machine. | |
| [31] The article of footwear recited in claim 29, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper. | ***See* Appendix A, claim 1D.** |
| [32] The article of footwear recited in claim 31, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper. | ***See* Appendix A, claim 4.** |
| [33] The article of footwear recited in claim 32, wherein the edges include at least a pair of third edges that are joined to form a second seam extending through a forefoot area of the upper. | ***See* Appendix A, claim 6.** |
| [34] The article of footwear recited in claim 29, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. | ***See* Appendix A, claim 7.** |
| [35] The article of footwear recited in claim 29, wherein the circular-knitted textile element forms an interior surface of the upper. | ***See* Appendix A, claims 7, 9.** |
| [36A] An article of footwear comprising: | ***See* Appendix A, claim 1A.** |
| [36B] an upper incorporating a knitted textile element, | ***See* Appendix A, claim 1B.** |
| [36C] wherein the knitted textile element is formed unitarily with a knitted textile structure, | ***See* Appendix A, claim 1B.** |
| [36D] the knitted textile element being removed from the knitted textile structure | ***See* Appendix A, claim 1C.** |
| [36E] that includes an outline of the knitted textile element to form edges, | ***See* Appendix A, claim 29E.** |
| [36F] the knitted textile element having a first area with a first unitary construction and a second area with a second unitary construction different from the first unitary construction, the first area having a first set of properties, and the second area having a second set of properties that is different from the first set of properties to impart varying characteristics to the textile element, | ***See* Appendix A, claim 1B.** |
| [36G] and further having the edges joined together to form a seam extending from a heel area to a forefoot area of the | ***See* Appendix A, claim 4.** |

| CLAIM | GROUND 1 | |
|---|---|---|
| footwear along a lower surface of the upper; and | | |
| [36H] a sole structure secured to the upper. | | ***See* Appendix A, claim 1E.** |
| [37] The article of footwear recited in claim 36, wherein the first set of properties and the second set of properties are at least one of a stitch configuration and a yarn type. | | ***See* Appendix A, claim 1B.** |
| [38] The article of footwear recited in claim 36, wherein the knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. | | ***See* Appendix A, claim 7.** |

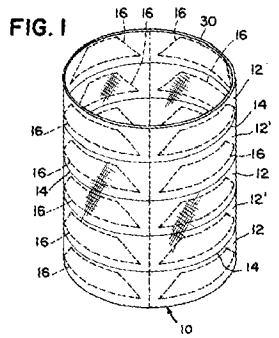
| CLAIM | GROUND 2 |
|---|---|
| [1A] An article of footwear comprising: | ***See* Appendix A, claim 1A regarding Nishida.**<br><br>"The present invention resides in a novel method of fabricating knitted collars on circular knitting machines . . . ." **Castello**, 1:39-40; *see also* Abstract; 1:35-2:4; 3:34-4:10; 4:22-5:44; 6:35-58; 7:1-5; FIGS. 1, 2A, 2-5.<br><br>"FIG. 1 illustrates schematically a formation of a circular knitted fabric as a first embodiment of the present invention, from which fabric a garment such as a sweater is obtained without necessitating any subsequent sewing process." **Fujiwara,** 3:45-48; *see also* 1:58-3:18; 3:59-4:65. |
| [1B] an upper incorporating a circular-knitted textile element having a plurality of knit constructions, | **Circular-knitted textile element:**<br>***See* Appendix A, claim 1B regarding Nishida.**<br><br>"In utilizing the method of the present invention, circular machines having either Jacquard cards, or pattern wheels or drums or any other known suitable mechanical means of needle selection can be used. For purposes of illustration, a Jacquard type machine with cards, such as a TJI or Links and Links machine will be described." **Castello**, 1:43-49.<br><br>"After a suitable sketch has been prepared on the graph paper showing the desired collar shape, design, color, mock fashion marks, etc., knitting machine cards (or some equivalent system) are then punched or otherwise prepared in conventional manner and<br>set up on the machine to thereby automatically control the machine stitches to knit the tubular cloth 10 with the layers 12, 12', the separating threads 14 and the collar construction 16 knitted therein." **Castello**, 3:59-67; *see also* 3:34-45; 3:68-4:55; 5:18-44; FIG. 1 (reproduced at right); FIG. 2.<br><br>FIG. 1<br>  <br> |

| CLAIM | GROUND 2 |
|---|---|
| | "In other words, it is desirable that the circular knitting machine is the one that, at each thread feeding position, is provided with a computer controlled pattern control mechanism. Namely, for practicing the present invention, it is desirable that the circular knitting machine is of a so-called double knitting type by which an independent needle selection control is obtained at each thread feeder not only for the cylinder needles but also for the dial needles. Such a type of a circular knitting machine is, for example, available from Fukuhara Industrial Trading Co., Ltd., Osaka, Japan under the trade name of V-LEC4D." **Fujiwara**, 4:12-21.<br><br>"According to the present invention, the circular knitted fabric is constructed by an inner and outer layers, which are separate with each other and which are knitted by the dial and cylinder needles, respectively. The inner and outer layers are, along an outline of an article or a garment, connected with each other by using a stitching construction using both of the dial and cylinder needles." **Fujiwara**, 2:31-37; *see also* 1:58-3:18; 4:66-5:7; FIGS. 1, 4 (reproduced below); FIGS. 6, 7.<br>  <br><br>**<u>Plurality of Knit Constructions:</u>**<br>***See* Appendix A, claim 1B regarding Nishida.**<br><br>"[A]s seen in FIG. 5, a graph 18 is first laid out in accordance with practices well known to those skilled in the art to show features such as peripheral knitted cutting guide lines 20, knitted fashion marks 22, knitted neck fold lines 24 and knitted guide marks 26, 28. The guide marks 26, 28 serve as guides to aid sewing machine operators when the collar is being affixed to the remainder of the garment." **Castello**, 3:51-58; FIG. 5 (reproduced below).<br><br>"[A] collar construction 16 can be produced on a single circular |

| CLAIM | GROUND 2 |
|---|---|
| | knitting machine having an integral knitted fold crease 24, knitted sewing guide marks 26, 28, mock fashion marks 22 and any desired Jacquard color designs (not illustrated) . . . . ***The fashion marks 22 may be knitted in conventional manner spaced apart in any desired stitch pattern, such as by Jacquard patterns***. The fashion marks 22 may be knit continuously about the periphery of the collar." **Castello**, 4:23-33 (emphasis added); FIG. 5. "[M]ore or fewer fashion marks 22 can be provided, ***more or fewer collar fold marks 24 (knitted as reversed jersey)*** can be knit, ***more or fewer stripes, various colors, patterns (not illustrated)*** can be programmed into the circular knitting machine." **Castello**, 5:35-44 (emphasis added); FIG. 5.<br><br>"[T]he top and bottom edges 30, 32 of each layer 12, 12' are finished, knitted edges which remain after separation of the layers by pulling the draw threads 14 and can serve as the top and bottom edges respectively, 30', 32' of each individual collar 16 without further sewing or other operations." **Castello**, 4:4-10; FIG. 5.<br><br>"[C]ircular neck fold line 24 of jersey stitches . . . create[s] a collar that lays naturally on the back of the neck without 'hiking' up or down to thereby enhance the beauty and utility of the collar. The fold 24 remains permanent even after washing or dry cleaning inasmuch as it is knitted directly into the fabric and thus reduces pressing costs in the finished garment." **Castello**, 4:53-63; *see also* 1:43-49; 1:54-68; 2:12-21; 2:42-52; 3:34-58; 4:34-5:7; 5:13-17.<br><br>  <br>"FIGS. 2A and 2B illustrate, in a course direction, schematically, |

| CLAIM | GROUND 2 |
|---|---|
| | knitting diagrams at yarn feeders in groups A and B, respectively at the non-stitched part of the fabric. At the yarn feeder in the group A in FIG. 2A, . . . the ***fabric is of basically a plain stitch***, wherein the cylinder needle 12 does not take part in knitting operation. Similarly, at the yarn feeder in the group B in FIG. 2B, . . .***the fabric is, also, of basically a plain stitch*** (tenjiku), wherein the cylinder needle 10 does not take part in knitting operation. Thus***, a separate structure is obtained between the inner and outer layers 18 and 20***." **Fujiwara,** 5:42-56 (emphasis added) FIGS. 2A, 2B (reproduced below).<br><br>"FIGS. 3A and 3B illustrate schematically in a course direction knitting diagrams at yarn feeders in groups A and B, respectively at the stitched part of the fabric. At the yarn feeder in the group A, . . . ***the integrated fabric is of a so-called rib stitch*** in a rib stitch arrangement between the dial and cylinder needles 10 and 12. However, in a jacquard arrangement (not shown) of the dial and cylinder needles 10 and 12, ***it is possible that another desired stitching, such as birds eye, eyelet, circular rib or interlock may be employed***. **Fujiwara**, 5:57-6:1 (emphasis added); FIGS. 3A, 3B (reproduced at right); *see also* 6:2-7; 6:43-62.<br>  |
| [1C] the circular-knitted textile element being removed from a circular-knitted textile structure, and | ***See*** **Appendix A, claim 1C regarding Nishida.**<br><br>"After the tubular cloth 10 has been knit by the machine (not shown), the draw threads 14 are pulled to separate the cloth into a plurality of individual layers 12, 12'. The layers are then cut along the knitted cut guide lines 20 to produce a plurality of individual collars 16, each having cut sides 38, 40." **Castello**, 3:67-4:4; *see also* 4:38-45; 4:67-5:17.<br><br>"As a result, when the fabric is cut outwardly along the outline |

| CLAIM | GROUND 2 |
|---|---|
| | while the stitched parts are at least partially left, a garment can be obtained, which has a front and back bodies, which are connected along the outline M." **Fujiwara**, 5:7-11; *see also* 1:58-3:18; 6:12-42; 7:21-37. |
| [1D] further having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and | ***See* Appendix A, claim 1D.** |
| [1E] a sole structure secured to the upper. | ***See* Appendix A, claim 1E.** |
| [2] The article of footwear recited in claim 1, wherein the circular-knitted textile element forms at least a portion of a lateral side, a medial side, and an instep region of the upper. | ***See* Appendix A, claim 2.** |
| [3] The article of footwear recited in claim 1, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper. | ***See* Appendix A, claim 3.** |
| [4] The article of footwear recited in claim 3, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper. | ***See* Appendix A, claim 4.** |
| [5] The article of footwear recited in claim 4, wherein the second seam extends vertically. | ***See* Appendix A, claim 5.** |
| [6] The article of footwear recited in claim 4, wherein the edges include at least a pair of third edges that are joined to form a third seam extending through a forefoot area of the upper. | ***See* Appendix A, claim 6.** |
| [7] The article of footwear recited in claim 1, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer | **Conventional Multilayered Upper With Interior Circular-Knitted Textile Layer Substituted in Place of Interior Fabric Layer**<br><br>"***Areas 20, 21 and 22* . . . ***can be woven or knitted in two or more layers*** or can be especially thick or additionally embroidered." **Nishida**, 3:59-4:1 (emphasis added); *see also* Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2.) |

| CLAIM | GROUND 2 |
|---|---|
| of the upper. | Castello describes that the collars are knitted as single layers so that the same layer forms the interior and exterior surface. *See* **Castello**, FIG. 1 (reproduced at right).<br><br>***See* Appendix A, claim 7 regarding Shiomura and Shepherd.**<br><br>  |
| [8] The article of footwear recited in claim 1, wherein the upper includes an exterior layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer. | ***See* Appendix B, claim 7.** |
| [9] The article of footwear recited in claim 1, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper. | ***See* Appendix A, claim 9 regarding Nishida, Appendix B, claim 1B regarding Castello.** |
| [10] The article of footwear recited in claim 9, wherein at least one additional element is secured to the exterior surface and forms a portion of the exterior surface. | ***See* Appendix A, claim 10.** |
| [11] The article of footwear recited in claim 10, wherein the additional element is secured to a forefoot area of the upper. | ***See* Appendix A, claim 10.** |
| [12] The article of footwear recited in claim 10, wherein the additional element is secured to a heel area of the upper. | ***See* Appendix A, claim 10.** |
| [13] The article of footwear recited in claim 1, wherein the circular-knitted textile element forms an interior surface of the upper. | ***See* Appendix B, claims 7, 9.** |
| [14A] An article of footwear comprising: | ***See* Appendix B, claim 1A.** |
| [14B] an upper incorporating a circular-knitted textile element, | ***See* Appendix B, claim 1B.** |
| [14C] the circular-knitted textile element having a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second | ***See* Appendix B, claim 1B.** |

<table>
<tr><th>CLAIM</th><th colspan="2">GROUND 2</th></tr>
<tr><td colspan="2">area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying properties to the circular-knitted textile element, wherein the varying properties are aesthetic or structural,</td><td></td></tr>
<tr><td colspan="2">[14D] wherein the upper includes an exterior layer, an intermediate layer, and an interior layer, and the circular-knitted textile element forms at least a portion of the interior layer; and</td><td>See Appendix B, claim 8.</td></tr>
<tr><td colspan="2">[14E] a sole structure secured to the upper.</td><td>See Appendix B, claim 1E.</td></tr>
<tr><td>[15] The article of footwear recited in claim 14, wherein the first stitch configuration provides a substantially smooth texture to the first area, and the second stitch configuration provides a texture to the second area that is rougher than the smoother texture.</td><td colspan="2">See Appendix A, claim 15.<br><br>“FIGS. 2A and 2B illustrate, in a course direction, schematically, knitting diagrams at yarn feeders in groups A and B, respectively at the non-stitched part of the fabric. At the yarn feeder in the group A in FIG. 2A, . . . the fabric is of basically a plain stitch, wherein the cylinder needle 12 does not take part in knitting operation. Similarly, at the yarn feeder in the group B in FIG. 2B, . . .the fabric is, also, of basically a plain stitch (tenjiku), wherein the cylinder needle 10 does not take part in knitting operation. Thus, a separate structure is obtained between the inner and outer layers 18 and 20.” Fujiwara, 5:42-56 (emphasis added) FIGS. 2A, 2B (reproduced below).<br><br>“FIGS. 3A and 3B illustrate schematically in a course direction knitting diagrams at yarn feeders in groups A and B, respectively at the stitched part of the fabric. At the yarn feeder in the group A, . . . the integrated fabric is of a so-called rib stitch in a rib stitch arrangement between the dial and cylinder needles 10 and 12. However, in a jacquard arrangement (not shown) of the dial and cylinder needles 10 and 12, it is possible that another desired stitching, such as birds eye, eyelet, circular rib or interlock may be employed.” Fujiwara, 5:57-6:1 (emphasis added); FIGS. 3A, 3B (reproduced below); see also 6:2-7; 6:43-62; 7:21-24.</td></tr>
<tr><td colspan="2">[16] The article of footwear recited in claim 15, wherein the second stitch configuration forms a rib structure in the second area.</td><td>See Appendix B, claim 15.</td></tr>
</table>

| CLAIM | GROUND 2 |
|---|---|
| [17] The article of footwear recited in claim 14, wherein at least one of the first stitch configuration and the second stitch configuration forms an aperture in the circular-knitted textile element. | ***See* Appendix A, claim 17.**<br><br>"FIGS. 3A and 3B illustrate schematically in a course direction knitting diagrams at yarn feeders in groups A and B, respectively at the stitched part of the fabric. At the yarn feeder in the group A, the yarn 14 is subjected to a knitting by both of the dial and cylinder needles 10 and 12, so that the inner and outer layers 18 and 20 are integrated. In the example shown in FIG. 3A, the ***integrated fabric*** is of a so-called rib stitch in a rib stitch arrangement between the dial and cylinder needles 10 and 12. However, in a jacquard arrangement (not shown) of the dial and cylinder needles 10 and 12, ***it is possible that another desired stitching, such as birds eye, eyelet,*** circular rib or interlock ***may be employed***. In the similar way, at the yarn feeder in the group B in FIG. 3B, the yarn 16 is subjected to a knitting by both of the dial and cylinder needles 10 and 12, so that the inner and outer layers 18 and 20 are integrated. Similarly***, any of stitching such as bird's eye, eyelet***, circular rib or interlock ***may also be employed***." **Fujiwara**, 5:57-6:7 (emphasis added); FIGS. 3A, 3B (reproduced below); see also 6:43-62; 7:21-24. |
| [18] The article of footwear recited in claim 14, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. | ***See* Appendix B, claim 7.** |
| [19] The article of footwear recited in claim 14, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper. | ***See* Appendix B, claim 9.** |
| [20] The article of footwear recited in claim 14, wherein the circular-knitted textile element forms an interior surface of the upper. | ***See* Appendix B, claims 7, 9.** |
| [21A] An article of footwear comprising: | ***See* Appendix B, claim 1A.** |
| [21B] an upper incorporating a circular-knitted textile element having a plurality of knit constructions, and | ***See* Appendix B, claim 1B.** |
| [21C] further having edges that are joined together to form seams and define at least one portion of a void for receiving a foot, | ***See* Appendix B, claim 1D.** |
| [21D] the seams including a first seam and a second seam, the | ***See* Appendix B,** |

| CLAIM | GROUND 2 |
|---|---|
| first seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper, and the second seam extending vertically in the heel area; and | **Claims 3, 4, 5.** |
| [21E] a sole structure secured to the upper. | ***See* Appendix B, claim 1E.** |
| [22] The article of footwear recited in claim 21, wherein the footwear includes a third seam extending through the forefoot area of the upper. | ***See* Appendix B, claim 6.** |
| [23] The article of footwear recited in claim 21, wherein at least one of the knit constructions forms an aperture in the circular-knitted textile element. | ***See* Appendix B, claim 17.** |
| [24] The article of footwear recited in claim 21, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying elasticity of the circular-knitted textile element. | ***See* Appendix B, claim 15.** |
| [25] The article of footwear recited in claim 21, wherein the knit constructions produce varying properties in the circular-knitted textile element including a varying air permeability of the circular-knitted textile element. | ***See* Appendix B, claim 15.** |
| [26] The article of footwear recited in claim 21, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. | ***See* Appendix B, claim 7.** |
| [27] The article of footwear recited in claim 21, wherein the circular-knitted textile element forms at least a portion of both an interior surface and an exterior surface of the upper. | ***See* Appendix B, claim 9.** |
| [28] The article of footwear recited in claim 21, wherein the circular-knitted textile element forms an interior surface of the upper, and at least one additional textile element form an exterior surface of the footwear. | ***See* Appendix B, claim 7.** |
| [29A] An article of footwear comprising: | ***See* Appendix B, claim 1A.** |
| [29B] an upper incorporating a circular-knitted textile element having a plurality of knit constructions, | ***See* Appendix B, claim 1B.** |
| [29C] wherein the circular-knitted textile element is formed with a knitting machine, | ***See* Appendix B, claim 1B.** |
| [29D] the circular-knitted element being removed from a circular-knitted textile structure | ***See* Appendix B, claim 1C.** |

| CLAIM | GROUND 2 |
|---|---|
| [29E] that includes an outline of the circular-knitted textile element | ***See* Appendix A, claim 29E regarding Nishida.**<br><br>"The method of the present invention also eliminates the need for patterns for use when cutting inasmuch as knitting cutting guide lines 20 are knit directly into the tubular knitted cloth 10 during the knitting operation. The only cutting required is along the sides 38, 40 of the collar which have the cutting guide lines 20 already knit directly in the fabric. Mock fashion marks 22 can be knit along the sides 38, 40 and the bottom edge 32' of the collar in any desired design or pattern by employing conventional knitting procedures. The bottom edge 32' of the collar need not be additionally sewn inasmuch as this is a knitted finished edge which remains after pulling the draw thread 14 and so requires no additional operations." **Castello**, 4:38-52; *see also* 1:68; 2:45-50; 3:50-58; 4:2-4; 4:11-12; 4:22-33; 4:67-5:17; 5:35-44; FIG. 5.<br><br>"In FIG. 1, a closed phantom line M indicates, in a very schematic manner, an outline of a sweater as a garment wherein one of the inner and outer layers 18 and 20 becomes one side (front body) of the sweater while the other of the inner and outer layers 18 and 20 becomes the other side (back body) of the sweater. Along the outline M of a necessary width, the inner and outer tubular layers 18 and 20 are connected or stitched with each other, so that the both of the layers 18 and 20 are integrated." **Fujiwara**, 4:66-5:7; *see also* 2:34-37; 3:62-4:5; 5:20-41; 6:12-22; 7:21-32; FIGS. 1, 4, 6, 7. |
| [29F] having longitudinal edges that are joined together to define at least a portion of a void for receiving a foot; and | ***See* Appendix B, claim 1D.** |
| [29G] a sole structure secured to the upper. | ***See* Appendix B, claim 1E.** |
| [30] The article of footwear recited in claim 29, wherein the circular- | "Referring again to FIG. 5, I show a sketch which may be employed in conjunction with an ***eight-cut*** L.H. circular machine having 64 levers per automat. Assuming twelve automats, the machine could be programmed to knit three collar constructions 16 per layer 12. In the illustration shown, ***768 needles*** would be employed less approximately 10 needles on each side of the gate on automats one and twelve." **Castello**, 5:18-25 (emphasis |

| CLAIM | GROUND 2 | |
|---|---|---|
| knitted textile element has a structure formed by a wide-tube circular knitting machine. | added); *see also* Abstract; 1:35-53; 1:47-64; 3:34-39; 4:23-38. | |
| [31] The article of footwear recited in claim 29, wherein the edges include a pair of first edges that are joined to form a first seam extending longitudinally along a lower region of the upper. | | ***See* Appendix B, claim 3.** |
| [32] The article of footwear recited in claim 31, wherein the edges include a pair of second edges that are joined to form a second seam extending along a heel region of the upper. | | ***See* Appendix B, claim 4.** |
| [33] The article of footwear recited in claim 32, wherein the edges include at least a pair of third edges that are joined to form a second seam extending through a forefoot area of the upper. | | ***See* Appendix B, claim 6.** |
| [34] The article of footwear recited in claim 29, wherein the circular-knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. | | ***See* Appendix B, claim 7.** |
| [35] The article of footwear recited in claim 29, wherein the circular-knitted textile element forms an interior surface of the upper. | | ***See* Appendix B, claims 7, 9.** |
| [36A] An article of footwear comprising: | | ***See* Appendix B, claim 1A.** |
| [36B] an upper incorporating a knitted textile element, | | ***See* Appendix B, claim 1B.** |
| [36C] wherein the knitted textile element is formed unitarily with a knitted textile structure, | | ***See* Appendix B, claim 1B.** |
| [36D] the knitted textile element being removed from the knitted textile structure | | ***See* Appendix B, claim 1C.** |
| [36E] that includes an outline of the knitted textile element to form edges, | | ***See* Appendix B, claim 29E.** |
| [36F] the knitted textile element having a first area with a first unitary construction and a second area with a second unitary | | ***See* Appendix B, claim 1B.** |

| CLAIM | GROUND 2 | |
|---|---|---|
| construction different from the first unitary construction, the first area having a first set of properties, and the second area having a second set of properties that is different from the first set of properties to impart varying characteristics to the textile element, | | |
| [36G] and further having the edges joined together to form a seam extending from a heel area to a forefoot area of the footwear along a lower surface of the upper; and | | ***See* Appendix B, claim 4.** |
| [36H] a sole structure secured to the upper. | | ***See* Appendix B, claim 1E.** |
| [37] The article of footwear recited in claim 36, wherein the first set of properties and the second set of properties are at least one of a stitch configuration and a yarn type. | | ***See* Appendix B, claim 1B.** |
| [38] The article of footwear recited in claim 36, wherein the knitted textile element is one of an exterior layer, an intermediate layer, and an interior layer of the upper. | | ***See* Appendix B, claim 7.** |

Doc Code: IDS
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| 37 CFR 1.501 INFORMATION DISCLOSURE CITATION IN A PATENT (Sheet 1 of 1) | Docket Number (Optional) | Patent Number 8,042,288 |
|---|---|---|
| | Applicant: Bhupesh Dua and Edward Nathaniel Thomas | |
| | Issue Date: October 25, 2011 | Art Unit |

**U.S. PATENT DOCUMENTS**

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---|---|---|---|---|---|---|
| | 3985003 | 10/76 | ALFRED REED | 66 | 196 | 05/01/1975 |
| | 4038840 | 08/77 | LEE CASTELLO | 66 | 170 | 01/29/1976 |
| | 6330814 | 12/01 | TOSHIO FUJIWARA | 66 | 8 | 07/14/2000 |
| | 5345638 | 09/94 | MAMORA NISHIDA | 12 | 146 | 06/23/1993 |
| | 4785558 | 11/88 | KAZUHIKO SHIOMURA | 36 | 114 | 07/22/1987 |
| | 6779369 | 08/04 | ADRIAN SHEPHERD | 66 | 196 | 07/31/2003 |
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**FOREIGN PATENT DOCUMENTS**

| | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES | TRANSLATION NO |
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**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

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|---|---|---|
| | | David J. Spencer, "Knitting Technology", 1989 and 2001, Woodhead Publishing Limited, pp. 1-413 |
| | | Paul Burall, "CoID Design Awards," Design, June 1969, pp. 46 - 47 |
| | | ISO 8117:2003(E) Textile machinery - Knitting machines - Nominal diameters of circular machines |
| | | |
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| EXAMINER | DATE CONSIDERED |
|---|---|
| | |

This collection of information is required by 37 CFR 1.501. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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# Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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adidas AG
Petitioner

v.

Nike, Inc.
Patent Owner

Patent No. 7,814,598
Filing Date: February 18, 2008
Issue Date: October 19, 2010
Title: ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

*Inter Partes* Review No. Unassigned

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

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LIST OF EXHIBITS

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|---|---|
| 1001 | U.S. Patent No. 7,814,598 ("the '598 patent") |
| 1002 | File History for U.S. Patent No. 7,814,598 ("'598 file history") |
| 1003 | Declaration of Lenny Holden ("Holden Decl.") |
| 1004 | C.V. for Lenny Holden |
| 1005 | Form PTO-SB/42 |
| 1006 | U.S. Patent No. 3,985,003 to Reed ("Reed") |
| 1007 | U.S. Patent No. 4,038,840 to Castello ("Castello") |
| 1008 | U.S. Patent No. 6,330,814 to Fujiwara ("Fujiwara") |
| 1009 | U.S. Patent No. 5,345,638 to Nishida ("Nishida") |
| 1010 | David J. Spencer, Knitting Technology: A Comprehensive Handbook and Practical Guide (Third Ed., Woodhead Publishing Ltd. 2001) ("Spencer") |
| 1011 | Paul Burall, "CoID Design Awards," Design, June 1969, pp. 46-47 ("Burall") |
| 1012 | ISO 8117:2003(E) Textile machinery - Knitting machines - Nominal diameters of circular machines ("ISO 8117") |



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# I. INTRODUCTION

Through counsel, real party in interest adidas AG ("Petitioner") hereby petitions for initiation of *inter partes* review of claims 1-13 of U.S. Patent No. 7,814,598 ("the '598 patent"), assigned to Nike, Inc. ("Patent Owner"). A copy of the '598 patent is attached as Exhibit 1001, and a copy of the prosecution history of the '598 patent is attached as Exhibit 1002.

# II. MANDATORY NOTICES

## A. Real Party in Interest

Petitioner, adidas AG, the ultimate parent of adidas International B.V., adidas North America, Inc., adidas America, Inc., and adidas International, Inc., is the real party-in-interest for the instant petition.

## B. Related Matters

The '598 patent is a divisional application of U.S. Patent No. 7,347,011 ("the '011 patent"). The Board instituted *inter partes* review of claims 1-46 of the '011 patent (IPR2013-00067), and Nike requested cancellation of claims 1-46 and proposed substitute claims 47-50. The Board granted the motion to cancel, but denied the motion as to the substitute claims. Nike appealed the Board's decision to the Federal Circuit (Case No. 2014-1719). The Federal Circuit issued a decision on February 11, 2016, which affirmed-in-part, vacated-in-part, and remanded the case to the Board for further proceedings on secondary consideration and patentability of dependent claim 49.

### C. Fee

This petition for *inter partes* review of 13 claims of the '598 patent is accompanied by a fee payment of $23,000, which includes the $9,000 *inter partes* review request fee and the $14,000 *inter partes* review post-institution fee. *See* 37 C.F.R. § 312(a)(1) and 37 C.F.R. § 42.15(a) and 42.103. Petitioner further authorizes a debit from Deposit Account 20-1430 for whatever additional payment is necessary in granting this petition.

### D. Designation of Lead Counsel and Request for Authorization

| Lead Counsel | Back-Up Counsel |
|---|---|
| Mitchell G. Stockwell<br>Reg. No. 39,389<br>mstockwell@kilpatricktownsend.com<br>Kilpatrick Townsend & Stockton LLP<br>1100 Peachtree Street, NE, Suite 2800<br>Atlanta, Georgia 30309<br>(404) 815 6214 | Vaibhav P. Kadaba<br>Reg. No. 45,865<br>wkadaba@kilpatricktownsend.com<br>Kilpatrick Townsend & Stockton LLP<br>1100 Peachtree Street, NE, Suite 2800<br>Atlanta, Georgia 30309<br>(404) 532 6959<br><br>Tiffany L. Williams<br>Reg. No. 59,549<br>tiwilliams@kilpatricktownsend.com<br>Kilpatrick Townsend & Stockton LLP<br>1100 Peachtree Street, NE, Suite 2800<br>Atlanta, Georgia 30309<br>(404) 815 6608 |

### E. Service Information

As identified in the attached Certificate of Service, a copy of the present petition, in its entirety, is being served to the address of the attorney or agent of record. Petitioner, adidas AG, may be served at its counsel, Kilpatrick Townsend &

Stockton LLP, at the e-mail addresses indicated above.

### F. Power of Attorney

A power of attorney with the designation of counsel is filed herewith in accordance with 37 C.F.R. § 42.10(b).

### G. Standing

Petitioner certifies that the '598 patent is eligible for *inter partes* review and further certifies that Petitioner is not barred or otherwise estopped from requesting *inter partes* review challenging the identified claims on the grounds identified herein.

## III. THE '598 PATENT

### A. Priority Date of the '598 Patent

The '598 patent issued on October 19, 2010 from Application No. 12/032,995 (the "'995 application"), filed on February 18, 2008. The '598 patent purports to be a division of Application No. 10/791,289, filed on March 3, 2004, now U.S. Patent No. 7,347,011. Thus, the earliest possible effective filing date for purposes of 35 U.S.C. §§ 102(a) and 102(b) is March 3, 2004

### B. Brief Description of the '598 Patent and Summary of the Prosecution History

The '598 patent relates to an article of footwear having a textile upper. (Ex. 1001, 1:18-21). The '598 patent specifically teaches that the upper incorporates a textile element, which may be formed with a knitting machine. (*Id.*, 3:27-29).

The '995 application was filed on February 18, 2008, with claims 1-15. Original independent claims 1 and 9 were directed to methods of manufacturing an article of

footwear.

The PTO issued a first Office Action on the merits, rejecting all pending claims under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 1,910,251 to Joha ("Joha") in view of Santoni S.p.A sewing machines, described as prior art machines in the specification. (Ex. 1002, 7/27/2009 Office Action, p. 2.)

Applicants responded by amending the independent claims to recite that the textile structure "incorporates a single type of textile having a plurality of knit constructions." (Ex. 1002, 10/20/2009 Response, p. 5.)

A final Office Action issued, rejecting all pending claims. (Ex. 1002, 11/30/2009 Office Action, pp. 2-3.) The Examiner rejected claims 1-15 under 35 U.S.C. § 112, second paragraph, as being indefinite because "a single type of textile" was confusing, vague, and indefinite, as it was unclear what a "type" of textile was or what structural limitations were encompassed. (*Id.*) The Examiner also continued to reject claims 1-15 under 35 U.S.C. § 103(a) as unpatentable over Joha in view of Santoni S.p.A. sewing machines. (*Id.*)

Applicants responded by removing the phrase that the textile structure "incorporates a single type of textile having a plurality of knit constructions," to address the 112 rejections. (Ex. 1002, 3/17/2010 Response.) Applicants then argued that Joha and Santoni do not disclose that a "textile element" is removed from a machine-knitted "textile structure" and that the "textile element" is incorporated into an upper of an article of footwear. (*Id.*, at 6.) Specifically, Applicants argued that,



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with Joha, the entire knitted blank is formed into the foot covering, and Santoni fails to disclose that any textile element is removed from the cylindrical machine-knitted textile structure, or that any removed textile element is incorporated into an upper of an article of footwear. (*Id.*, at 6.)

Applicants separately argued that the features of dependent claims 3, 4, 11, and 13 are not disclosed in Joha or Santoni. (*Id.*, at 7.)

The Examiner then allowed claims 1-15. (Ex. 1002, 4/2/2010 Notice of Allowance.)

Applicants responded by filing a Request for Continued Examination to submit several Chinese office actions from the corresponding Chinese case and art cited therein, which included the Chinese publication of Nishida. (Ex. 1002, 7/1/2010 Request for Continued Examination.)

The PTO then issued a non-final Office Action, allowing claims 1-8, rejecting claims 9 and 13-15, and objecting to claims 10-12. (Ex. 1002, 7/12/2010 Office Action, p. 2.) In particular, the Examiner rejected claims 9 and 13-15 under 35 U.S.C. § 102(b) as "being clearly anticipated by CN 1067566A" (the Chinese publication of Nishida). (*Id.,* at 2.) Other than the limitation in claim 9 that recites that the textile structure has "an outline of at least one textile element," the only differences between independent claim 1 and independent claim 9 are: the use of "circular knitting machine" and "cylindrical textile structure" in claim 1 versus the use of "knitting machine" and "textile structure" in claim 9.



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According to an Interview summary, Applicants and the Examiner discussed recently submitted additional prior art, as well as amendments to the independent claims to be entered via examiner's amendment. (Ex. 1002, 7/27/2010 Interview Summary included with 8/6/2010 Notice of Allowance.) Specifically, claim 9 was amended to add "**wide-tube circular** knitting machine." (*Id.*, at 2.) Claims 10 and 12 were canceled, and new independent claim 16 was added, which is identical to claim 9 but instead recites a "**jacquard double needle-bar raschel** knitting machine." (*Id.*)

The Examiner then allowed claims 1-9, 11, and 13-16 (renumbered as claims 1-14). (Ex. 1002, 8/6/2010 Notice of Allowance.) Applicants transmitted the issue fee payment on September 13, 2010, and the '598 patent issued on October 19, 2010. (Ex. 1002, 9/13, 2010 Issue Fee Payment.)

## IV. CLAIM CONSTRUCTION

A claim subject to *inter partes* review ("IPR") is given its "broadest reasonable construction ["BRI"] in light of the specification of the patent in which it appears." 37 C.F.R. § 42.100(b). The words of the claim are, thus, given their plain meaning unless that meaning is inconsistent with the specification. *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989). Petitioner submits, for the purposes of the IPR only, that the majority of the claim terms are presumed to take on their broadest reasonable interpretation in view of the specification of the '598 patent.



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### A. "a first area and a second area with a unitary construction" (claims 4, 11)

Claims 4 and 11 recite that the textile element includes "a first area and a second area with a unitary construction." As part of the IPR proceedings for the '011 patent, the Board construed this phrase to "require a textile element having a unitary construction *and* having a first area and a second area." *adidas AG v. Nike, Inc.*, IPR2013-00067, Paper No. 60, pp. 16-17, 2013 WL 8595550, at *7 (PTAB May 17, 2013). Because the '598 patent shares a common specification with the '011 patent and is a division thereof, Petitioner requests that the Board construe the phrase in claims 4 and 11 to have the same meaning as its prior construction.

### B. "wide-tube circular knitting machine" (claims 2, 9)

Under the BRI standard, "wide-tube circular knitting machine" should be construed as: "a circular knitting machine with a nominal diameter of 7 inches or larger." The '598 patent uses "wide-tube circular knitting machine" to describe a Santoni S.p.A. wide-tube circular knitting machine having a diameter that ranges from 10 inches to 20 inches (7:14-20), but provides no other definition or explanation for what is meant by "wide-tube circular knitting machine." The use of "wide-tube circular knitting machine" in the '598 patent is consistent with ISO 8117, an international knitting standard from 2003, which specifies that any circular knitting machine with a nominal diameter of 178 mm (7 inches) or larger is categorized as a large (or wide-tube) circular knitting machine. ( Holden Decl. (Ex. 1003), ¶ 97.)

Petitioner submits that the remaining claim terms should be accorded their ordinary and customary meaning as understood by one of ordinary skill in the art. *See* 77 Fed. Reg. 48700 (2012). Any claim constructions presented either implicitly or explicitly in this proceeding should not be viewed as a concession as to the proper scope of any claim term in any future litigation proceeding.

## V. STATEMENT OF RELIEF REQUESTED

Pursuant to 37 C.F.R. § 42.104(b), Petitioner respectfully requests cancellation of claims 1-13 based on the following grounds:

| Ground | 35 U.S.C. | Claims | References |
|---|---|---|---|
| 1 | 103(a) | 1-13 | Reed and Nishida |
| 2 | 103(a) | 1-13 | Castello, Fujiwara, and Nishida |

Below is a discussion of why the challenged claims of the '598 patent are unpatentable under the statutory grounds raised, including claim charts specifying where each element of a challenged claim is met by the prior art. 37 C.F.R. § 42.104(b)(4). The showing in these sections establishes a reasonable likelihood of prevailing as to each ground of invalidity with respect to the challenged claims as to that ground. This showing is supported by the Declaration of Lenny Holden ("Holden Decl.") (Ex. 1003).

## VI. PERSON OF ORDINARY SKILL IN THE ART AT THE TIME OF THE '598 PATENT

A person of ordinary skill in the art for the '598 patent would have at least a few years of experience in the footwear industry, possibly with a focus in one specific



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area (such as merchandising, design, product development, commercialization, and/or manufacturing), but would also have a broader understanding of shoemaking in general, as all aspects are so interdependent on each other. A person of ordinary skill would have an understanding of the product cycle for the process of designing, developing, and bringing a new product to market. He or she would also understand that there are some key review milestones where upper material designs are reviewed and considered, such as textiles, leathers, synthetics, or other types of materials used for upper construction. The skilled person would have some understanding and knowledge of the available and varied ranges of typical construction methods within a product cycle. In addition, a person of ordinary skill would have a basic knowledge of the functional requirements of footwear and a comprehensive understanding of the range of material choices, as well as construction techniques and processes used to create the various parts of a shoe and to assemble them in an effective manner. (Ex. 1003, ¶ 34.)

## VII. CLAIM-BY-CLAIM EXPLANATION OF GROUNDS

As detailed in the claim charts below, through the various identified prior art references or arguments, the majority of which were not before the Examiner during prosecution of the '598 patent, all limitations of claims 1-13 of the '598 patent were well-known in the prior art. Regarding various combinations of prior art, the '598 patent claims merely recite the combination of "prior art elements according to known methods to yield predictable results" and/or the "[u]se of known technique[s]

to improve similar devices (methods, or products) in the same way." *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417-22 (2007); MPEP § 2143 (A, C).

### A. Ground 1: Obviousness of Claims 1-13 in View of Reed and Nishida

#### 1. Reed (Ex. 1006)

Reed (Ex. 1006) issued on October 12, 1976, before the March 3, 2004 earliest possible priority date claimed by the '598 patent. Reed thus is prior art under 35 U.S.C. § 102(b). Reed was not cited during prosecution of the '598 patent and explicitly describes features of claims 1-13 of the '598 patent.

Reed describes a method of manufacturing a wearable item, which includes, among other things: mechanically-manipulating a yarn with a circular-knitting machine to form a cylindrical textile structure, the textile elements located in different portions of the textile structure; removing the textile element(s) from the textile structure; and incorporating the textile element(s) into any type of garment worn by men, women, and children, including stockings and hosiery. (Ex. 1006, Abstract; 1:58-64; 2:14-16; 2:22-31; 3:1-19; 3:58-60; 4:68-5:2; 5:56-57; 5:67-6:5; FIGS. 1, 2A, 2-6; Ex. 1003, ¶92, 95, 98-99, 103, 131.)

By way of background, Reed explains that the use of circular knitting machines in the garment industry was historically limited to making tubular, knitted garments, such as ladies stockings, sweaters, and other garments, wherein the entire knitted fabric was used as a unit to form one surface of a finished garment. (Ex. 1006, 1:33-



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44; Ex. 1003, ¶94.) Although Reed recognized that footwear items, such as stockings, were conventionally knit with circular knitting machines, the ability to incorporate complex knit patterns for footwear on a larger scale (as described in Reed) was not historically possible because the labor and complexity involved in manually programming the mechanical-type patterns limited pattern sizes to approximately 144 wales wide, 324 courses high. (Ex. 1006, 1:48-50; Ex. 1003, ¶94.)

With the advent in computerized programming for knit machines that began in the 1970s, however, "an era of unlimited pattern potential began." (Ex. 1006, 1:45-48; Ex. 1003, ¶95.) "Computer electronic knitting brought about the possibilities of making patterns and designs of up to three million stitches (previously approximately 50,000 was maximum). With this system, patterns and designs are possible that before could not be made." (Ex. 1006, 1:50-55; Ex. 1003, ¶95.) Reed goes on to explain that the present invention uses "an electronic circular double knitting machine" and that an "object of the present invention is to provide a method of reducing the cost of manufacturing of garments by using the versatility of a computerized electronic knitting machine." (Ex. 1006, 1:58-59; 2:23-25; FIGS. 1-6; Holden Decl. (Ex. 1003), ¶95.)

**2. Nishida (Ex. 1009)**

Nishida (Ex. 1009) issued on September 13, 1994, before the March 3, 2004 earliest possible priority date claimed by the '598 patent. Nishida thus is prior art under 35 U.S.C. § 102(b). The Chinese counterpart to Nishida was relied on by the



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Examiner as an anticipatory reference for claims 9 and 13-15, as described in Section III.B above, confirming the relevancy of Nishida to the claimed subject matter. (Ex. 1002, 7/12/2010 Office Action, p. 2.) Yet Nishida (or its Chinese counterpart) was neither applied against all claims nor considered and applied as an obviousness reference in combination with other prior art references including, for example, Reed. (Ex. 1002, 8/6/2010 Notice of Allowance.)

Nishida describes using conventional textile processes and program-controlled web of material production devices to form a textile structure with a single or a plurality of textile elements in the shape of a shoe upper located in different portions of the textile structure; and removing the textile element(s) from the textile structure. (Ex. 1009, Abstract; 1:10-18; 1:47-2:5; 2:11-25; 2:40-47; 3:6-26; 3:43-52; 3:59-4:5; 4:12-18; 4:47-60; 5:64-65; FIGS. 1-2; Ex. 1003, ¶93, 96, 100-102, 104.)

### 3. The Combination of Reed and Nishida

Reed's explicit statement that "[t]he present invention may be used to form all types of garments worn by men, women and children" (Reed, 5:56-57) in combination with Reed's explicit reference to the fact that footwear items, such as stockings, were conventionally knit with circular knitting machines (Reed, 1:33-44), would have suggested to a person of ordinary skill in the relevant art at least as of March 3, 2004, that Reed's process could be used to form all types of articles of clothing including footwear, particularly since clothing is understood to refer to all things that people wear to cover their bodies. (Ex. 1003, ¶131.) Specifically, the skilled person would



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have understood Reed's reference to "all types of garments" to include tops, pants, shorts, skirts, dresses, suits, outerwear, underwear, footwear, headwear, nightwear, swimwear, and accessories (such as headbands, scarves, bandanas, handkerchiefs, neckties, gloves, cummerbunds, etc.). (Ex. 1003, ¶131.)

With this understanding, the skilled person would have been motivated to use Reed's process to produce textile elements for all types of clothing, including forming textile elements to be incorporated into footwear as described in Nishida. (Ex. 1003, ¶132.)

The skilled person would have found Nishida's process of manufacturing textile elements to be analogous art to Reed's process, as both are directed to methods of simultaneously forming textile elements within a surrounding textile structure using programmable and/or computerized single needle selection technology, removing the textile elements, and incorporating the textile elements into a wearable item. (Ex. 1003, ¶133.)

Additionally, both Reed and Nishida are directed to reducing costs associated with producing textile elements using the latest advances in knitting technology. (Ex. 1003, ¶134-135.)

In view of the substantial similarities between the methods described in Reed and Nishida, a person of ordinary skill in the relevant art would certainly have been motivated to modify Reed's method to include the additional features described by Nishida to produce a textile element for use in a shoe upper, as well as to produce a



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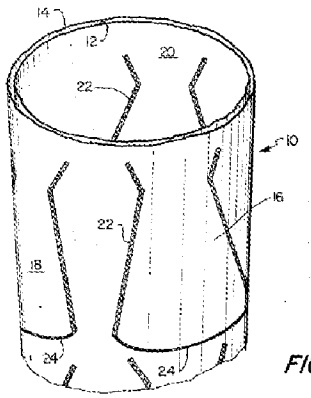
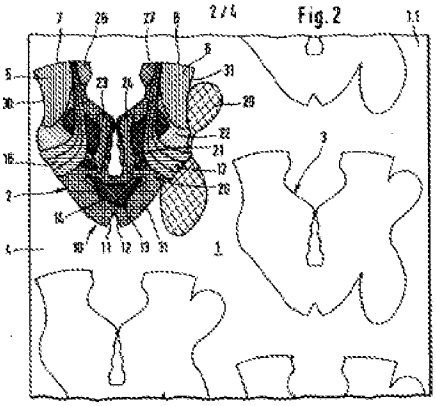
shoe incorporating such a textile element, as this is nothing more than combining "prior art elements according to known methods to yield predictable results" and/or the "[u]se of known technique[s] to improve similar devices (methods, or products) in the same way." *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417-22 (2007); MPEP § 2143 (A, C); Ex. 1003, ¶136-137.) This is particularly the case where "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. at 421.

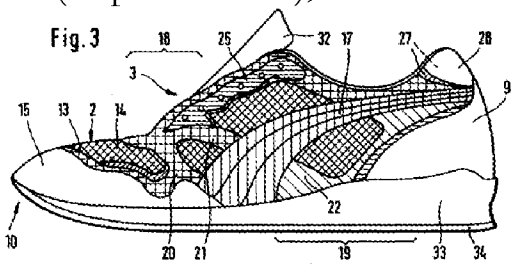
### 4. Claim-by-Claim Analysis

#### i. Independent Claim 1

The chart below shows how Reed and Nishida disclose all of the limitations of claim 1, and thus render claim 1 obvious. (Ex. 1003, ¶92-93, 95-96, 98, 100-101, 103-104, 126, 131.)

| CLAIM | GROUND 1 |
|---|---|
| [1A] A method of manufacturing an article of footwear, the method comprising steps of: | "Still another object is to provide a method for producing a plurality of garments formed about the circumference of a knitted tube." **Reed**, 2:29-31. "The present invention may be used to form all types of garments worn by men, women and children . . . ." **Reed**, 5:56-57.<br><br>"This invention relates to a process for the production of a shoe shaped part . . . ." **Nishida**, 1:10-11; *see also* Abstract; 1:65-2:10; 2:26-33; 3:27-42; 4:19-30; 4:43-46; 5:3-26; 5:63-6:2. |
| [1B] mechanically-manipulating a yarn with a circular-knitting machine to form a | "Another object of the present invention is to provide a method of reducing the cost of manufacturing of garments by using the versatility of a ***computerized electronic knitting machine***." **Reed**, 2:22-25 (emphasis added); *see also* 1:58-59; FIGS. 1-6. "The present invention uses an electronic circular double knitting machine programmed to simultaneously knit ***two concentric tubes***, one on the |

| CLAIM | GROUND 1 |
|---|---|
| cylindrical textile structure; | dial set of needles and a second on the cylinder set of needles and additionally programmed to interconnect the two concentric tubes by a knit interlock stitch ***to form the outline of the design of a garment***." **Reed**, 1:58-64 (emphasis added); FIG. 1 (reproduced at right); *see also* 3:5-7; 4:68-5:2.  FIG. 1 |
| | "In FIGS. 1 and 2, a web of material is identified by 1, and is produced by a conventional textile process, for example, by weaving and/or knitting and/or embroidering." **Nishida**, 3:6-9; *see also* Abstract; 1:10-18; 1:47-2:5; 2:11-25; 2:40-47; 3:6-26; 3:43-52; 3:59-4:5; 4:12-18; 4:47-60; 5:64-65; FIGS. 1, 2 (reproduced at right).  Fig. 2 |
| | "As can be seen, ***any number of layouts 2 in the most varied configurations and/or designs as well as of different sizes can be produced on a single web of material 1***. For this purpose, above all, ***the use of program-controlled, particularly computer-controlled, production devices is advantageous***, so that style, color, design, size or the like can be varied at will." **Nishida**, 4:12-18 (emphasis added); *see also* 2:40-41; 4:53-54; 5:64-65. |
| | "***[O]nly just those parts of the web of material*** are ***produced*** in the necessary quality, thickness, multilayers or the like ***which correspond to the pattern or to an area of a pattern of the shoe upper or the related shoe part***. The ***remaining area of the web of material*** in contrast can consist of a simple, lightweight or |

| CLAIM | GROUND 1 |
|---|---|
| | inexpensive material quality, which ***holds together only the patterns or areas of such patterns in the web of material*** after their completion." **Nishida**, 2:12-20 (emphasis added); *see also* Abstract; 1:40-2:5; 2:11-2:25; 2:40-54; 3:6-26; 3:43-4:9; 4:11-18; 4:47-55; 5:27-40; 5:45-6:2. |
| [1C] removing at least one textile element from the textile structure; and | "The interconnecting knitting 24 is merely to define the lower outline of the skirt ***upon which the pattern may be cut***. As can be seen, the knitted structure 10 includes (around its circumference) ***a plurality of finished garments which need only be severed from the structure 10*** and turned inside out if a hidden seam is desired." **Reed**, 3:12-19 (emphasis added). "As indicated previously, once the knitted structure 10 is removed from the knitting machine, ***the individual garments may be servered [sic] by cutting along the outline*** formed by the interconnecting stitches represented by the X's and O's. If desired, the ***fabric may be cut with a hot knife*** so that the edges are fused together to add additional strength to the seams." **Reed**, 5:67-6:5 (emphasis added); *see also* Abstract; 2:14-16; 3:12-19; 5:67-6:5; FIGS. 2, 4-6.<br><br>"This invention relates to a process for the production of a shoe shaped part using a web of material with a plurality of patterns in the form of the layout of a shoe upper, ***cutting out these layouts from the web of material*** and stitching the parts of the shoe upper to a top part, and fastening the related part of the sole to the edge area of the cut-open outside edge of the assigned layout and to a shoe shaped part produced according to this process." **Nishida**, 1:10-18 (emphasis added); *see also* Abstract; 1:65-2:10; 2:20-25; 2:30-33; 3:31-35; 4:31-43. |
| [1D] incorporating the textile element into an upper of the article of footwear. | Nishida describes "***stitching parts of the layout*** of the cut-out unit on provided seams ***to form an upper of the shoe shaped part*** . . . ." **Nishida**, 6:36-38 (emphasis added); *see also* Abstract; 1:40-47; 1:50-56; 1:60-2:5; 2:34-37; 2:40-45; 3:6-26; 3:46-48; 3:66-4:1; 4:13-18; 4:25-60; 5:10-26; FIG. 3 (reproduced at right).<br>  |

### ii. Dependent Claim 2

Dependent claim 2 depends from claim 1, and adds the limitation of "utilizing a wide-tube circular knitting machine." Reed identifies "[a]n example of a ***circular knitting machine*** which will produce knitted structure 10 is Model 9RJ36 made by Wildt, Mellor, Bromley, Ltd. of Leicester, England." (Ex. 1006, 3:58-60 Ex. 1003, ¶97.)

As Mr. Holden explains, with respect to the example shown in Figures 1 and 2, Reed explicitly describes that he is using his knitting machine and technique to make a plurality of "skirts 16, 18, and 20" "[a]round the circumference of the knitted structure 10." (Ex. 1006, 3:5-7; Ex. 1003, ¶97.) That fact alone would inform a skilled person at least as of March 3, 2004, that the circumference of the circular knitted tube must be at least large enough to accommodate the width of three skirts, and would certainly require a circumference larger than 22 inches, as each skirt (even sized for a child) would require more than 7 inches of space around the circumference of the knitted tube. (Ex. 1003, ¶97.) The skilled person would also have understood that a circular knitting machine having a circumference of at least 22 inches (i.e., a nominal diameter of at least 7 inches) is a wide-tube circular knitting machine. (Ex. 1003, ¶97.) Hence, skilled persons would thus have recognized that wide-tube circular knitting machines were used to make Reed's garments and would understand that the Model 9RJ36 was one such example. (Ex. 1003, ¶97.) Indeed, as a revolutionary and award-winning wide-tube knitting machine, the skilled person at least as of at least

March 3, 2004, would have been aware of the 9RJ36, and would have known that it had a diameter of 30 inches, as evidenced by Burall (Ex. 1011). (Ex. 1003, ¶97.)

The chart below shows how Reed discloses this feature of claim 2, and thus renders claim 2 obvious. (Ex. 1003, ¶97.)

| CLAIM | GROUND 1 |
|---|---|
| [2] The method recited in claim 1, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine. | "An example of a ***circular knitting machine*** which will produce knitted structure 10 is Model 9RJ36 made by Wildt, Mellor, Bromley, Ltd. of Leicester, England." **Reed**, 3:58-60 (emphasis added); *see also* Abstract; 1:58-64.<br><br>"Around the circumference of the knitted structure 10 are illustrated three garments which, for example, may be skirts 16, 18, 20." **Reed**, 3:5-7; FIGS. 1-2. |

### iii. Dependent Claim 3

Dependent claim 3 depends from claim 1, and adds the limitation of "forming a texture in the cylindrical textile structure with a shape of the textile element." The chart below shows how Reed and Nishida disclose the features of claim 3, and thus render claim 3 obvious. (Ex. 1003, ¶112-113.)

| CLAIM | GROUND 1 |
|---|---|
| [3] The method recited in claim 1, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a | "The garments 16, 18 and 20 are ***outlined*** by a plurality of interconnecting knitted stitches 22 and 24." **Reed**, 3:8-9 (emphasis added). "The outline seam 24 is formed from two sets of X's and O's which are offset in the wale axes by four wales. The degree of wale offset ***to form the desired outline*** is a matter of design and thus not critical." **Reed**, 4:42-45 (emphasis added). "[O]nce the knitted structure 10 is removed from the knitting machine, the individual garments may be severed by cutting along ***the outline formed by the interconnecting stitches*** represented by the X's and O's." **Reed**, 5:67-6:3 (emphasis added). |

| CLAIM | GROUND 1 |
|---|---|
| shape of the textile element. | "[I]n the production of a web of material, both ***the patterns or partial patterns in the form of layouts of the shoe upper*** and the patterns or partial patterns in the form of a sole part, ***are produced by*** a fabric printing process (which is generally well known in the textile industry) on the web of material and/or by ***a textile production process inside the web of material*** . . . ." **Nishida**, 1:50-56 (emphasis added); *see also* Abstract; 1:10-18; 1:40-47; 1:50-2:47; 4:13-18; 4:47-60; 5:63-6:2; FIGS. 1-2. |

### iv. Independent Claim 9

Independent claim 9 is substantially similar to the combination of claims 1, 2, and 3, wherein elements [9A], [9C], and [9D] are identical to elements [1A], [1C], and [1D], respectively.

A primary difference is that [9B] recites that "to form a textile structure having an outline of at least one textile element." However, dependent claim 3 adds essentially this same feature to claim 1 in the form of "forming a texture in the cylindrical textile structure with a shape of the textile element."

Also, [9B] recites "a wide-tube circular knitting machine." However, dependent claim 2 adds this identical feature to claim 1.

The chart below shows how Reed and Nishida disclose the features of claim 9, and thus render claim 9 obvious. (Ex. 1003, ¶92-93, 95-98, 100-101, 103-104, 112-113, 126, 131.)

| CLAIM | GROUND 1 |
|---|---|
| [9A] A method of manufacturing an article of footwear, the method comprising the steps of: | ***See* Section VII.A.4.i, claim 1A.** |
| [9B] mechanically-manipulating a yarn with a wide-tube | ***See* Sections** |

| CLAIM | GROUND 1 |
|---|---|
| circular knitting machine to form a textile structure having an outline of at least one textile element; | **VII.A.4.i, claim 1B, VII.A.4.ii, claim 2, and VII.A.4.iii, claim 3.** |
| [9C] removing the textile element from the textile structure; | ***See* Section VII.A.4.i, claim 1C.** |
| [9D] incorporating the textile element into an upper of the article of footwear. | ***See* Section VII.A.4.i, claim 1D.** |

### v. Dependent Claim 10

Dependent claim 10 depends from claim 9, and adds the limitation of "forming a texture in the cylindrical textile structure with a shape of the textile element." This limitation is virtually identical to claim 3. As discussed in Section VII.A.4.iii above with respect to claim 3, Reed and Nishida describe the features of claim 10, and thus render claim 10 obvious. Ex. 1003, ¶112-113.)

| CLAIM | GROUND 1 |
|---|---|
| [10] The method recited in claim 9, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element. | ***See* Section VII.A.4.iii, claim 3.** |

### vi. Dependent Claims 4 and 11

Dependent claims 4 and 11 recite "forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the knitted textile element." The chart below shows how



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Reed and Nishida disclose the features of claims 4 and 11, and thus render claims 4 and 11 obvious. (Ex. 1003, ¶114-121.)

Specifically, Reed describes these features in two different ways:

First, Reed describes that the edges of the garments 16, 18, 20 are formed by interknitted stitches, whereas the remainder of the garments 16, 18, 20 are formed by non-interknitted stitches. Ex. 1003, ¶115.) Specifically, the outline of the garments 16, 18, 20 is formed with interknitted stitches (shown in X's and O's in FIG. 2), which are formed by feeds 1, 2, 3, and 4 on needles 7, 9, 8, and 10 (as shown in FIGS. 3B and 3D). (Ex. 1006, 5:3-18; FIGS. 3A-3E; Ex. 1003, ¶115.) In contrast, "two feeds [i.e., feeds 1, 3 for the dial needles] are used for one course of the inner tube 12 and two feeds [i.e., feeds 2, 4 for the cylinder needles] are used for the outer tube 14." (Ex. 1006, 4:61-64; FIGS. 2, 2A, 3A-3E; *see also* 5:67-6:3; Ex. 1003, ¶115-116.) Because the interknitted stitches are part of the garments 16, 18, 20, and the garments 16, 18, 20 also comprise areas that are only formed as part of the outer tube 14 or the inner tube 12, the garments 16, 18, 20 have a plurality of different knitted textures formed by varying at least one of the stitch type and the yarn type. (Ex. 1003, ¶116.)

Second, Reed also goes on to describe how the two layers 12, 14 themselves may be formed of different yarns or stitch configurations. (Ex. 1003, ¶117.) "If the two tubes 12 and 14 are knitted of two different fibers, the knitted structure may form sections of a garment to be assembled in the regular manner. For example, the outside tube 14 may be a normal decorative fabric wherein the inner tube 12 may be

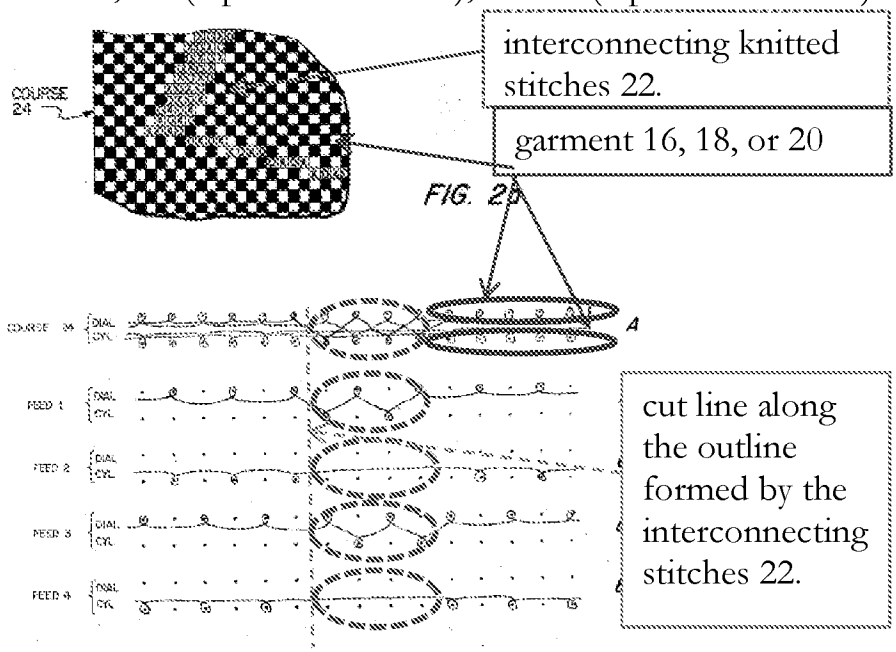
formed of a material such as lining. By simultaneously knitting and interknitting the two layers, a step is saved by producing a section of garment which is prelined. Similarly, the layer 12 (instead of being lining) may be interfacing, which is attached to the outside layer 14 and again saves a step in the manufacture of garments. Another example where two different fibers are used to make the inner and outer tubing would be in the foundation garment industry, where the inner fabric could be cotton or other soft fibers and the outer fabric would be lycra or elasticized yarns." (Ex. 1006, 3:61-4:9; Ex. 1003, ¶117.)

Similarly, Nishida describes that "in the embodiment according to FIGS. 1 and 2, with layout 2 on the web of material 1, ***areas 26 and 27 are produced in a configuration***, color or style ***that is different from the other areas***." (Ex. 1009, 4:6-9 (emphasis added); *see also* Abstract; 1:65-69; 2:40-45; 3:15-26; 3:47-48; 4:12-28; 4:48-55; 5:56-6:2; Ex. 1003, ¶118-119.) Nishida further states that "[l]ayout 2 is divided into different individual parts or areas, which differ from one another, such as by being of another material style and/or by being of different fibers or yarns, for example, from wool, wool with metal yarns, silk, silk with metal yarns, wool with plastic fibers or the like . . . ." (Ex. 1009, 3:15-25; Ex. 1003, ¶121.) The result is a textile element with multiple knit constructions.

Nishida goes on to describe that these varying properties may include a varying elasticity, air permeability, absorptivity, softness, extensibility, wear resistance, and appearance. (Ex. 1009, 3:43-52; 5:63-6:2; 6:1-31; Ex. 1003, ¶120-121.)



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| CLAIM | GROUND 1 |
|---|---|
| [4] The method recited in claim 1, wherein the step of mechanically manipulating includes forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element. | "The knitted structure of course 24 of FIG. 2 formed by program 1 is illustrated in FIGS. 3A-3E. The inner knitting fabric formed on the dial needles are shown in FIG. 3A above the outer knitted fabric formed on the cylinder needles. Feed 1 (FIG. 3B) knits on dial needles 2, 4, 6, 8, 12, 14, etc. to form alternate stitches on the inner tube with feed 3 (FIG. 3D) on dial needles 1, 3, 5, 7, 9, 11, 13, 15, etc. stitches therebetween. The outer fabric is formed basically from an alternation of the cylinder needles using feeds 2 and 4 (FIGS. 3C and 3E, respectively). ***Interknitted stitches (shown as X's and O's in FIG. 2) are formed by feeds 1 and 3 on needles 7 and 9 and 8 and 10, respectively, as shown in FIGS. 3B and 3D. As can be seen in FIG. 3A, feeds 1 and 3 form part of the outer fabric at interconnecting stitches 7, 8, 9, and 10 of course 24 of FIG. 2.***" **Reed**, 5:3-18 (emphasis added); FIGS. 3A-3E. "[O]nce the knitted structure 10 is removed from the knitting machine, the individual garments may be severed by cutting along the outline formed by the interconnecting stitches represented by the X's and O's." **Reed**, 5:67-6:3; *see also* 4:61-64; FIGS. 2, 2A (reproduced below), 3A-3E (reproduced below).<br>  <br><br>"If the two tubes 12 and 14 are knitted of two different fibers, the knitted structure may form sections of a garment to be assembled in the regular manner. For example, the outside tube 14 may be a normal decorative fabric wherein the inner tube 12 may be formed |

| CLAIM | GROUND 1 |
|---|---|
| | of a material such as lining. By simultaneously knitting and interknitting the two layers, a step is saved by producing a section of garment which is prelined. Similarly, the layer 12 (instead of being lining) may be interfacing, which is attached to the outside layer 14 and again saves a step in the manufacture of garments. Another example where two different fibers are used to make the inner and outer tubing would be in the foundation garment industry, where the inner fabric could be cotton or other soft fibers and the outer fabric would be lycra or elasticized yarns." **Reed**, 3:61-4:9.<br><br>"Finally, in the embodiment according to FIGS. 1 and 2, with layout 2 on the web of material 1, ***areas 26 and 27 are produced in a configuration***, color or style ***that is different from the other areas***." **Nishida**, 4:6-9 (emphasis added). "Layout 2 is divided into different individual parts or areas, which differ from one another, such as by being of another material style and/or by being of different fibers or yarns, for example, from wool, wool with metal yarns, silk, silk with metal yarns, wool with plastic fibers or the like . . . ." **Nishida**, 3:15-25. "With the use of program-controlled web of material production devices, after a one-time creation of the program, the size of the layout corresponding to the shoe size, the woven or ***knitted type of individual areas or contours***, the type of fiber or yarn and/or the color ***can be selected almost at will***." **Nishida**, 2:40-45 (emphasis added); *see also* Abstract; 1:65-69; 3:15-26; 3:47-48; 4:12-28; 4:48-55; 5:56-6:2.<br><br>"Since, generally, toe area 14 is designed to be relatively deformably soft or ***elastic***, and optionally, also permeable to air, the web of material 1, in toe area 14, according to the present invention, is correspondingly designed by suitable selection of the weave pattern, ***knit pattern*** and/or the material used, such as, for example, Silk or plastic. The type of production can, additionally, ***insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a net-like woven or knitted structure***." **Nishida**, 3:43-52 (emphasis added).<br><br>"[T]he layouts of the shoe upper and sole parts are ***produced*** |

| CLAIM | GROUND 1 |
|---|---|
| | ***by modifying the overall construction of the web of material*** in the locations of the layouts relative to that in portions thereof where the layouts of the shoe upper and the sole parts are not provided, ***using*** one of a ***different*** weaving and ***knitting type*** for the layouts of the shoe upper than is used for producing the sole parts, said weaving and knitting types being matched to differing requirements for materials of the shoe upper and sole part of a shoe in relation to properties thereof including at least one of the properties of absorptivity, ***air permeability***, ***softness***, ***extensibility***, wear resistance and appearance." **Nishida**, 6:1-31 (emphasis added); *see also* 5:63-6:2. |

### vii. Dependent Claim 5

The chart below shows how Reed and Nishida disclose the feature of claim 5, and thus render claim 5 obvious. (Ex. 1003, ¶99-100, 102.)

| CLAIM | GROUND 1 |
|---|---|
| [5] The method recited in claim 1, wherein the step of mechanically manipulating includes forming at least two textile elements in the cylindrical textile structure. | "Still another object is to provide a method for producing a ***plurality of garments*** formed about the circumference of a knitted tube." **Reed**, 2:29-31 (emphasis added). "As can be seen, the knitted structure 10 includes (around its circumference) a ***plurality of finished garments*** which need only be severed from the structure 10 and turned inside out if a hidden seam is desired." **Reed**, 3:15-19 (emphasis added); *see also* Abstract; 1:58-64; 2:22-25; 3:5-7; 3:58-60; 4:68-5:2; FIG. 1.<br><br>"The web of material 1 can be provided with a single or with a plurality of layouts 2 of the shape of a shoe upper 3, as it is represented from the side, for example, in FIG. 3." **Nishida**, 3:9-12; *see also* Abstract; 1:47-2:5; 2:11-25; 2:40-2:47; 3:6-26; 3:43-52; 3:59-4:5; 4:47-60; 5:64-65; FIGS. 1-3. |

### viii. Dependent Claim 6

Dependent claim 6 recites "forming apertures in the textile element." The chart below shows how Reed and Nishida disclose the feature of claim 6, and thus render claim 6 obvious. (Ex. 1003, ¶127-130.)

The '598 patent describes "apertures" in one of three ways: (1) as an ankle opening (Ex. 1001, 6:24-25); (2) as openings formed by omitting stitches within the textile element in specific locations to facilitate air transfer through the upper (Ex. 1001, 9:46-53); and (3) as openings formed by omitting stitches within the textile element in specific locations as lace holes (Ex. 1001, 10:15-18). (Ex. 1003, ¶127.)

With respect to the first type of "ankle opening" aperture, Nishida discloses that the u-shaped area in the layout 2 forms an ankle opening 36 when formed into the shoe upper. (Ex. 1009, FIGS. 1-5.; Holden Decl. (Ex. 1003), ¶128.)

With respect to the second type of "air-permeability" apertures, Nishida discloses that the "type of production can, additionally, insure that the toe area 14 has a good air exchange capability. For example, this can be achieved by a ***net-like woven or knitted structure***." (Ex. 1009, 3:49-52 (emphasis added); *see also* 3:43-52; 3:66-4:5; 6:25-31; Holden Decl. (Ex. 1003), ¶129.)

With respect to the third type of "lace hole" apertures, Nishida describes lacing strips that may be layered over the net-like structure to reinforce that structure and holes formed in the lacing strips may be aligned with the existing holes in the net-like structure. (Ex. 1009, 4:1-5.; Holden Decl. (Ex. 1003), ¶130.) Thus, Nishida explains



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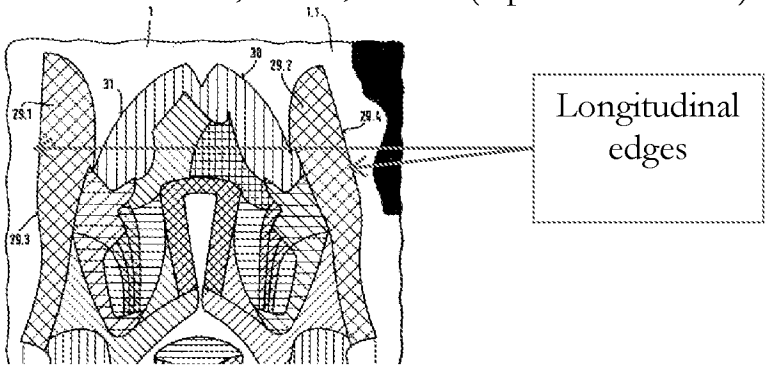
that "the lacing areas 23 and 24 *can be made dimensionally stable* in corresponding manners, especially *if, for example, no additional trimmings, such as the lacing strips 25, shown in FIG. 3, are to be applied.*" (Ex. 1009, 4:1-5 (emphasis added); Holden Decl. (Ex. 1003), ¶130.) Nishida thus recognizes that (a) the lacing strips are optional and may not be applied; (b) that the net-like structure may itself then be used or (c) if no lacing strips are applied and the net-like structure is used, then the lacing areas can be further stabilized via an embroidery. (Ex. 1009, 4:31-38; Holden Decl. (Ex. 1003), ¶130.) However, if the additional lacing strips and embroidery are not added, the textile element still includes the net-like structure in the lacing area. (Ex. 1003, ¶130.)

| CLAIM | GROUND 1 |
|---|---|
| [6] The method recited in claim 1, wherein the step of mechanically manipulating includes forming apertures in the textile element. | Nishida discloses that the u-shaped area in the layout 2 forms an ankle opening 36 when formed into the shoe upper. *See* **Nishida**, FIGS. 1-5.<br><br>"Since, generally, toe area 14 is designed to be relatively deformably soft or elastic, and optionally, also permeable to air, the web of material 1, in toe area 14, according to the present invention, is correspondingly designed by suitable selection of the weave pattern, knit pattern and/or the material used, such as, for example, Silk or plastic. The type of production can, additionally, insure that the toe area 14 has a good air exchange capability. **For example, this can be achieved by a net-like woven or knitted structure**." **Nishida**, 3:43-52 (emphasis added); *see also* 3:66-4:5; 6:25-31.<br><br>Nishida also describes lacing strips that may be layered over the net-like structure to reinforce that structure and holes formed in the lacing strips may be aligned with the existing holes in the net-like structure. **Nishida**, 4:1-5. Thus, Nishida explains that "the lacing areas 23 and 24 *can be made dimensionally stable* in corresponding manners, especially *if, for example, no additional* |

| CLAIM | GROUND 1 |
|---|---|
| | *trimmings, such as the lacing strips 25, shown in FIG. 3, are to be applied.*" **Nishida,** 4:1-5 (emphasis added). |

### ix. Dependent Claims 7 and 12

Dependent claims 7 and 12 recite "securing edges of the knitted textile element to form a seam that extends along a lower region of an upper." The chart below shows how Nishida discloses these features of claims 7 and 12, and thus renders claims 7 and 12 obvious. (Ex. 1003, ¶123-124.)

| CLAIM | GROUND 1 |
|---|---|
| [7] The method recited in claim 1, wherein the step of incorporating includes securing a first pair of edges of the textile element to each other to form a first seam that extends along a lower region of the upper. | "With the embodiment according to FIG. 4, a sole part section 29.1 that extends over the entire length of the sole is provided on outside contour 31 in the approximate form of a half of sole part 29, and a sole part section 29.2 which forms the remainder of sole part 29 is provided on the outside contour 30. Both sole part sections 29.1 and 29.2 complement each other to complete sole part 29. ***In this case, their outside contours 29.3 and 29.4 are connected with one another, for example stitched and/or glued and/or fused or the like, preferably by a longitudinal seam.***" **Nishida**, 5:3-13; FIG. 4 (reproduced below).<br>  <br>"[T]he sole part is formed of sole part sections which extend over the entire length of an insole to be formed and which are connected to outside contours of the layout of the shoe upper; and wherein outside edge portions of the sole part sections are fastened together, by producing a lengthwise seam, to form the sole part." **Nishida**, 6:47-54; *see also* 4:22-30; 6:5-41; FIGS. 3-4. |

### x. Dependent Claims 8 and 13

Dependent claims 8 and 13 recite "securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper." The chart below shows how Nishida discloses these features of claims 8 and 13, and thus renders claims 8 and 13 obvious. (Ex. 1003, ¶125.)

| CLAIM | GROUND 1 |
|---|---|
| [8] The method recited in claim 7, wherein the step of incorporating further includes securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper. | "After cutting out layout 2 from the web of material 1, the edges 7 and 8 are stitched together and a heel seam thus is formed. Then, heel counter 9, represented in FIG. 3, is applied, for example, glued and/or stitched, to adjacent areas 5 and 6." **Nishida**, 3:31-36; *see also* 4:9-11; 6:5-41; FIGS. 2, 4. |

## B. Ground 2: Obviousness of Claims 1-13 in View of Castello, Fujiwara, and Nishida

### 1. Castello (Ex. 1007)

Castello (Ex. 1007) issued on August 2, 1977, before the March 3, 2004 earliest possible priority date claimed by the '598 patent. Castello thus is prior art under 35 U.S.C. § 102(b). Castello was not cited during prosecution of the '598 patent and explicitly describes features of claims 1-13 of the '598 patent.

Castello describes a method of manufacturing a textile element, which includes, among other things: mechanically-manipulating a yarn with a circular-knitting machine

to form a cylindrical textile structure, the textile elements located in different portions of the textile structure; removing the textile element(s) from the textile structure; and incorporating the textile element(s) into shirts worn by men, women, and children. (Ex. 1007, Abstract; 1:35-2:21; 2:42-52; 3:34-5:44; 6:35-58; 7:1-9; 7:23-25; 8:17-19; FIGS. 1, 2A, 2-5; Ex. 1003, ¶145, 148-149, 155-156, 162.)

By way of background, Castello recognized early the benefits of being able to use wide-tube circular knitting machines to produce a web containing textiles with complex stitch configurations, which were removed from the web and incorporated into finished garments. (Ex. 1003, ¶148.) Castello explains that the process of producing textile elements, such as collars, having a variety of features like knitted folding creases, knitted sewing marks, mock fashion marks and Jacquard multi-color designs had to be created independently on one or more slow producing flat machines. With the advent of single needle selection that can be controlled with programmable patterns, all of those features could then be combined on a single circular machine and knit simultaneously. (Ex. 1007, 1:39-53; 2:12-21; 3:35-44; Ex. 1003, ¶148.)

**2. Fujiwara (Ex. 1008)**

Fujiwara (Ex. 1008) issued on December 18, 2001, before the March 3, 2004 earliest possible priority date claimed by the '598 patent. Fujiwara thus is prior art under 35 U.S.C. § 102(b). Fujiwara was not cited during prosecution of the '598 patent and explicitly describes features of claims 1-13 of the '598 patent.



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Fujiwara describes a method of manufacturing a textile element, which includes, among other things: mechanically-manipulating a yarn with a circular-knitting machine to form a cylindrical textile structure, the textile elements located in different portions of the textile structure; removing the textile element(s) from the textile structure; and incorporating the textile element(s) into garments worn by men, women, and children. (Ex. 1008, 1:58-3:18; 3:45-48; 3:59-5:11; 5:42-6:62; 7:25-37; FIGS. 1, 4, 6, 7; Ex. 1003, ¶146, 150, 157-158, 163.)

### 3. Nishida (Ex. 1009)

Nishida is described in Section VII.A.2 above. (Ex. 1003, ¶147, 151, 159-161, 164.)

### 4. The Combination of Castello, Fujiwara, and Nishida

Castello's explicit statement that "[b]y employing the method of the present invention, all of these features can be combined if so desired and knit simultaneously on one circular knitting machine (not illustrated) such as a TJI or Links & Links machine to thereby far outproduce any existing flat machine" and that "the method of the present invention also eliminates the need for patterns for use when cutting inasmuch as knitting cutting guide lines 20 are knit directly into the tubular knitted cloth 10 during the knitting operation" would have suggested to a person of ordinary skill in the relevant art at least as of March 3, 2004 that Castello recognized early the benefits of being able to use wide-tube circular knitting machines to produce a web containing textiles with complex stitch configurations, which are removed from the



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web and incorporated into finished garments. (Ex. 1003, ¶201.) Thus, Castello's process could be used with any circular knitting process where the knitted textile element includes a variety of textile features and or where the knitted textile element is removed from a larger knitted textile structure. (Ex. 1003, ¶201.)

With this understanding, the skilled person would have been motivated to modify Castello's process to incorporate additional computerized advances in independent needle selection with a double layer circular knitting machine, such as the type described in Fujiwara, for independent needle selection at both the dial and cylinder needles as a way to increase the options for combining even more features simultaneously in a knitted textile element. (Ex. 1003, ¶201.) Furthermore, the skilled person would have been motivated to use Castello's process to produce textile elements for all types of clothing, including forming textile elements to be incorporated into footwear as described in Nishida. (Ex. 1003, ¶201.)

The skilled person would have found Nishida's process of manufacturing textile elements to be analogous art to Castello's and Fujiwara's processes, as all three processes are directed to methods of simultaneously forming textile elements within a surrounding textile structure using programmable and/or computerized single needle selection technology, removing the textile elements, and incorporating the textile elements into a wearable item. (Ex. 1003, ¶202.)

Additionally, Castello, Fujiwara, and Nishida are directed to reducing costs associated with producing textile elements using the latest advances in knitting



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technology of the time of each reference. (Ex. 1003, ¶203-205.) Castello's method provides that "[t]he present invention resides in a novel method of fabricating knitted collars on circular knitting machines which results in a far greater production capability at resulting cost savings over that presently possible on flat machines." (Ex. 1003, ¶203.) Fujiwara also identifies that "sewing is a bottleneck from the view point of increase in an production efficiency as well as of decrease in a production cost" such that "there has heretofore been a strong requirement as to a development in a garment making by which any sewing is not necessary." (Ex. 1003, ¶204.)

Nishida likewise states that a "process is used by which such shoe uppers can be produced in a timesaving and efficient manner" with "only a small number of individual parts that have to be produced separately and applied to the upper later" over conventional methods that generate expensive cutting waste. (Ex. 1003, ¶205.) The POSA would have found that Castello, Nishida, and Fujiwara are directed to solving a similar problem: expensive and time consuming production of textile components. (Ex. 1003, ¶205.)

In view of the substantial similarities between the methods described in Castello, Fujiwara, and Nishida and the specifics of the various stitch configurations for the interknitted outline M in Fujiwara, a person of ordinary skill in the relevant art would certainly have been motivated to modify Castello's method to include the additional features described by Fujiwara and Nishida to produce a textile element for use in a shoe upper, as well as to produce a shoe incorporating such a textile element,



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as this is nothing more than combining "prior art elements according to known methods to yield predictable results" and/or the "[u]se of known technique[s] to improve similar devices (methods, or products) in the same way." *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417-22 (2007); MPEP § 2143 (A, C); Ex. 1003, ¶206-207. This is particularly the case where "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. at 421.

### 5. Claim-by-Claim Analysis

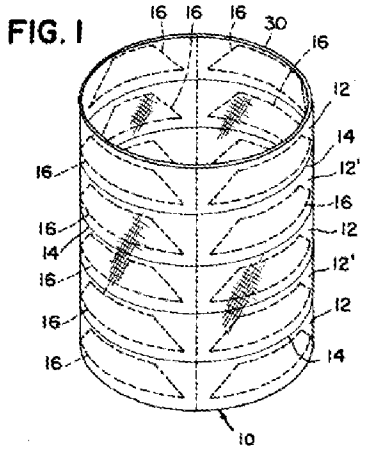
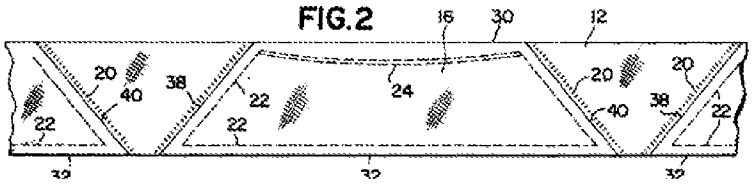
#### i. Independent Claim 1

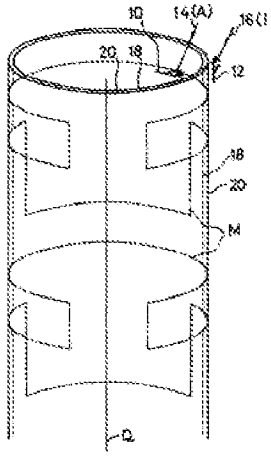
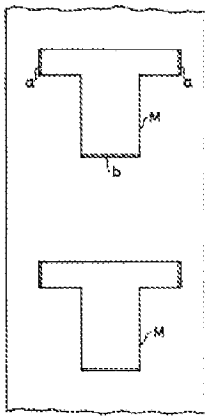
The chart below shows how Castello, Fujiwara, and Nishida disclose all of the limitations of claim 1, and thus render claim 1 obvious. (Ex. 1003, ¶145-147, 149-151, 155, 157, 159-160, 162-164, 193.)

| CLAIM | GROUND 2 |
|---|---|
| [1A] A method of manufacturing an article of footwear, the method comprising steps of: | "The present invention resides in a novel method of fabricating knitted collars on circular knitting machines . . . ." **Castello**, 1:39-40; *see also* Abstract; 1:35-2:4; 3:34-4:10; 4:22-5:44; 6:35-58; 7:1-5; FIGS. 1, 2A, 2-5.<br><br>"FIG. 1 illustrates schematically a formation of a circular knitted fabric as a first embodiment of the present invention, from which fabric a garment such as a sweater is obtained without necessitating any subsequent sewing process." **Fujiwara,** 3:45-48; *see also* 1:58-3:18; 3:59-4:65.<br><br>***See* Section VII.A.4.i, claim 1A regarding Nishida.** |
| [1B] mechanically-manipulating a yarn with a circular-knitting machine to | "In utilizing the method of the present invention, circular machines having either Jacquard cards, or pattern wheels or drums or any other known suitable mechanical means of needle selection can be used. For purposes of illustration, a Jacquard type machine with cards, such as a TJI or Links and Links machine will be described." **Castello**, 1:43-49. |



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| CLAIM | GROUND 2 |
|---|---|
| form a cylindrical textile structure; | "After a suitable sketch has been prepared on the graph paper showing the desired collar shape, design, color, mock fashion marks, etc., knitting machine cards (or some equivalent system) are then punched or otherwise prepared in conventional manner and set up on the machine to thereby automatically control the machine stitches to knit the tubular cloth 10 with the layers 12, 12', the separating threads 14 and the collar construction 16 knitted therein." **Castello**, 3:59-67; *see also* 3:34-45; 3:68-4:55; 5:18-44; FIGS. 1, 2 (reproduced at right and below).     "The method of the present invention also eliminates the need for patterns for use when cutting inasmuch as ***knitting cutting guide lines 20 are knit directly into the tubular knitted cloth 10 during the knitting operation***." **Castello**, 4:39-42 (emphasis added). A knitted, indented, circular or straight fold ***crease mark 24 can be knit directly into the tubular cloth 10 during the knitting operation***. **Castello**, 4:53-55.<br><br>"In other words, it is desirable that the circular knitting machine is the one that, at each thread feeding position, is provided with a computer controlled pattern control mechanism. Namely, for practicing the present invention, it is desirable that the circular knitting machine is of a so-called double knitting type by which an independent needle selection control is obtained at each thread feeder not only for the cylinder needles but also for the dial needles. Such a type of a circular knitting machine is, for example, available from Fukuhara Industrial Trading Co., Ltd., Osaka, Japan |

| CLAIM | GROUND 2 |
|---|---|
| | under the trade name of V-LEC4D." **Fujiwara**, 4:12-21.<br><br>"According to the present invention, the circular knitted fabric is constructed by an inner and outer layers, which are separate with each other and which are knitted by the dial and cylinder needles, respectively. The inner and outer layers are, along an outline of an article or a garment, connected with each other by using a stitching construction using both of the dial and cylinder needles." **Fujiwara**, 2:31-37; *see also* 1:58-3:18; 4:66-5:7; FIGS. 1, 4 (reproduced below); FIGS. 6, 7.<br><br>Fig. 1<br>  <br><br>Fig. 4<br>  <br><br><br>"The ***progress of the knitting causes a circular knitted fabric*** of a substantially hose shape ***to be produced, which has closed stitched lines M as repeated patterns in the continuous length of the fabric***." **Fujiwara**, 6:12-15 (emphasis added).<br><br>***See* Section VII.A.4.i, claim 1B regarding Nishida.** |
| [1C] removing at least one textile element from the textile structure; and | "After the tubular cloth 10 has been knit by the machine (not shown), the draw threads 14 are pulled to separate the cloth into a plurality of individual layers 12, 12'. The layers are then cut along the knitted cut guide lines 20 to produce a plurality of individual collars 16, each having cut sides 38, 40." **Castello**, 3:67-4:4; *see also* 4:38-45; 4:67-5:17.<br><br>"As a result, when the fabric is cut outwardly along the outline while the stitched parts are at least partially left, a garment can be obtained, which has a front and back bodies, which are connected along the outline M." **Fujiwara**, 5:7-11; *see also* 1:58-3:18; 6:12-42; 7:21-37. |

| CLAIM | GROUND 2 |
|---|---|
| | ***See* Section VII.A.4.i, claim 1C regarding Nishida.** |
| [1D] incorporating the textile element into an upper of the article of footwear. | ***See* Section VII.A.4.i, claim 1D.** |

### ii. Dependent Claim 2

Dependent claim 2 recites "utilizing a wide-tube circular knitting machine." Castello states "[r]eferring again to FIG. 5, I show a sketch which may be employed in conjunction with an ***eight-cut*** L.H. circular machine having 64 levers per automat. Assuming twelve automats, the machine could be programmed to knit three collar constructions 16 per layer 12. In the illustration shown, ***768 needles*** would be employed less approximately 10 needles on each side of the gate on automats one and twelve." (Ex. 1007, 5:18-25 (emphasis added); *see also* Abstract; 1:35-53; 1:47-64; 3:34-39; 4:23-38. (Ex. 1003, ¶152.)

As Mr. Holden explains, the skilled person at least as of March 3, 2004, would have understood how to calculate the diameter of the L.H. circular knitting machine based on the explicit information provided by Castello. (Ex. 1003, ¶153.) Hence, the skilled person would have understood from Castello's description that the L.H. circular knitting machine has eight needles per inch (according to the meaning of eight-cut) and 768 needles total around the circumference, thus resulting in a total

circumference of 96 inches (calculated by dividing the total needles by the needles per inch). (Ex. 1003, ¶153.) Since diameter is equal to the circumference divided by π, the nominal diameter is equal to 30.55 inches. (Ex. 1003, ¶153.) The skilled person would also have understood that a circular knitting machine having a nominal diameter of 30.55 inches is a wide-tube circular knitting machine. (Ex. 1003, ¶153.) Therefore, skilled persons would thus have recognized that wide-tube circular knitting machines were used to make Castello's collars and would understand that the L.H. circular knitting machine was one such example. (Ex. 1003, ¶153.)

The chart below shows how Castello discloses this feature of claim 2, and thus renders claim 2 obvious. (Ex. 1003, ¶152-153.)

| CLAIM | GROUND 2 |
|---|---|
| [2] The method recited in claim 1, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine. | "Referring again to FIG. 5, I show a sketch which may be employed in conjunction with an ***eight-cut*** L.H. circular machine having 64 levers per automat. Assuming twelve automats, the machine could be programmed to knit three collar constructions 16 per layer 12. In the illustration shown, ***768 needles*** would be employed less approximately 10 needles on each side of the gate on automats one and twelve." **Castello**, 5:18-25 (emphasis added); *see also* Abstract; 1:35-53; 1:47-64; 3:34-39; 4:23-38. |

### iii. Dependent Claim 3

Dependent claim 3 recites "forming a texture in the cylindrical textile structure with a shape of the textile element." The chart below shows how Castello, Fujiwara, and Nishida disclose the features of claim 3, and thus render claim 3 obvious. (Ex. 1003, ¶174-176.)



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| CLAIM | GROUND 2 |
|---|---|
| [3] The method recited in claim 1, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element. | "The method of the present invention also eliminates the need for patterns for use when cutting inasmuch as knitting cutting guide lines 20 are knit directly into the tubular knitted cloth 10 during the knitting operation. The only cutting required is along the sides 38, 40 of the collar which have the cutting guide lines 20 already knit directly in the fabric. Mock fashion marks 22 can be knit along the sides 38, 40 and the bottom edge 32' of the collar in any desired design or pattern by employing conventional knitting procedures. The bottom edge 32' of the collar need not be additionally sewn inasmuch as this is a knitted finished edge which remains after pulling the draw thread 14 and so requires no additional operations." **Castello**, 4:38-52; *see also* 1:68; 2:45-50; 3:50-58; 4:2-4; 4:11-12; 4:22-33; 4:67-5:17; 5:35-44; FIG. 5.<br><br>"In FIG. 1, a closed phantom line M indicates, in a very schematic manner, an outline of a sweater as a garment wherein one of the inner and outer layers 18 and 20 becomes one side (front body) of the sweater while the other of the inner and outer layers 18 and 20 becomes the other side (back body) of the sweater. Along the outline M of a necessary width, the inner and outer tubular layers 18 and 20 are connected or stitched with each other, so that the both of the layers 18 and 20 are integrated." **Fujiwara**, 4:66-5:7. "The stitching between the inner and outer layers along the outline M is obtained by knitting by using both of the dial needles 10 and the cylinder needles 12." **Fujiwara**, 5:11-13; *see also* 2:34-37; 3:62-4:5; 5:20-41; 6:12-22; 7:21-32; FIGS. 1, 4, 6, 7.<br><br>***See* Section VII.A.4.iii, claim 3 regarding Nishida.** |

### iv. Independent Claim 9

As discussed in Section VII.A.4.iv above, independent claim 9 is substantially similar to the combination of claims 1, 2, and 3. The chart below shows how Castello, Fujiwara, and Nishida disclose the features of claim 9, and thus render claim 9 obvious. (Ex. 1003, ¶145-147, 149-153, 155, 157, 159-160, 162-164, 174-176, 193.)

| CLAIM | GROUND 2 |
|---|---|
| [9A] A method of manufacturing an article of footwear, the method comprising the steps of: | ***See* Section VII.B.5.i, claim 1A.** |
| [9B] mechanically-manipulating a yarn with a wide-tube circular knitting machine to form a textile structure having an outline of at least one textile element; | ***See* Sections VII.B.5.i, claim 1B, VII.B.5.ii, claim 2, and VII.B.5.iii, claim 3.** |
| [9C] removing the textile element from the textile structure; | ***See* Section VII.B.5.i, claim 1C.** |
| [9D] incorporating the textile element into an upper of the article of footwear. | ***See* Section VII.B.5.i, claim 1D.** |

### v. Dependent Claim 10

Dependent claim 10 recites "forming a texture in the cylindrical textile structure with a shape of the textile element." As discussed in Section VII.B.5.iii above with respect to claim 3, Castello, Fujiwara, and Nishida describe the features of claim 10, and thus render claim 10 obvious. Ex. 1003, ¶174-176.)

### vi. Dependent Claims 4 and 11

Dependent claims 4 and 11 recite "forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the knitted textile element." The chart below shows how



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Castello, Fujiwara, and Nishida disclose the features of claims 4 and 11, and thus render claims 4 and 11 obvious. (Ex. 1003, ¶177-186.)

For example, Castello describes that "as seen in FIG. 5, a graph 18 is first laid out in accordance with practices well known to those skilled in the art to show features such as peripheral knitted cutting guide lines 20, knitted fashion marks 22, knitted neck fold lines 24 and knitted guide marks 26, 28. The guide marks 26, 28 serve as guides to aid sewing machine operators when the collar is being affixed to the remainder of the garment." (Ex. 1007, 3:51-58; FIG. 5; Ex. 1003, ¶177.)

As illustrated in the graph 18 (FIG. 5), the collars 16 may be knitted with "an integral knitted fold crease 24, knitted sewing guide marks 26, 28, mock fashion marks 22 and any desired Jacquard color designs (not illustrated) . . . . ***The fashion marks 22 may be knitted in conventional manner spaced apart in any desired stitch pattern, such as by Jacquard patterns***. The fashion marks 22 may be knit continuously about the periphery of the collar." (Ex. 1007, 4:23-33; FIG. 5; Ex. 1003, ¶178.) "[M]ore or fewer fashion marks 22 can be provided, ***more or fewer collar fold marks 24 (knitted as reversed jersey)*** can be knit, ***more or fewer stripes, various colors, patterns (not illustrated)*** can be programmed into the circular knitting machine." (Ex. 1007, 5:35-44; FIG. 5; Ex. 1003, ¶178.)

Castello also points out that "the top and bottom edges 30, 32 of each layer 12, 12' are finished, knitted edges which remain after separation of the layers by pulling the draw threads 14 and can serve as the top and bottom edges respectively, 30', 32'

of each individual collar 16 without further sewing or other operations." (Ex. 1007, 4:4-10; FIG. 5; Ex. 1003, ¶179.)

Castello goes on to explain that the "circular neck fold line 24 of jersey stitches . . . create[s] a collar that lays naturally on the back of the neck without 'hiking' up or down to thereby enhance the beauty and utility of the collar. The fold 24 remains permanent even after washing or dry cleaning inasmuch as it is knitted directly into the fabric and thus reduces pressing costs in the finished garment." (Ex. 1007, 4:53-63; *see also* 1:43-49; 1:54-68; 2:12-21; 2:42-52; 3:34-58; 4:34-5:7; 5:13-17; FIG. 5; Ex. 1003, ¶180.)

These different stitch configurations around the collar 16 are illustrated in guide 18 (FIG. 5), wherein the X·X·X·X pattern at the bottom of the collar 16 showing the finished edge 32 and the spaced apart X X X X pattern along the sides showing the cut line 20 indicate stitch configurations in those regions that are different from each other, as well as from the fashion marks 22 and the fold line 24. (Ex. 1007, FIG. 5; Ex. 1003, ¶181.) Therefore, within the collar 16, there are at least four different stitch configurations forming a plurality of different textures. (Ex. 1003, ¶181.)

As described in Section VII.B.5.i above, Fujiwara describes that the outline M of the garment is formed with interknitted stitches (as shown in FIGS. 3A and 3B), and that these interknitted stitches may be a jacquard, birds eye, eyelet, circular rib, or interlock stitch configuration. (Ex. 1008, 5:57-6:7; 7:21-24; Ex. 1003, ¶182.) In

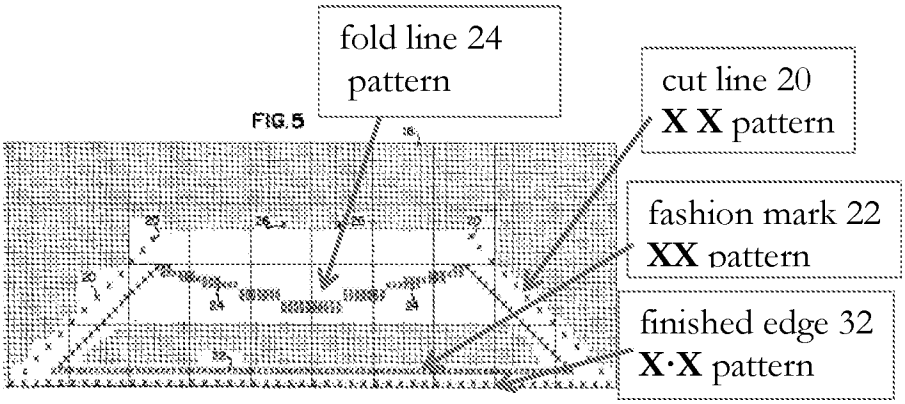


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contrast, Fujiwara states that the non-interknitted portions of each layer 18, 20 comprises a plain stitch configuration. (Ex. 1008, 5:42-56; Ex. 1003, ¶182.) Because the interknitted stitches are part of the garment, and the garment also comprises areas that are only formed as part of the inner tubular layer 18 or the outer tubular layer 20, the garment has a plurality of different knitted textures formed by varying at least one of the stitch type and the yarn type. (Ex. 1003, ¶182.)

As discussed in Section VII.A.4.vi with respect to claims 4 and 11, Nishida describes the features of claims 4 and 11, and thus renders claims 4 and 11 obvious. (Ex. 1003, ¶183-186.)

| CLAIM | GROUND 2 |
|---|---|
| [4] The method recited in claim 1, wherein the step of mechanically manipulating includes forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch | "[A]s seen in FIG. 5, a graph 18 is first laid out in accordance with practices well known to those skilled in the art to show features such as peripheral knitted cutting guide lines 20, knitted fashion marks 22, knitted neck fold lines 24 and knitted guide marks 26, 28. The guide marks 26, 28 serve as guides to aid sewing machine operators when the collar is being affixed to the remainder of the garment." **Castello**, 3:51-58; FIG. 5.<br><br>"[A] collar construction 16 can be produced on a single circular knitting machine having an integral knitted fold crease 24, knitted sewing guide marks 26, 28, mock fashion marks 22 and any desired Jacquard color designs (not illustrated) . . . . ***The fashion marks 22 may be knitted in conventional manner spaced apart in any desired stitch pattern, such as by Jacquard patterns***. The fashion marks 22 may be knit continuously about the periphery of the collar." **Castello**, 4:23-33 (emphasis added); FIG. 5. "[M]ore or fewer fashion marks 22 can be provided, ***more or fewer collar fold marks 24 (knitted as reversed jersey)*** can be knit, ***more or fewer stripes, various colors, patterns (not illustrated)*** can be programmed into the circular knitting machine." **Castello**, 5:35-44 (emphasis added); FIG. 5. |

| CLAIM | GROUND 2 |
|---|---|
| configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element. | "[T]he top and bottom edges 30, 32 of each layer 12, 12' are finished, knitted edges which remain after separation of the layers by pulling the draw threads 14 and can serve as the top and bottom edges respectively, 30', 32' of each individual collar 16 without further sewing or other operations." **Castello**, 4:4-10; FIG. 5.<br><br>"[C]ircular neck fold line 24 of jersey stitches . . . create[s] a collar that lays naturally on the back of the neck without 'hiking' up or down to thereby enhance the beauty and utility of the collar. The fold 24 remains permanent even after washing or dry cleaning inasmuch as it is knitted directly into the fabric and thus reduces pressing costs in the finished garment." **Castello**, 4:53-63; *see also* 1:43-49; 1:54-68; 2:12-21; 2:42-52; 3:34-58; 4:34-5:7; 5:13-17.<br><br>  <br><br>***See* Section VII.B.5.i, claim 1B regarding Fujiwara;**<br>***See* Section VII.A.4.vi, claim 4 regarding Nishida.** |

### vii. Dependent Claim 5

The chart below shows how Reed and Nishida disclose the feature of claim 5, and thus render claim 5 obvious. (Ex. 1003, ¶156, 158-159, 161.)

| CLAIM | GROUND 2 |
|---|---|
| [5] The method recited in claim 1, wherein the step of mechanically manipulating | "The tubular fabric is designed to produce a plurality of vertically juxtaposed layers, each having a height equal to the height of the collar being produced. A ***plurality of collars***, for example, four are knitted in each layer." **Castello**, 1:59-63; *see also* 1:65-68; 3:34-49; 3:59-4:4; FIGS. 1, 2A. |

| | |
|---|---|
| includes forming at least two textile elements in the cylindrical textile structure. | "The progress of the knitting causes a circular knitted fabric of a substantially hose shape to be produced, which has closed stitched lines M as ***repeated patterns*** in the continuous length of the fabric. The fabric is cut along the longitudinal cut line Q in FIG. 1. As a result, a continuous length of a fabric having closed stitched lines M as ***repeated patterns*** as shown in FIG. 4 is obtained. Then, the fabric is subjected to a cutting along the stitching line M, while the stitched parts are at least partly remained." **Fujiwara**, 6:12-20 (emphasis added); FIGS. 1, 4, 6, 7.<br><br>***See* Section VII.A.4.vii, claim 5 regarding Nishida.** |

### viii. Dependent Claim 6

Dependent claim 6 recites "forming apertures in the textile element." The chart below shows how Castello, Fujiwara, and Nishida disclose the feature of claim 6, and thus render claim 6 obvious. (Ex. 1003, ¶194-200.)

As discussed in Section VII.A.4.viii above, the '598 patent describes "apertures" in one of three ways: (1) as an ankle opening (Ex. 1001, 6:24-25); (2) as openings formed by omitting stitches within the textile element in specific locations to facilitate air transfer through the upper (Ex. 1001, 9:46-53); and (3) as openings formed by omitting stitches within the textile element in specific locations as lace holes (Ex. 1001, 10:15-18). (Ex. 1003, ¶194.)

As discussed in Section VII.A.4.viii above, Nishida discloses forming each of these types of "apertures" in the textile element. (Ex. 1009, 3:43-52; 3:66-4:5; 4:31-38; 6:25-31; FIGS. 1-5; Holden Decl. (Ex. 1003), ¶195-197.)

Furthermore, Fujiwara describes forming apertures by omitting stitches at specific locations, such as is described by the '598 patent as the mechanism for

forming the "air permeability" and the "lace hole" apertures. (Ex. 1003, ¶198.) For example, Fujiwara suggests that the interknitted stitches that form the outline M of the textile element may be formed with a birds eye or eyelet stitching. (Ex. 1008, 5:65-6:11; 6:43-62; 7:21-24; Holden Decl. (Ex. 1003), ¶198.)

As Mr. Holden explains, a skilled person at least as of March 3, 2004 would have understood that a birds eye stitch configuration includes float stitches, which leave yarn floating freely on the reverse side of the held loop, thereby resulting in an aperture formed by omitting stitches in each location where a float stitch is applied. The configuration of a birds eye stitch is explained in Spencer. (Ex. 1003, ¶199-200.)

| CLAIM | GROUND 2 |
|---|---|
| [6] The method recited in claim 1, wherein the step of mechanically manipulating includes forming apertures in the textile element. | "FIGS. 3A and 3B illustrate schematically in a course direction knitting diagrams at yarn feeders in groups A and B, respectively at the stitched part of the fabric. At the yarn feeder in the group A, the yarn 14 is subjected to a knitting by both of the dial and cylinder needles 10 and 12, so that the inner and outer layers 18 and 20 are integrated. In the example shown in FIG. 3A, the ***integrated fabric*** is of a so-called rib stitch in a rib stitch arrangement between the dial and cylinder needles 10 and 12. However, in a jacquard arrangement (not shown) of the dial and cylinder needles 10 and 12, ***it is possible that another desired stitching, such as birds eye, eyelet,*** circular rib or interlock ***may be employed***. In the similar way, at the yarn feeder in the group B in FIG. 3B, the yarn 16 is subjected to a knitting by both of the dial and cylinder needles 10 and 12, so that the inner and outer layers 18 and 20 are integrated. Similarly***, any of stitching such as bird's eye, eyelet***, circular rib or interlock ***may also be employed***." **Fujiwara**, 5:57-6:7 (emphasis added); FIGS. 3A, 3B; *see also* 6:43-62; 7:21-24.<br><br>**See Section VII.A.4.viii, claim 6 regarding Nishida.** |

### ix. Dependent Claims 7 and 12

*See* Section VII.A.4.ix above. (Ex. 1003, ¶190-191.)

### x. Dependent Claims 8 and 13

*See* Section VII.A.4.x above. (Ex. 1003, ¶192.)

## VIII. EVEN IF CONSIDERED, SECONDARY CONSIDERATIONS FAIL TO OVERCOME THE EVIDENCE OF OBVIOUSNESS.

The Board has repeatedly held that, at the institution phase, evidence of secondary considerations presented by the Patent Owner should be addressed in a trial where the parties may develop, and the Board may consider, a full record. *See, e.g., 10X Genomics Inc. v. Univ. of Chicago*, IPR2015–01162, Paper No. 14 at 22 (PTAB Nov. 16, 2015); *Petroleum Geo-Servs. Inc. v. WesternGeco LLC*, IPR2014-01477, Paper No. 18 at 32 (PTAB Mar. 17, 2015); *Crocs Inc. v. Polliwalks Inc.*, IPR2014-00424, Paper No. 8 at 16, 2014 WL 4181938, at *9 (PTAB Aug. 20, 2014) ("We reiterate ... that such secondary considerations are better considered in the context of a trial when the ultimate determination of obviousness is made."). That is the appropriate course here given that "the inventions represent[ ] no more than 'the predictable use of prior art elements according to their established functions,'" and, thus any "secondary considerations are inadequate to establish nonobviousness as a matter of law." *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010) (quoting *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007)).



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Petitioner nonetheless preliminarily addresses alleged secondary considerations that Patent Owner may argue, but reserves the right to respond to any arguments asserted by the Patent Owner in this proceeding. Specifically, in connection with a prior review of the related '011 patent, Patent Owner argued that a proposed amended claim 47 satisfied a long felt need for reducing waste because it claimed a textile element with "flat knit edges" that were not cut or removed from surrounding textile structure. *See Nike, Inc. v. adidas AG*, CA No. 14-1719, slip op. at 19 & 32-33 (Fed. Cir. Feb. 11, 2016).

"For objective [evidence of secondary considerations] to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention." *Wyers*, 616 F.3d at 1246 (quoting *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed.Cir.1995)) (internal quotation marks omitted). Unlike in the proposed amended claim in the '011 patent, there is no claim to a textile element with "flat knit edges" or other claim elements that could, even conceivably, connect the challenged claims to any purported long felt need for reducing cutting waste in the '598 patent. That is a critical difference because "[w]here the offered secondary consideration actually results from something other than what is both claimed and novel in the claim, there is no nexus to the merits of the claimed invention." *In re Huai-Hung Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011). No such evidence of nexus exists and, to the contrary, the claims here demonstrates that cutting waste will be generated. For example, the '598 patent claims expressly recite removing a textile



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element "from the textile structure," demonstrating excess material will remain and, likewise, describing a feature already present in Nishida. In short, the claims here demonstrate an absence of cost and material savings, rather than satisfaction of any purported long felt need.

## IX. THE PROPOSED REJECTIONS RAISE NEW ISSUES IN WHICH PETITIONER WILL LIKELY PREVAIL.

Patent Owner may urge, incorrectly, that the Board should exercise its discretion under 35 U.S.C. 325(d) to deny institution one or more grounds. Indeed, that was the ground Patent Owner articulated in opposing the petition filed concerning the related '011 patent, during prosecution of which Nishida was cited by the examiner. *adidas AG v. Nike, Inc.*, IPR2013-00067, Paper No. 12, 2013 WL 8595550, at *9 (PTAB May 17, 2013). The Board appropriately rejected that argument, finding Petitioner had "present[ed] different arguments and new supporting evidence that were not before the Examiner." *See id.*, Paper No. 18. Ultimately, the original claims 1-46 challenged in the petition were canceled. *Nike, Inc. v. adidas AG*, 2016 WL 537609, *2 (Fed. Cir. Feb. 11, 2016).

Here, as well, Nishida was cited and discussed by the examiner during original prosecution of the '598 patent, albeit solely in assessing whether Nishida anticipated the claims. But Petitioner has here presented new references, arguments and supporting evidence that were not before the examiner.

As to both Grounds, the examiner did not consider Reed, Castello, or Fujiwara at all, much less the obviousness of combining Reed with Nishida and/or combining Castello and Fujiwara with Nishida, or the rationales and evidence adidas provides the Board. As explained above, Reed, Castello, and Fujiwara disclose the circular and wide-tube circular knitting machines that were limitations added during prosecution to overcome the examiner's reliance on Nishida as anticipating. Likewise, as described, Reed's, Castello's, and Fujiwara's disclosure of multiple other elements would have rendered the claims obvious in view of Nishida's teaching of forming textile elements for articles of footwear.

In view of the foregoing, it is respectfully submitted that there is a reasonable likelihood that Petitioner would prevail with respect to at least one of claims 1-13 challenged in this petition. Accordingly, the Board is requested to grant this petition and to initiate an *inter partes* review, find claims 1-13 unpatentable and cancel these claims, rendering them null, void and otherwise unenforceable.

Respectfully submitted,

By: /s/ Mitchell G. Stockwell
Mitchell G. Stockwell
Registration No. 39,389
Lead Counsel for Petitioner



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## CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.8(e) and 42.105(b), the undersigned certifies that on April 19, 2016, a complete and entire copy of this Petition for *Inter Partes* Review was served via USPS Priority Express Mail, costs prepaid, to the Patent Owner by serving the correspondence address of record as follows:

Banner & Witcoff, LTD.
1100 13th Street, N.W.
Suite 1200
Washington, D.C. 20005-4051

Dated: April 19, 2016

By: /s/ Mitchell G. Stockwell
Mitchell G. Stockwell
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Lead Counsel for Petitioner

PTO/SB/05 (02-07)
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# UTILITY PATENT APPLICATION TRANSMITTAL

*(Only for new nonprovisional applications under 37 CFR 1.53(b))*

| | |
|---|---|
| *Attorney Docket No.* | 005127.01133 |
| *First Inventor* | Bhupesh Dua, et al. |
| *Title* | "An Article of Footwear Having a Textile Upper" |
| *Express Mail Label No.* | |

## APPLICATION ELEMENTS

*See MPEP chapter 600 concerning utility patent application contents.*

1. ☐ **Fee Transmittal Form** (e.g., PTO/SB/17)
   *(Submit an original and a duplicate for fee processing)*
2. ☐ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☒ **Specification** [*Total Pages* 22 ]
   Both the claims and abstract must start on a new page
   *(For information on the preferred arrangement, see MPEP 608.01(a))*
4. ☒ **Drawing(s)** (*35 U.S.C. 113*) [*Total Sheets* 12 ]
5. **Oath or Declaration** [*Total Sheets* ]
   a. ☐ Newly executed (original or copy)
   b. ☐ A copy from a prior application (37 CFR 1.63(d))
   *(for continuation/divisional with Box 18 completed)*
   i. ☐ DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☒ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
   *(if applicable, items a. – c. are required)*
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

*ADDRESS TO:* **Commissioner for Patents**
**P.O. Box 1450**
**Alexandria VA 22313-1450**

## ACCOMPANYING APPLICATION PARTS

9. ☐ **Assignment Papers** (cover sheet & document(s))
   Name of Assignee
10. ☐ **37 CFR 3.73(b) Statement** *(when there is an assignee)* ☐ **Power of Attorney**
11. ☐ **English Translation Document** *(if applicable)*
12. ☐ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of foreign patient documents, publications, & other information
13. ☐ **Preliminary Amendment**
14. ☐ **Return Receipt Postcard** (MPEP 503)
    (*Should be specifically itemized*)
15. ☐ **Certified Copy of Priority Document(s)**
    *(if foreign priority is claimed)*
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ Other:

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☒ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 10/791,289

*Prior application information:* *Examiner* Marie D. Patterson *Art Unit:* 3728

## 19. CORRESPONDENCE ADDRESS

☐ The address associated with Customer Number: 22909 ***OR*** ☐ Correspondence address below

| | | | | | |
|---|---|---|---|---|---|
| Name | | | | | |
| Address | | | | | |
| City | | State | | Zip Code | |
| Country | | Telephone | | Email | |

| | | | | |
|---|---|---|---|---|
| Signature | /Holly L. Bonar/ | Date | February 18, 2008 | |
| Name (Print/Type) | Holly L. Bonar | | Registration No. (Attorney/Agent) | 59,496 |

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

# AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

## CROSS-REFERENCE TO RELATED APPLICATION

**[01]** This U.S. Patent Application is a divisional application of and claims priority to co-pending U.S. Patent Application serial number 10/791,289, which was filed in the U.S. Patent and Trademark Office on March 3, 2004 and was entitled "An Article of Footwear Having a Textile Upper", which is being entirely incorporated herein by reference.

## BACKGROUND OF THE INVENTION

### Field of the Invention

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

### Description of Background Art

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

**[04]** The upper forms a void on the interior of the footwear for receiving the foot. The void has the general shape of the foot, and access to the void is provided by an ankle opening. Accordingly, the upper extends over the instep and toe areas of the foot, along the medial



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and lateral sides of the foot, and around the heel area of the foot. A lacing system is often incorporated into the upper to selectively increase the size of the ankle opening and permit the wearer to modify certain dimensions of the upper, particularly girth, to accommodate feet with varying proportions. In addition, the upper may include a tongue that extends under the lacing system to enhance the comfort of the footwear, and the upper may include a heel counter to limit movement of the heel.

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

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

**[07]** Although the materials selected for the upper vary significantly, textile materials often form at least a portion of the exterior layer and interior layer. A textile may be defined as any manufacture from fibers, filaments, or yarns characterized by flexibility, fineness, and a high ratio of length to thickness. Textiles generally fall into two categories. The



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first category includes textiles produced directly from webs of filaments or fibers by randomly interlocking to construct non-woven fabrics and felts. The second category includes textiles formed through a mechanical manipulation of yarn, thereby producing a woven fabric, for example.

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

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

**[10]** The textiles utilized in footwear uppers generally provide a lightweight, air-permeable structure that is flexible and comfortably receives the foot. In order to impart other



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properties to the footwear, including durability and stretch-resistance, additional materials are commonly combined with the textile, including leather, synthetic leather, or rubber, for example. With regard to durability, U.S. Patent Number 4,447,967 to Zaino discloses an upper formed of a textile material that has a polymer material injected into specific zones to reinforce the zones against abrasion or other forms of wear. Regarding stretch resistance, U.S. Patent Numbers 4,813,158 to Brown and 4,756,098 to Boggia both disclose a substantially inextensible material that is secured to the upper, thereby limiting the degree of stretch in specific portions of the upper.

**[11]** From the perspective of manufacturing, utilizing multiple materials to impart different properties to an article of footwear may be an inefficient practice. For example, the various materials utilized in a conventional upper are not generally obtained from a single supplier. Accordingly, a manufacturing facility must coordinate the receipt of specific quantities of materials with multiple suppliers that may have distinct business practices or may be located in different regions or countries. The various materials may also require additional machinery or different assembly line techniques to cut or otherwise prepare the material for incorporation into the footwear. In addition, incorporating separate materials into an upper may involve a plurality of distinct manufacturing steps requiring multiple individuals. Employing multiple materials, in addition to textiles, may also detract from the breathability of footwear. Leather, synthetic leather, or rubber, for example, are not generally permeable to air. Accordingly, positioning leather, synthetic leather, or rubber on the exterior of the upper may inhibit air flow through the upper, thereby increasing the amount of perspiration, water vapor, and heat trapped within the upper and around the foot.

## SUMMARY OF THE INVENTION

**[12]** The present invention is an upper for an article of footwear, the upper incorporating a textile element formed with a knitting machine, for example. In one aspect of the invention, the textile element has edges that are joined together to define at least a portion of a void for receiving a foot. In another aspect of the invention, the textile element has a first area and a second area of unitary construction. The first area is formed of a first



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stitch configuration, and the second area is formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element. The knitting machine may have a configuration that forms the textile element through either warp knitting or weft knitting.

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

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

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

## DESCRIPTION OF THE DRAWINGS

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

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

**[18]** Figure 2 is a lateral elevational view of the upper.



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**[19]** Figure 3 is a top plan view of the upper.

**[20]** Figure 4 is a rear elevational view of the upper.

**[21]** Figure 5 is a bottom plan view of the upper.

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

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

**[24]** Figure 8 is a plan view of a textile element that forms at least a portion of the upper.

**[25]** Figure 9 is a perspective view of a textile structure that incorporates two of the textile element.

**[26]** Figure 10 is a plan view of another textile element.

**[27]** Figure 11 is a plan view of yet another textile element.

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

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

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

## DETAILED DESCRIPTION OF THE INVENTION

**[31]** The following discussion and accompanying figures disclose an article of footwear 10 and a method of manufacturing footwear 10, or components thereof, in accordance with the present invention. Footwear 10 is depicted in the figures and discussed below as having a configuration that is suitable for athletic activities, particularly running. The



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concepts disclosed with respect to footwear 10 may, however, be applied to footwear styles that are specifically designed for a variety of other athletic activities, including basketball, baseball, football, soccer, walking, and hiking, for example, and may also be applied to various non-athletic footwear styles. Accordingly, one skilled in the relevant art will recognize that the concepts disclosed herein may be applied to a wide range of footwear styles and are not limited to the specific embodiments discussed below and depicted in the figures.

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

**[33]** Sole structure 20 has a generally conventional configuration that includes a midsole 21 and an outsole 22. Midsole 21 is secured to a lower portion of upper 30 and is formed of a polymer foam material, such as ethylvinylacetate or polyurethane. Accordingly, midsole 21 attenuates ground reaction forces and absorbs energy (i.e., provides cushioning) as sole structure 20 impacts the ground. To enhance the force attenuation and energy absorption characteristics of sole structure 20, midsole 21 may incorporate a fluid-filled bladder, as disclosed in U.S. Patent Numbers 4,183,156 and 4,219,945 to Rudy. Alternately or in combination, midsole 21 may incorporate a plurality of discrete, columnar support elements, as disclosed in U.S. Patent Numbers 5,343,639 and 5,353,523 to Kilgore et al. Outsole 22 is secured to a lower surface of midsole 21 and may be formed from carbon black rubber compound to provide a durable, wear-resistant surface for engaging the ground. Outsole 22 may also incorporate a textured lower surface to enhance the traction characteristics of footwear 10. In addition, footwear 10 may include an insole (not depicted), which is a relatively thin, cushioning member



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located within upper 30 and adjacent to a plantar surface of the foot for enhancing the comfort of footwear 10.

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

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

**[36]** Upper 30 is at least partially formed from textile element 40, which forms regions 31-35, and may also include laces or other elements associated with a conventional upper for footwear. Textile element 40 is a single material element that is formed to exhibit a unitary (i.e., one-piece) construction, and textile element 40 is formed or otherwise shaped to extend around the foot. As depicted in Figures 2-7, textile element 40 forms both an exterior surface and an interior surface of upper 30. Textile element 40 may be formed as a part of a larger textile element. Textile element 40 is then removed from the



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larger textile element and various edges of textile element 40 are secured together to form the shape of upper 30. A plurality of seams 51-54 are formed, therefore, when joining the edges of the textile element. Seam 51 extends along the longitudinal length of lower region 34 and is centrally-located with respect to lateral region 31 and medial region 32. Seam 52 is also centrally-located and extends upward along heel region 35. A seam 53 is positioned in a forefoot area of upper 30 and joins a portion of lower region 34 with both of lateral region 31 and medial region 32. In addition, a seam 54 is positioned in a rear area of upper 30 and joins a portion of lower region 34 with heel region 35.

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

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

**[39]** The folding or overlapping of textile element 40 to form seam 51 places edge 42a adjacent to edge 42b, which facilitates the formation of seam 52. With reference to



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Figure 8, an edge 45 forms a generally u-shaped area in textile element 40. Upon the joining of edges 42a and 42b to form seam 52, the u-shaped area becomes an aperture in textile element 40 and effectively forms ankle opening 36. Each of edges 43a-43d and edges 44a-44d are formed from a generally v-shaped area of textile element 40. Accordingly, seams 53 and 54 may be formed by closing the v-shaped areas and securing the various edges together.

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

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

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



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common method of interlooping. Textile element 40 may, therefore, be formed from one of these processes for manufacturing a textile.

**[43]** A variety of mechanical processes have been developed to manufacture a textile. In general, the mechanical processes may be classified as either warp knitting or weft knitting. With regard to warp knitting, various specific sub-types that may be utilized to manufacture a textile include tricot, raschel, and double needle-bar raschel (which further includes jacquard double needle-bar raschel). With regard to weft knitting, various specific sub-types that may be utilized to manufacture a textile include circular knitting and flat knitting. Various types of circular knitting include sock knitting (narrow tube), body garment (seamless or wide tube), and jacquard.

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

**[45]** 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



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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.

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

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

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



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from textile structure 60, seams 51-54 may be formed and textile element 40 may be incorporated into footwear 10.

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

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

**[51]** As discussed above, a yarn that incorporates elastane fibers is suitable for textile element 40. A plurality of other yarns, whether elastic or inelastic, are also suitable for textile element 40. The characteristics of the yarn selected for textile element 40 depend primarily upon the materials that form the various filaments and fibers. Cotton, for



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example, provides a soft hand, natural aesthetics, and biodegradability. Elastane fibers, as discussed above, provide substantial stretch and recoverability. Rayon provides high luster and moisture absorption. Wool also provides high moisture absorption, in addition to insulating properties. Polytetrafluoroethylene coatings may provide a low friction contact between the textile and the skin. Nylon is a durable and abrasion-resistant material with high strength. Finally, polyester is a hydrophobic material that also provides relatively high durability. Accordingly, the materials comprising the yarn may be selected to impart a variety of physical properties to textile element 40, and the physical properties may include, for example, strength, stretch, support, stiffness, recovery, fit, and form.

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

**[53]** Many conventional articles of footwear incorporate uppers with various material elements that each exhibit different properties. For example, a first material element may be smooth, and a second material element may be textured. The first and second material



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elements are then stitched together to form a portion of the conventional upper. Textile element 40' also exhibits smooth and textured areas. In contrast with the conventional upper, however, first texture 46' and second texture 47' are incorporated into a single, unitary element of textile, rather than two separate elements that are stitched or otherwise joined together.

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

**[55]** In addition to varying the stitch types to form textures 46'-47' and 46"-48", the type of yarn utilized in various areas of textile elements 40' and 40" may be changed to impart different properties. As discussed above, yarn may be formed from cotton, wool, elastane, rayon, nylon, and polyester, for example. Each of these yarn types may impart differing properties to the areas corresponding with textures 46'-47' and 46"-48". For



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example, elastane may be utilized to impart stretch, wool may be utilized for insulation, and nylon may be utilized for durability. Accordingly, different yarn types may be utilized to impart different properties. The types of knitting that may be utilized to form different zones with different properties (e.g., yarn characteristics, textures, etc.) may vary significantly to include the various warp knitting and weft knitting processes discussed earlier, such as tricot, raschel, double needle-bar raschel, circular knitting, and flat knitting, for example.

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

**[57]** Another article of footwear 210 is depicted in Figures 13-14 and includes a sole structure 220 and an upper 230. Upper 230 includes a textile element 240 that forms an interior layer. In addition, upper 230 includes an intermediate layer 250 and an exterior layer 260. As discussed in the Background of the Invention section above, the upper of a conventional article of footwear may be formed from multiple material layers that include an exterior layer, a intermediate layer, and an interior layer. The materials forming the



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exterior layer of the upper may be selected based upon the properties of wear-resistance, flexibility, and air-permeability, for example. The intermediate layer of the upper may be formed from a lightweight polymer foam material that provides cushioning and protects the foot from objects that may contact the upper. Similarly, an interior layer of the upper may be formed of a moisture-wicking textile that removes perspiration from the area immediately surrounding the foot.

**[58]** Upper 230 has a configuration that is similar to the configuration of the conventional upper in that various material layers are utilized. In contrast with the conventional upper, however, the interior layer is formed of textile element 240, which is manufactured through the process discussed above. That is, textile element 240 is a single element of textile that forms the interior layer of upper 230. A benefit to utilizing textile element 240 for the interior layer is that textile element 240 includes few seams that may contact the foot. In addition, the stitches utilized at various locations of textile element 240 may modify the texture of the interior surface of upper 230, thereby limiting the degree of slip that occurs between the foot and upper 230 or enhancing the air-permeability of upper 230 in specific locations.

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

**[60]** A variety of knitting processes may be utilized to form textile element 40, as discussed above. As a specific example, a jacquard double needle-bar raschel knitting machine may be utilized to form a flat textile structure, and may also be utilized to form the textile



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

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



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CLAIMS

That which is claimed is:

1. A method of manufacturing an article of footwear, the method comprising steps of:

mechanically-manipulating a yarn with a circular knitting machine to form a cylindrical textile structure;

removing at least one textile element from the textile structure;

incorporating the textile element into an upper of the article of footwear.

2. The method recited in claim 1, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine.

3. The method recited in claim 1, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element.

4. The method recited in claim 1, wherein the step of mechanically manipulating includes forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element.

5. The method recited in claim 1, wherein the step of mechanically manipulating includes forming at least two textile elements in the cylindrical textile structure.

6. The method recited in claim 1, wherein the step of mechanically manipulating includes forming apertures in the textile element.

7. The method recited in claim 1, wherein the step of incorporating includes securing a first pair of edges of the textile element to each other to form a first seam that extends along a lower region of the upper.



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Skechers EX1013-p. 1927
Skechers v Nike

8. The method recited in claim 7, wherein the step of incorporating further includes securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper.

9. A method of manufacturing an article of footwear, the method comprising steps of:

mechanically-manipulating a yarn with a knitting machine to form a textile structure having an outline of at least one textile element;

removing the textile element from the textile structure;

incorporating the textile element into an upper of the article of footwear.

10. The method recited in claim 9, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine.

11. The method recited in claim 10, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element.

12. The method recited in claim 9, wherein the step of mechanically-manipulating includes utilizing a jacquard double needle-bar raschel knitting machine.

13. The method recited in claim 9, wherein the step of mechanically manipulating includes forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element.

14. The method recited in claim 9, wherein the step of incorporating includes securing a first pair of edges of the textile element to each other to form a first seam that extends along a lower region of the upper.



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Skechers EX1013-p. 1928
Skechers v Nike

15. The method recited in claim 9, wherein the step of incorporating further includes securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper.



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Skechers EX1013-p. 1929
Skechers v Nike

# AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

ABSTRACT OF THE DISCLOSURE

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



Petitioner adidas AG - Exhibit 1002 - Page 23 of 346
Skechers EX1013-p. 1930
Skechers v Nike

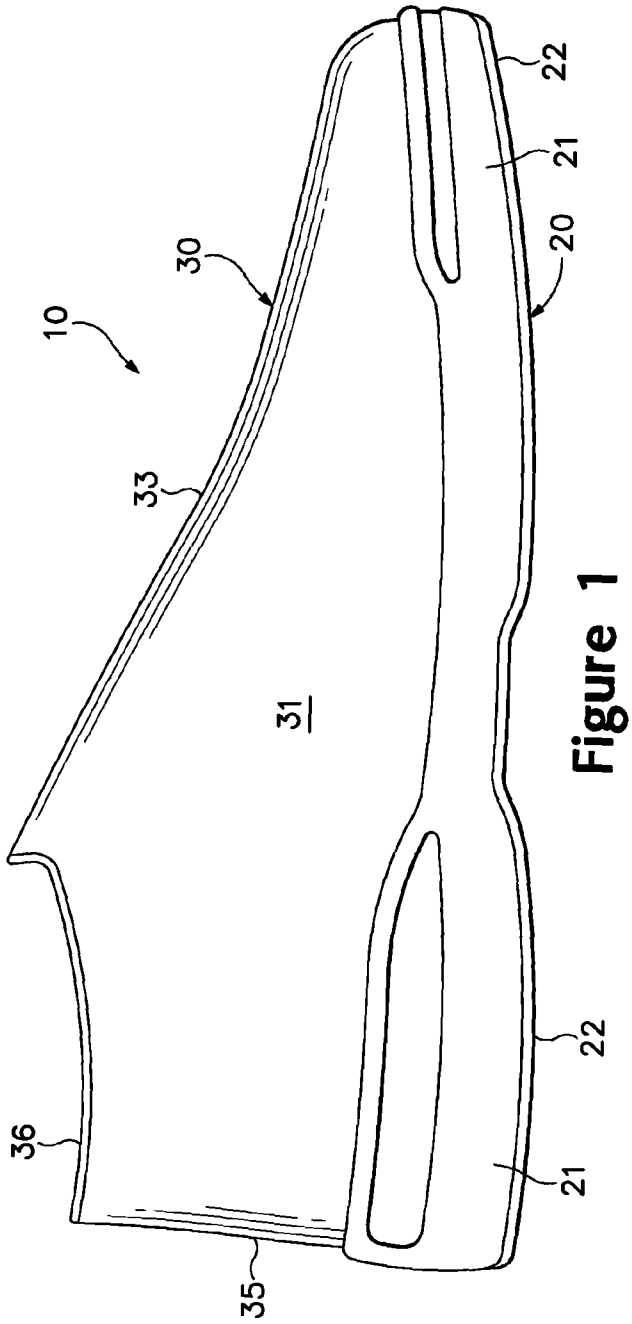



Figure 1

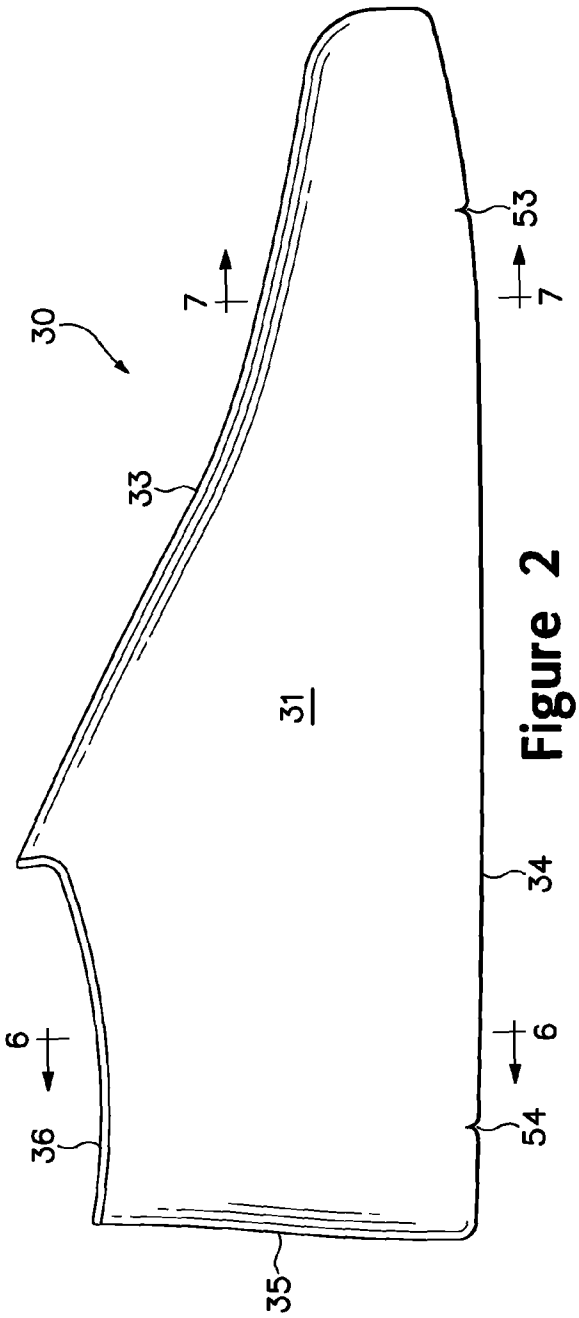



Figure 2

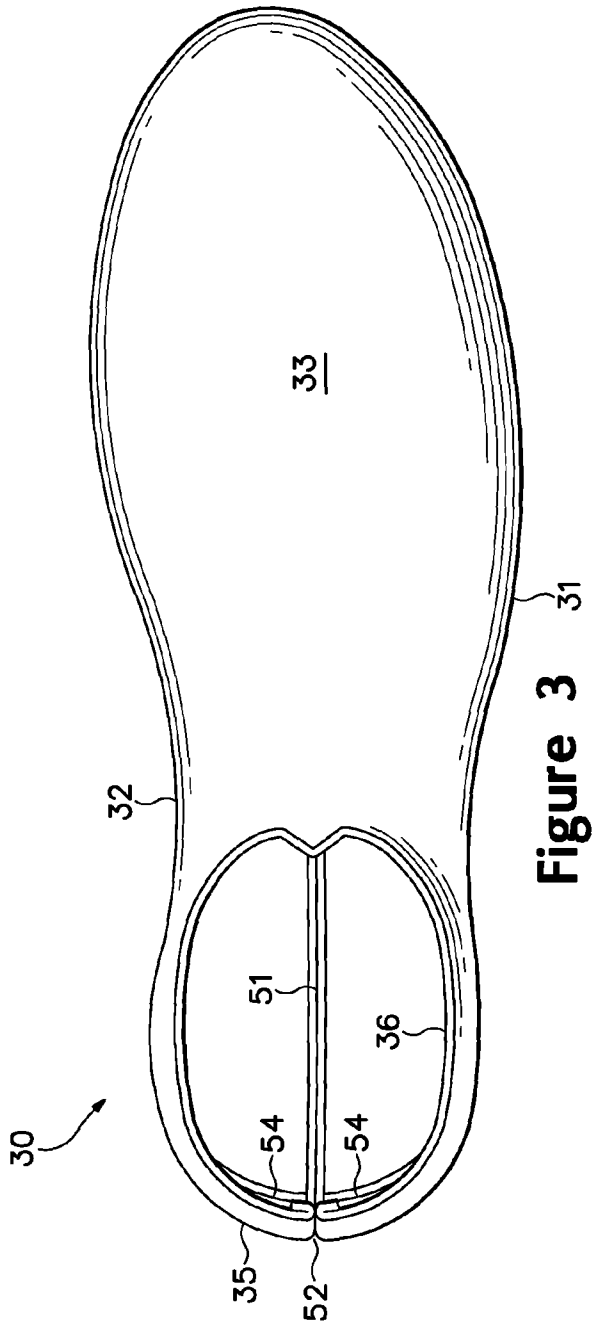



Figure 3

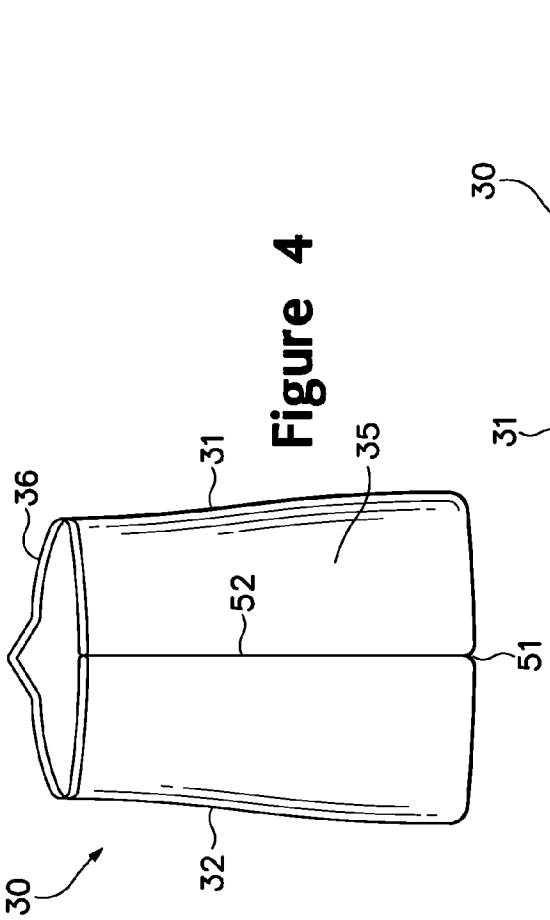



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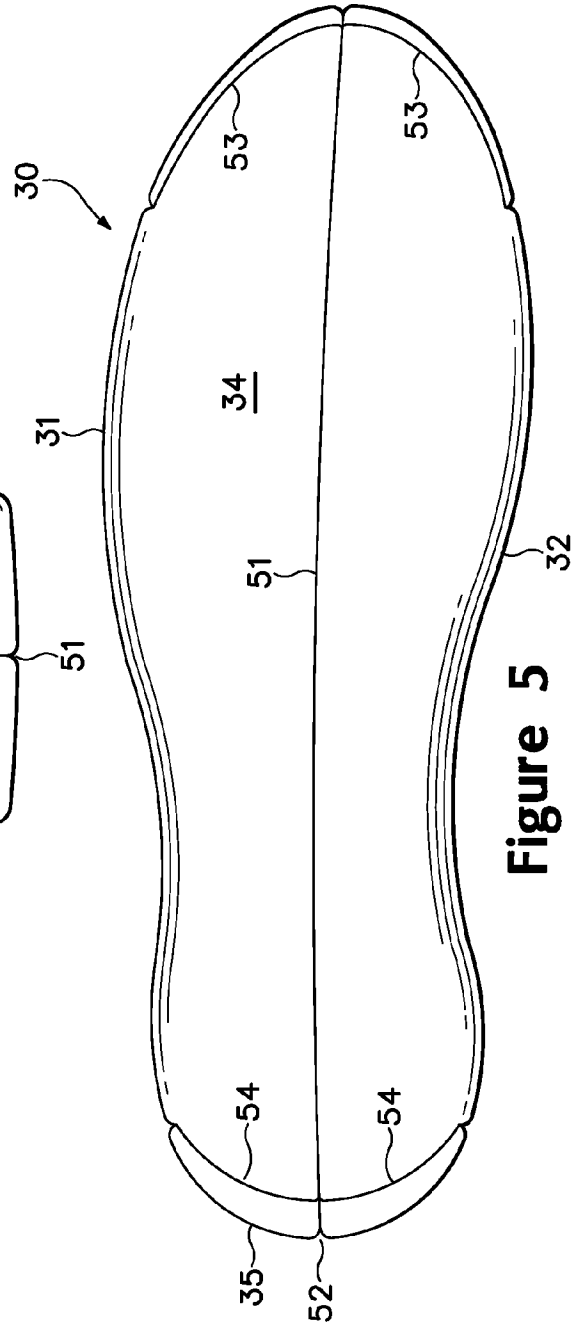



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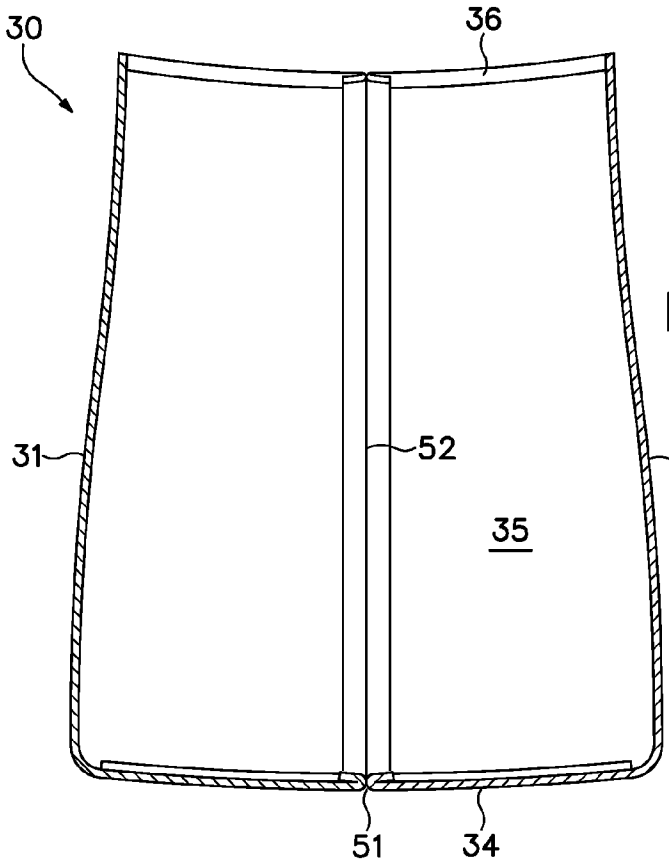



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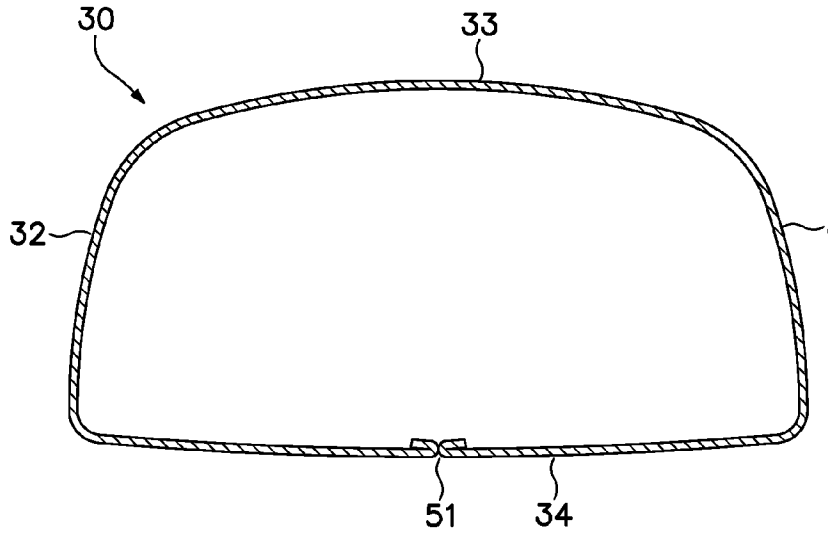



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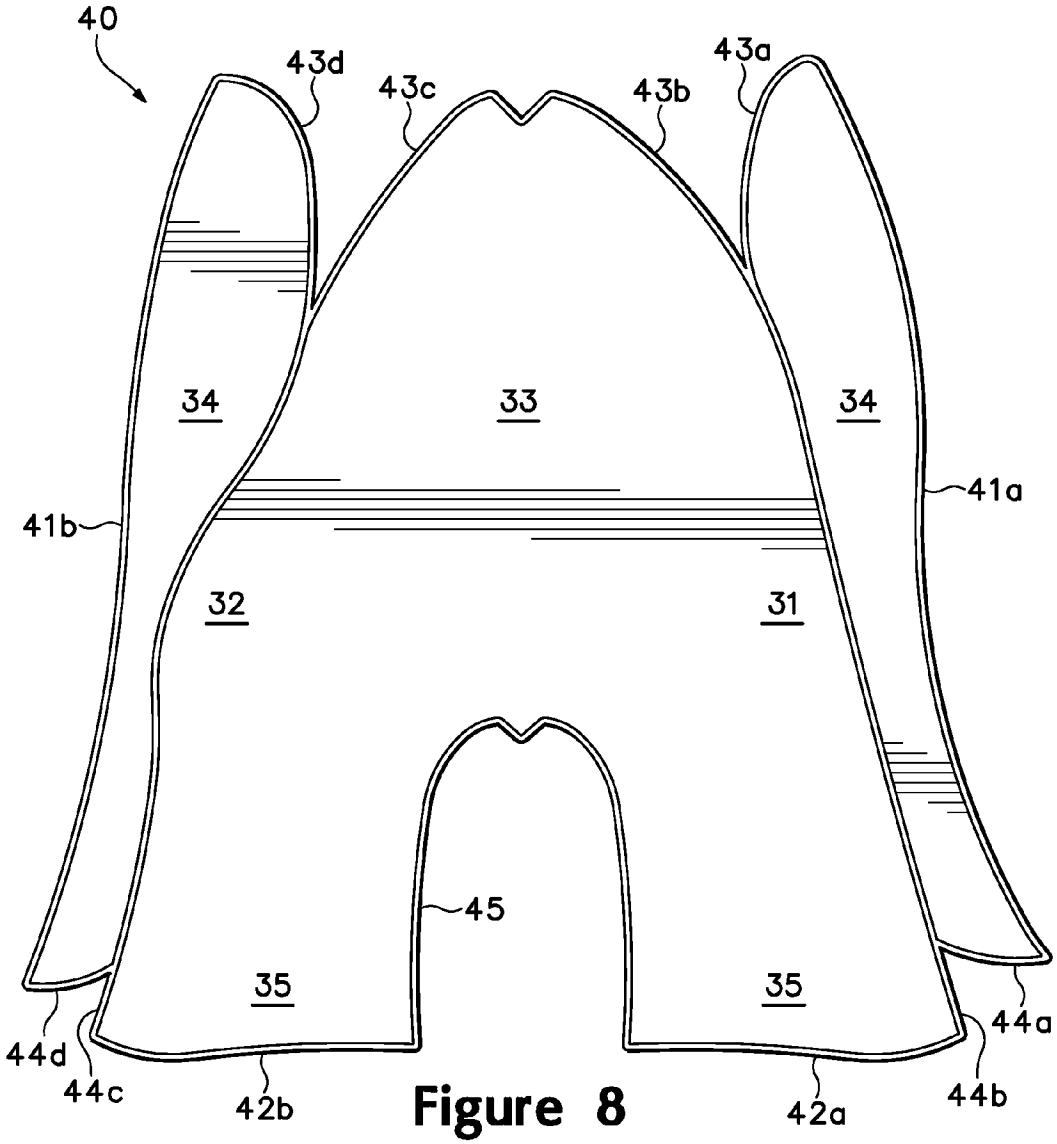

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**Figure 8**

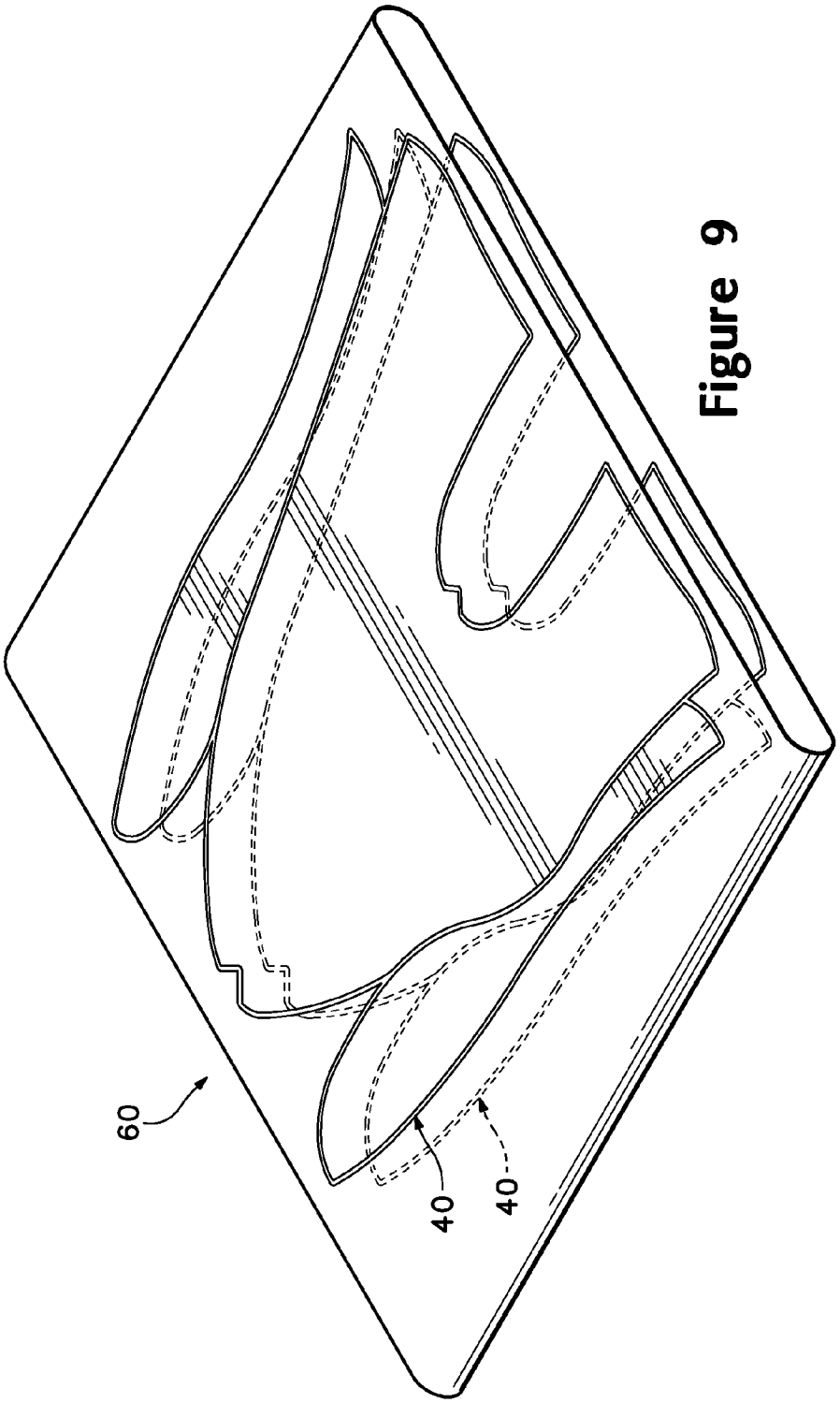



Figure 9

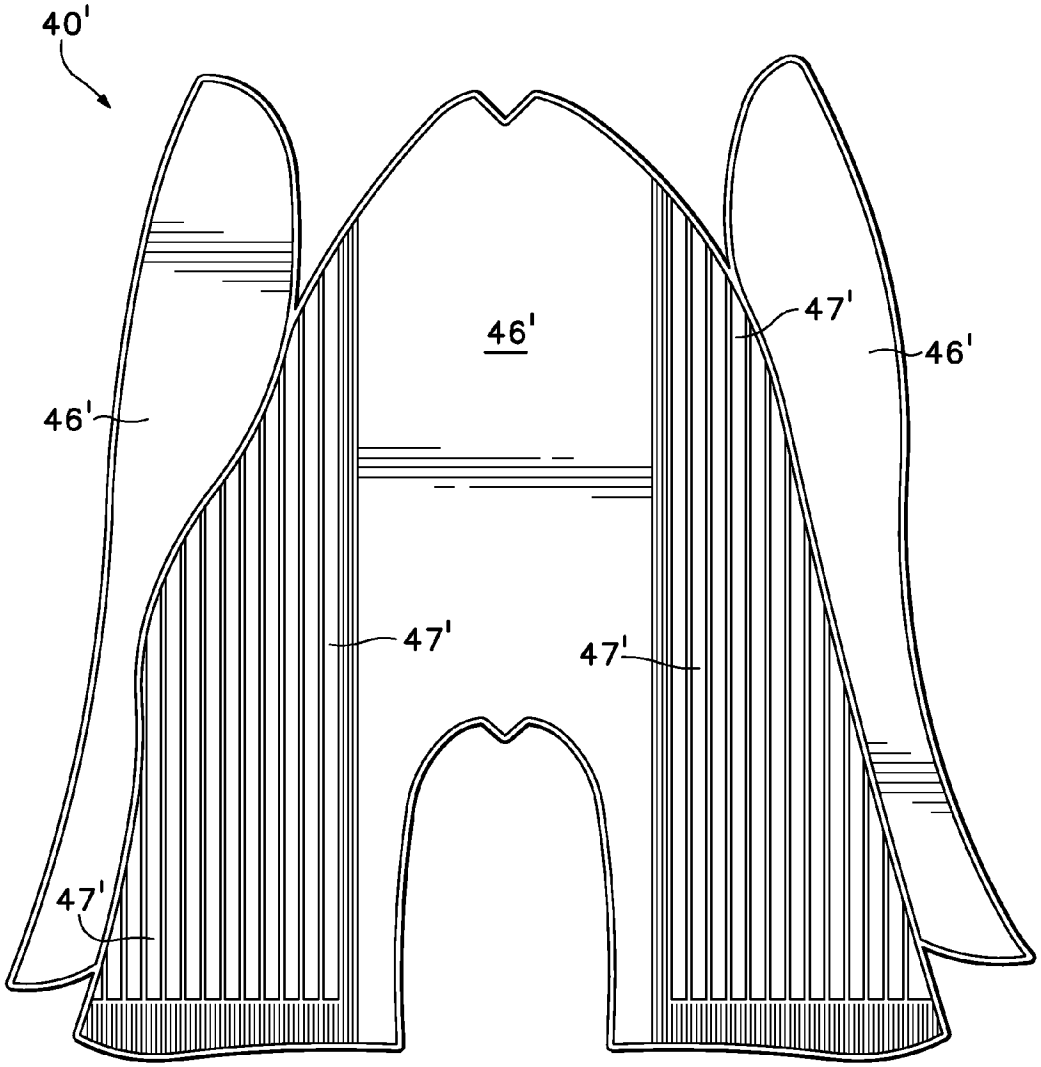



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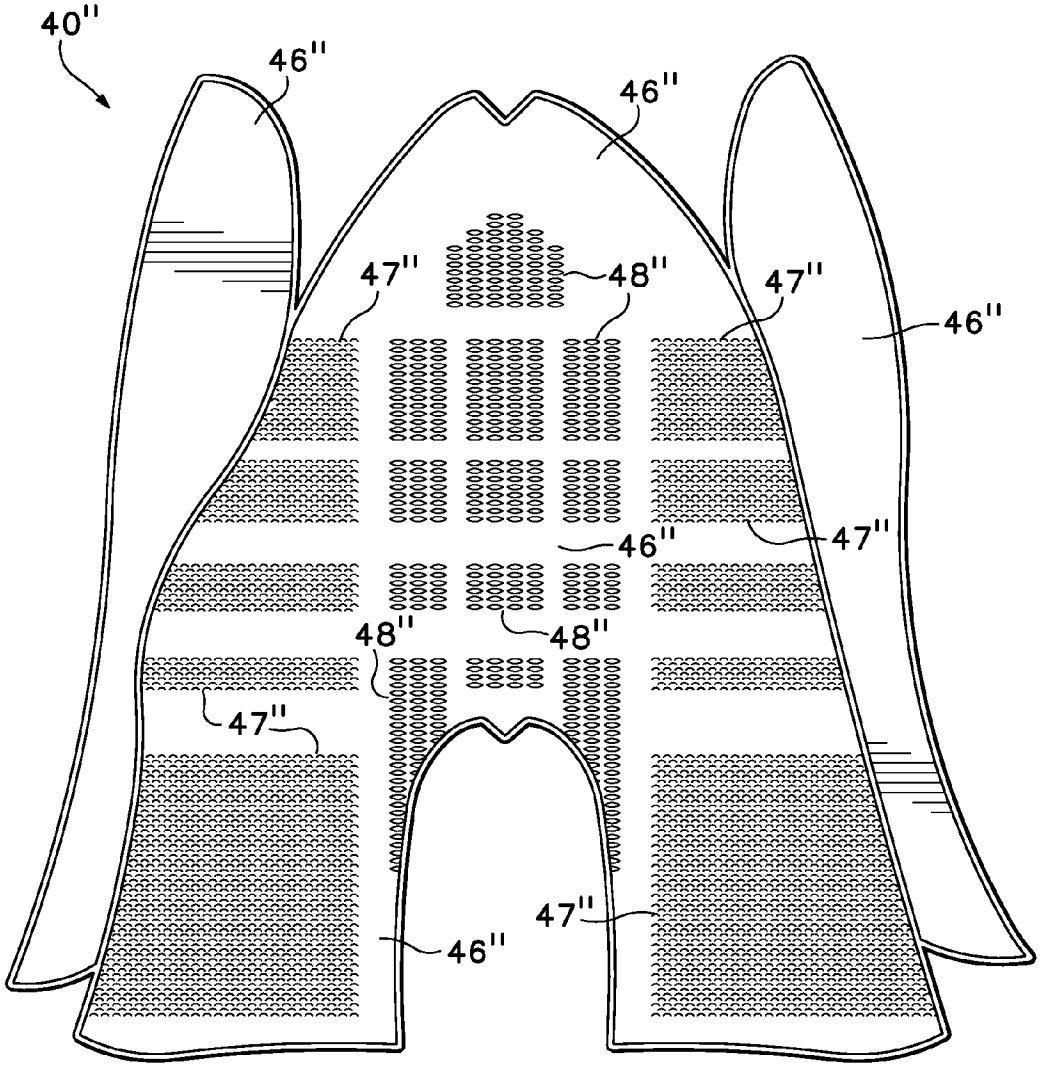



**Figure 11**

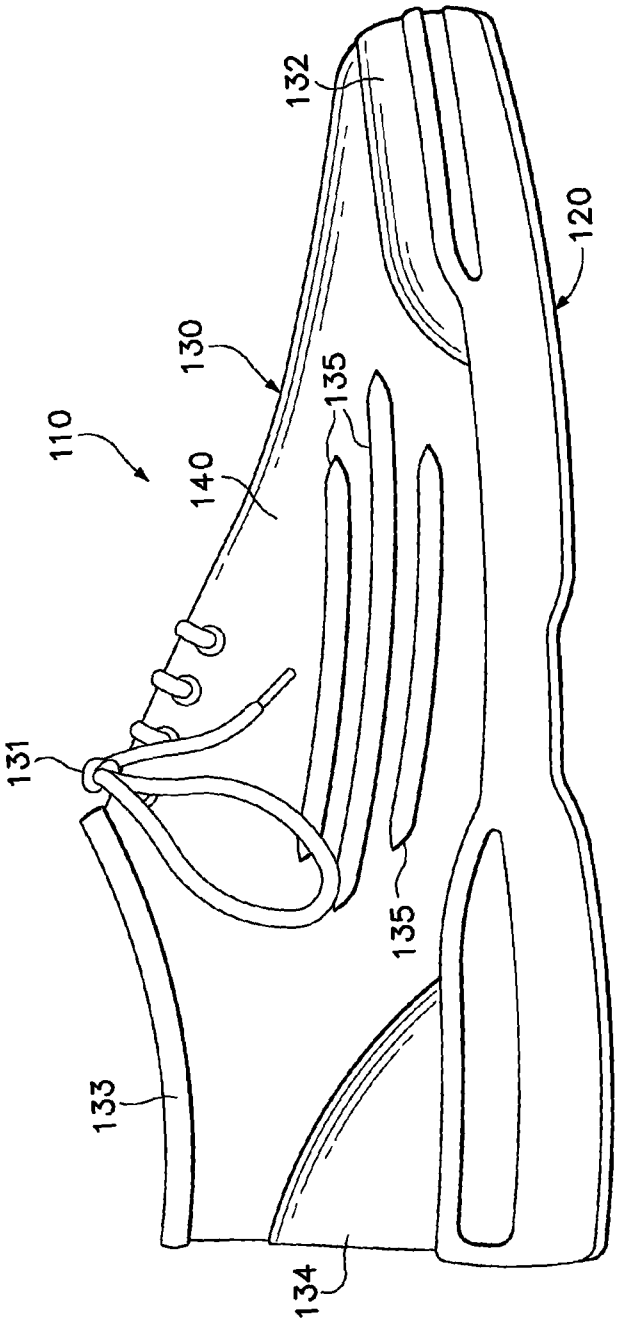



Figure 12

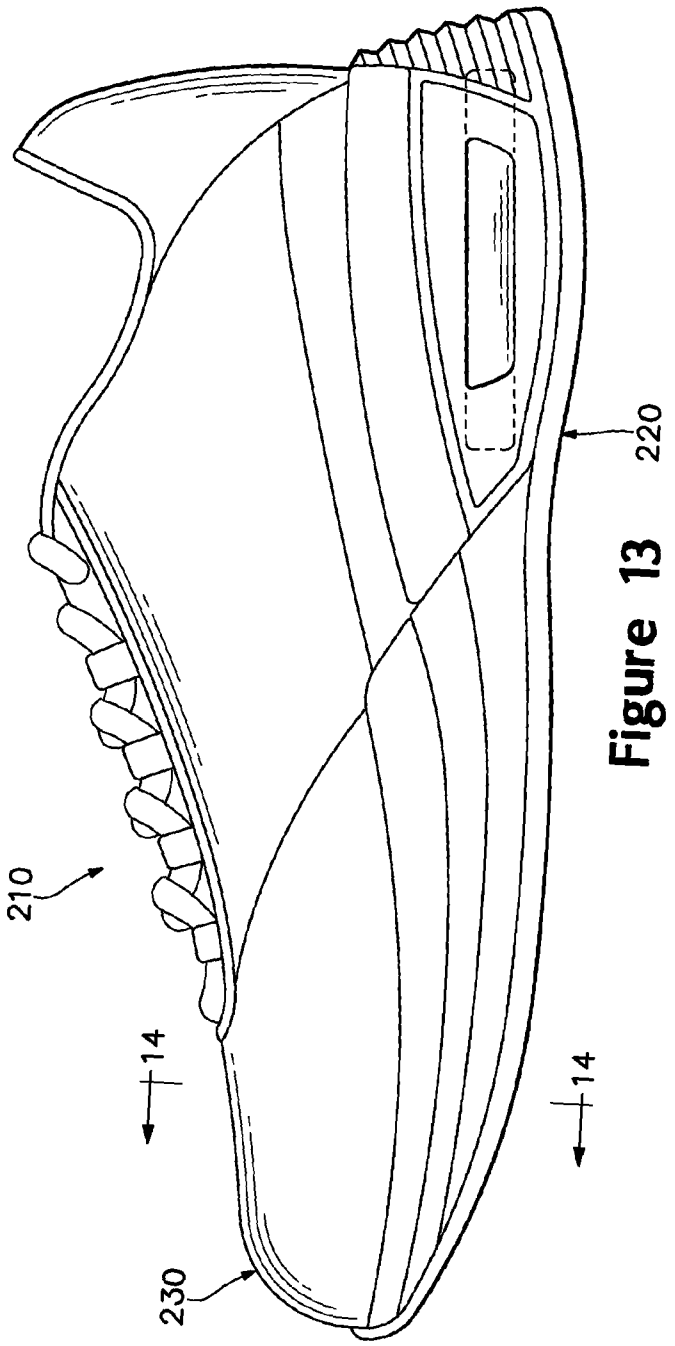



Figure 13


Skechers EX1013-p. 1941
Skechers v Nike

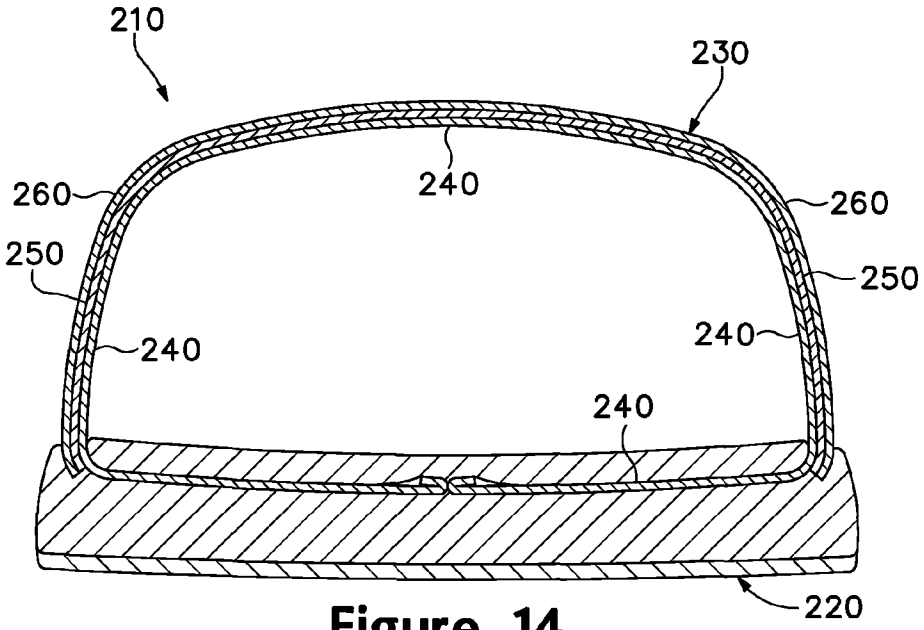



**Figure 14**

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 005127.01133 |
|---|---|---|
| | Application Number | |
| Title of Invention | AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | |

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

## Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

## Applicant Information:

**Applicant 1** Remove

**Applicant Authority** ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Bhupesh | | Dua | |

**Residence Information (Select One)** ◉ US Residency ○ Non US Residency ○ Active US Military Service

| City | Portland | State/Province | OR | Country of Residence i | US |
|---|---|---|---|---|---|

**Citizenship under 37 CFR 1.41(b)** i US

**Mailing Address of Applicant:**

| Address 1 | c/o NIKE, Inc. |
|---|---|
| Address 2 | One Bowerman Drive |

| City | Beaverton | State/Province | OR |
|---|---|---|---|
| Postal Code | 97005-6453 | Country i | US |

**Applicant 2** Remove

**Applicant Authority** ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Edward | Nathaniel | Thomas | |

**Residence Information (Select One)** ◉ US Residency ○ Non US Residency ○ Active US Military Service

| City | Portland | State/Province | OR | Country of Residence i | US |
|---|---|---|---|---|---|

**Citizenship under 37 CFR 1.41(b)** i US

**Mailing Address of Applicant:**

| Address 1 | c/o NIKE, Inc. |
|---|---|
| Address 2 | One Bowerman Drive |

| City | Beaverton | State/Province | OR |
|---|---|---|---|
| Postal Code | 97005-6453 | Country i | US |

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

## Correspondence Information:

**Enter either Customer Number or complete the Correspondence Information section below.**
**For further information see 37 CFR 1.33(a).**

☐ **An Address is being provided for the correspondence Information of this application.**

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 005127.01133 |
|---|---|---|
| | Application Number | |
| Title of Invention | AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | |

| Customer Number | 22909 | | |
|---|---|---|---|
| Email Address | | Add Email | Remove Email |

## Application Information:

| Title of the Invention | AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | | |
|---|---|---|---|
| Attorney Docket Number | 005127.01133 | Small Entity Status Claimed | ☐ |
| Application Type | Nonprovisional | | |
| Subject Matter | Utility | | |
| Suggested Class (if any) | | Sub Class (if any) | |
| Suggested Technology Center (if any) | | | |
| Total Number of Drawing Sheets (if any) | 12 | Suggested Figure for Publication (if any) | |

## Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

## Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

| Please Select One: | ◉ Customer Number | ○ US Patent Practitioner | ○ Limited Recognition (37 CFR 11.9) |
|---|---|---|---|
| Customer Number | 22909 | | |

## Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

| Prior Application Status | Pending | | Remove |
|---|---|---|---|
| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) |
| | Division of | 10791289 | 2004-03-03 |

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

## Foreign Priority Information:

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | 005127.01133 |
|---|---|---|
| | Application Number | |
| Title of Invention | AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | |

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

| Application Number | Country [i] | Parent Filing Date (YYYY-MM-DD) | Priority Claimed |
|---|---|---|---|
| | | | (•) Yes ( ) No |

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

## Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Remove

**Assignee 1**

If the Assignee is an Organization check here. [X]

| Organization Name | NIKE, Inc. | | |
|---|---|---|---|
| **Mailing Address Information:** | | | |
| **Address 1** | One Bowerman drive | | |
| Address 2 | | | |
| **City** | Beaverton | **State/Province** | OR |
| **Country** [i] US | | Postal Code | 97005-6453 |
| Phone Number | | Fax Number | |
| Email Address | | | |

Additional Assignee Data may be generated within this form by selecting the **Add** button. Add

## Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

| **Signature** | /Holly L. Bonar/ | | | Date (YYYY-MM-DD) | 2008-02-18 |
|---|---|---|---|---|---|
| First Name | Holly | Last Name | Bonar | Registration Number | 59496 |

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 2874532 |
| **Application Number:** | 12032995 |
| **International Application Number:** | |
| **Confirmation Number:** | 5554 |
| **Title of Invention:** | An Article of Footwear Having A Textile Upper |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22909 |
| **Filer:** | Holly L. Bonar/Rachael Brown |
| **Filer Authorized By:** | Holly L. Bonar |
| **Attorney Docket Number:** | 005127.01133 |
| **Receipt Date:** | 18-FEB-2008 |
| **Filing Date:** | |
| **Time Stamp:** | 20:33:44 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes) /Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Transmittal of New Application | Transmittal.pdf | 176301<br>e69ec27195644071ed0176b73492d86e9792816 | no | 1 |

| | |
|---|---|
| **Warnings:** | |
| **Information:** | |

| | | | | | |
|---|---|---|---|---|---|
| 2 | | Divisional_Application.pdf | 140329<br>9588bb98bf28bc87dbbed18a71b48a2c3c1c2e64 | yes | 22 |

| Multipart Description/PDF files in .zip description | | |
|---|---|---|
| **Document Description** | **Start** | **End** |
| Specification | 1 | 18 |
| Claims | 19 | 21 |
| Abstract | 22 | 22 |

**Warnings:**

**Information:**

| | | | | | |
|---|---|---|---|---|---|
| 3 | Drawings-only black and white line drawings | Figures.pdf | 301837<br>ee78a4c3ee8161bed8a85372d92efb6222e79cf0 | no | 12 |

**Warnings:**

**Information:**

| | | | | | |
|---|---|---|---|---|---|
| 4 | Application Data Sheet | ADS.pdf | 994304<br>eb06d990abf2cd7221194298d2fed741764e24fa | no | 4 |

**Warnings:**

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**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (12-04)

**Filing Date:** **02/18/08**

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## PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 12/032,995

### APPLICATION AS FILED – PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | SMALL ENTITY RATE ($) | SMALL ENTITY FEE ($) | OR | OTHER THAN SMALL ENTITY RATE ($) | OTHER THAN SMALL ENTITY FEE ($) |
|---|---|---|---|---|---|---|---|
| BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | | | N/A | **310** |
| SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | | | N/A | **510** |
| EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | | | N/A | **210** |
| TOTAL CLAIMS (37 CFR 1.16(i)) | **15** minus 20 = | **0** | X$ 25 | | OR | X$50 | **0** |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | **2** minus 3 = | * **0** | X$105 | | | X$210 | **0** |
| APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $260 ($130 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR | | | | | | |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | 185 | | | 370 | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | **0** | | TOTAL | **1030** |

### APPLICATION AS AMENDED – PART II

| | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | SMALL ENTITY RATE ($) | SMALL ENTITY ADDITIONAL FEE ($) | OR | OTHER THAN SMALL ENTITY RATE ($) | OTHER THAN SMALL ENTITY ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT A | Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| | Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| | Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | N/A | | OR | N/A | |
| | | | | | | TOTAL ADD'T FEE | | OR | TOTAL ADD'T FEE | |

| | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | SMALL ENTITY RATE ($) | SMALL ENTITY ADDITIONAL FEE ($) | OR | OTHER THAN SMALL ENTITY RATE ($) | OTHER THAN SMALL ENTITY ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT B | Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| | Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| | Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | N/A | | OR | N/A | |
| | | | | | | TOTAL ADD'T FEE | | OR | TOTAL ADD'T FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 12/032,995 | 02/18/2008 | Bhupesh Dua | 005127.01133 |

**CONFIRMATION NO. 5554**

22909
BANNER & WITCOFF, LTD.
1100 13th STREET, N.W.
SUITE 1200
WASHINGTON, DC 20005-4051

**FORMALITIES LETTER**

*OC000000028606614*

Date Mailed: 03/04/2008

## NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

**FILED UNDER 37 CFR 1.53(b)**

***Filing Date Granted***

**Items Required To Avoid Abandonment:**

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  *Applicant must submit $**310** to complete the basic filing fee for a non-small entity. If appropriate, applicant may make a written assertion of entitlement to small entity status and pay the small entity filing fee (37 CFR 1.27).*
- The oath or declaration is missing.
  *A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
  *Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.*

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of $**130** for a non-small entity, must be submitted with the missing items identified in this notice.

**SUMMARY OF FEES DUE:**

Total additional fee(s) required for this application is $**1160** for a non-small entity
- $**310** Statutory basic filing fee.
- $**130** Surcharge.
- The application search fee has not been paid. Applicant must submit $**510** to complete the search fee.
- The application examination fee has not been paid. Applicant must submit $**210** to complete the examination fee for a non-small entity.



Petitioner adidas AG - Exhibit 1002 - Page 43 of 346
Skechers EX1013-p. 1950
Skechers v Nike

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.
https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/sgorems/

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Office of Initial Patent Examination (571) 272-4000 or 1-800-PTO-9199



Petitioner adidas AG - Exhibit 1002 - Page 44 of 346
Skechers EX1013-p. 1951
Skechers v Nike

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 12/032,995 | 02/18/2008 | 3728 | 0.00 | 005127.01133 | 15 | 2 |

**CONFIRMATION NO. 5554**

22909
BANNER & WITCOFF, LTD.
1100 13th STREET, N.W.
SUITE 1200
WASHINGTON, DC 20005-4051

**FILING RECEIPT**

*OC00000028606613*

Date Mailed: 03/04/2008

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Applicant(s)**

Bhupesh Dua, Portland, OR;
Edward Nathaniel Thomas, Portland, OR;

**Assignment For Published Patent Application**

NIKE, INC., Beaverton, OR

**Power of Attorney:** None

**Domestic Priority data as claimed by applicant**

This application is a DIV of 10/791,289 03/03/2004

**Foreign Applications**

**If Required, Foreign Filing License Granted:** 03/03/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/032,995**

**Projected Publication Date:** To Be Determined - pending completion of Missing Parts

**Non-Publication Request:** No

**Early Publication Request:** No



Petitioner adidas AG - Exhibit 1002 - Page 45 of 346
Skechers EX1013-p. 1952
Skechers v Nike

**Title**

ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

**Preliminary Class**

036

## PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

## LICENSE FOR FOREIGN FILING UNDER

## Title 35, United States Code, Section 184

## Title 37, Code of Federal Regulations, 5.11 & 5.15

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as



Petitioner adidas AG - Exhibit 1002 - Page 46 of 346
Skechers EX1013-p. 1953
Skechers v Nike

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).



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Skechers EX1013-p. 1954
Skechers v Nike

Atty. Docket No. 005127.01133 PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| In Re Patent Application Of: | |
| Bhupesh Dua, et al. | Examiner: TBD |
| U.S. Pat. App. No.: 12/032,995 | Confirmation No.: 5554 |
| Filed: February 18, 2008 | |
| For: AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | |

**RESPONSE TO NOTICE TO FILE MISSING PARTS**

Commissioner for Patents
P.O. Box 1450,
Alexandria, Virginia 22313-1450

Sir:

In response to the Notice to File Missing Parts mailed March 4, 2008, please find enclosed:

- a duly executed Declaration and Power of Attorney with payment in the amount of $130.00 for the surcharge under 37 CFR § 1.16(e);

and

- a statutory basic filing fee, search fee, examination fee plus any excess claim fees in the amount of $1,160.00.

If any additional fee is required, please charge Deposit Account No. 19-0733.

Respectfully Submitted,
BANNER & WITCOFF, LTD.

Date: May 5, 2008

By: /Holly L. Bonar/

Holly L. Bonar
Registration No. 59,496

1001 G Street N.W., 11th Floor
Washington, D.C. 20001-4597
(503) 425-6800

Banner & Witcoff Ref. No. 005127.00260
Client Ref. No.

# JOINT DECLARATION FOR PATENT APPLICATION

As the below named inventors, we hereby declare that:

Our residence, post office address and citizenship are as stated below next to our names;

We believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled An Article of Footwear Having a Textile Upper, the specification of which

- ☐ is attached hereto.
- ☒ was filed on 3/3/04 as Application Serial Number 10/791,289 and was amended on _____ (if applicable).
- ☐ was filed under the Patent Cooperation Treaty (PCT) and accorded International Application No. _____, filed _____, and amended on _____ (if any).

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

We hereby acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56(a).

## Prior Foreign Application(s)

We hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

| Country | Application No. | Date of Filing (day month year) | Date of Issue (day month year) | Priority Claimed Under 35 U.S.C. §119 |
|---|---|---|---|---|
| | | | | |

## Prior United States Provisional Application(s)

We hereby claim priority benefits under Title 35, United States Code, §119(e)(1) of any U.S. provisional application listed below:

| U.S. Provisional Application No. | Date of Filing (day month year) | Priority Claimed Under 35 U.S.C. §119(e)(1) |
|---|---|---|
| | | |

## Prior United States Application(s)

We hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

| Application Serial No. | Date of Filing (Day, Month, Year) | Status — Patented, Pending, Abandoned |
|---|---|---|
| | | |

Banner & Witcoff Ref. No. 005127.00260
Client Ref. No.

## Power of Attorney

And we hereby appoint, both jointly and severally, as our attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith the practitioners at:

Customer Number: 22909 (PORT)

Please address all correspondence and telephone communications to the address and telephone number for this Customer Number.

We hereby declare that all statements made herein of our 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 and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature Bhupesh Dua Date 07/21/04
Full Name of First Inventor Dua (Family Name) Bhupesh (First Given Name) (Second Given Name)
Residence Portland, Oregon Citizenship U.S.A.
Post Office Address 3216 NW Spencer Street, Portland, Oregon 97229

Signature Edward N. Thomas Date 7/15/04
Full Name of Second Inventor Thomas (Family Name) Edward (First Given Name) Nathaniel (Second Given Name)
Residence Portland, Oregon Citizenship U.S.A.
Post Office Address 10226 NW Wilshire Lane, Portland, Oregon 97229

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 12032995 |
| **Filing Date:** | 18-Feb-2008 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| First Named Inventor/Applicant Name: | Bhupesh Dua |
| **Filer:** | Holly L. Bonar/Rachael Brown |
| **Attorney Docket Number:** | 005127.01133 |

Filed as Large Entity

**Utility Filing Fees**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| Utility application filing | 1011 | 1 | 310 | 310 |
| Utility Search Fee | 1111 | 1 | 510 | 510 |
| Utility Examination Fee | 1311 | 1 | 210 | 210 |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| Late filing fee for oath or declaration | 1051 | 1 | 130 | 130 |
| **Petition:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Patent-Appeals-and-Interference:** | | | | |
| Post-Allowance-and-Post-Issuance: | | | | |
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **1160** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 3253888 |
| **Application Number:** | 12032995 |
| **International Application Number:** | |
| **Confirmation Number:** | 5554 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22909 |
| **Filer:** | Holly L. Bonar/Rachael Brown |
| **Filer Authorized By:** | Holly L. Bonar |
| **Attorney Docket Number:** | 005127.01133 |
| **Receipt Date:** | 05-MAY-2008 |
| **Filing Date:** | 18-FEB-2008 |
| **Time Stamp:** | 15:24:58 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Deposit Account |
| Payment was successfully received in RAM | $1160 |
| RAM confirmation Number | 745 |
| Deposit Account | 190733 |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:<br>Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)<br>Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees) | |

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes) /Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Applicant Response to Pre-Exam Formalities Notice | Response_to_Missing_Parts_Notice.pdf | 71252<br>1962efbc8b121546e45a2e9387f66300 78aff92f | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Oath or Declaration filed | Declaration.pdf | 89595<br>081ff9b22cd284ae85611df98ac1c02b6 e1f5cf1 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Fee Worksheet (PTO-06) | fee-info.pdf | 8514<br>703a536688dc958ffaf1547c130bfc2b2 9a4194a | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 169361 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 12/032,995 | 02/18/2008 | 3728 | 1160 | 005127.01133 | 15 | 2 |

**CONFIRMATION NO. 5554**

**UPDATED FILING RECEIPT**

22909
BANNER & WITCOFF, LTD.
1100 13th STREET, N.W.
SUITE 1200
WASHINGTON, DC 20005-4051

*OC000000029870375*

Date Mailed: 05/12/2008

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Applicant(s)**

Bhupesh Dua, Portland, OR;
Edward Nathaniel Thomas, Portland, OR;

**Assignment For Published Patent Application**

NIKE, INC., Beaverton, OR

**Power of Attorney:** The patent practitioners associated with Customer Number 22909

**Domestic Priority data as claimed by applicant**

This application is a DIV of 10/791,289 03/03/2004 PAT 7,347,011

**Foreign Applications**

**If Required, Foreign Filing License Granted:** 03/03/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/032,995**

**Projected Publication Date:** 08/21/2008

**Non-Publication Request:** No

**Early Publication Request:** No



Petitioner adidas AG - Exhibit 1002 - Page 55 of 346
Skechers EX1013-p. 1962
Skechers v Nike

**Title**

ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

**Preliminary Class**

036

## PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

## LICENSE FOR FOREIGN FILING UNDER

## Title 35, United States Code, Section 184

## Title 37, Code of Federal Regulations, 5.11 & 5.15

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as



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Skechers EX1013-p. 1963
Skechers v Nike

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).



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Skechers v Nike

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 12/032,995 | 02/18/2008 | Bhupesh Dua | 005127.01133 |

CONFIRMATION NO. 5554

22909
BANNER & WITCOFF, LTD.
1100 13th STREET, N.W.
SUITE 1200
WASHINGTON, DC 20005-4051

PUBLICATION NOTICE

*OC000000031686228*

**Title:**ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER

**Publication No.**US-2008-0196181-A1
**Publication Date:**08/21/2008

## NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 12/032,995 | 02/18/2008 | Bhupesh Dua | 005127.01133 | 5554 |

22909 7590 07/27/2009

BANNER & WITCOFF, LTD.
1100 13th STREET, N.W.
SUITE 1200
WASHINGTON, DC 20005-4051

| EXAMINER | |
|---|---|
| PATTERSON, MARIE D | |
| ART UNIT | PAPER NUMBER |
| 3728 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 07/27/2009 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 12/032,995 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | Marie Patterson | 3728 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-15 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joha (1910251) in view of Santoni S.p. A. sewing machines (as described by applicant as a prior art machine in the specification).

Joha teaches a methodof making a shoe upper by providing a knitted blank (figure 1) and forming it into an upper by a first seam and second seam substantially as claimed except for the exact method of forming the knitted blank. Santoni S.p.A. produces numerous knitting machines including wide tube circular knitting machines for producing knitted clothing items and at least one such available machine produces texture, different stitch configurations, elements, and apertures in a knitted product as described by applicant in the specification of this application. The Patent to Lonati (7207196, also WO2004/097092) appears to be a Patent licensed to Santoni S.p.A. which is similar to the machine described by applicant as a machine used by applicant. It would have been obvious to form the upper of Joha with the knitting machine available from Santoni S.p.A. to provide a three-dimensional knitted element for the upper to provide improved fit and aesthetics of the upper/footwear of Joha.

1. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Other useful information can be obtained at the PTO Home Page at www.uspto.gov.

In order to avoid potential delays, Technology Center 3700 is encouraging FAXing of responses to Office Actions directly into the Center at *(571)273-8300* **(FORMAL FAXES ONLY)**. Please identify Examiner Marie Patterson of Art Unit 3728 at the top of your cover sheet.

Any inquiry concerning the MERITS of this examination from the examiner should be directed to Marie Patterson whose telephone number is (571) 272-4559. The examiner can normally be reached from 6AM - 4PM Mon-Wed.

/Marie Patterson/
Primary Examiner
Art Unit 3728

| Notice of References Cited | Application/Control No. 12/032,995 | Applicant(s)/Patent Under Reexamination DUA ET AL. | |
|---|---|---|---|
| | Examiner Marie Patterson | Art Unit 3728 | Page 1 of 2 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification |
|---|---|---|---|---|---|
| * | A | US-1,888,172 A | 11-1932 | JOHA ELMER N | 66/177 |
| * | B | US-1,902,780 A | 03-1933 | HOLDEN ROGER M et al. | 66/170 |
| * | C | US-1,910,251 A | 05-1933 | JOHA ELMER N | 66/177 |
| * | D | US-2,001,293 A | 05-1935 | WALLACE WILSON | 66/171 |
| * | E | US-2,047,724 A | 07-1936 | ZUCKERMAN LOUIS G | 66/177 |
| * | F | US-2,147,197 A | 02-1939 | GLIDDEN ALFRED A | 36/9R |
| * | G | US-2,314,098 A | 03-1943 | RAYMOND MCDONALD | 12/142G |
| * | H | US-2,400,692 A | 05-1946 | HERBERT LEON S | 36/10 |
| * | I | US-2,538,673 A | 01-1951 | ANSLEY DONAHUE PAUL | 36/9R |
| * | J | US-2,586,045 A | 02-1952 | JOHN HOZA | 36/9R |
| * | K | US-2,641,004 A | 06-1953 | RONYAN JOHN S et al. | 12/142G |
| * | L | US-2,675,631 A | 04-1954 | CARR DOUGHTY JOHN | 36/9R |
| * | M | US-4,276,671 A | 07-1981 | Melton, Florence | 12/142T |

**FOREIGN PATENT DOCUMENTS**

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**NON-PATENT DOCUMENTS**

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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Notice of References Cited | Application/Control No. 12/032,995 | Applicant(s)/Patent Under Reexamination DUA ET AL. | |
|---|---|---|---|
| | Examiner Marie Patterson | Art Unit 3728 | Page 2 of 2 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification |
|---|---|---|---|---|---|
| * | A | US-4,317,292 A | 03-1982 | Melton, Florence | 36/9R |
| * | B | US-4,852,272 A | 08-1989 | Chilewich et al. | 36/12 |
| * | C | US-5,095,720 A | 03-1992 | Tibbals, Jr., E. C. | 66/55 |
| * | D | US-5,323,627 A | 06-1994 | Lonati et al. | 66/221 |
| * | E | US-5,353,524 A | 10-1994 | Brier, Daniel L. | 36/55 |
| * | F | US-5,461,884 A | 10-1995 | McCartney et al. | 66/170 |
| * | G | US-6,308,438 B1 | 10-2001 | Throneburg et al. | 36/9R |
| * | H | US-7,207,196 B2 | 04-2007 | Lonati et al. | 66/222 |
| | I | US- | | | |
| | J | US- | | | |
| | K | US- | | | |
| | L | US- | | | |
| | M | US- | | | |

**FOREIGN PATENT DOCUMENTS**

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**NON-PATENT DOCUMENTS**

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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

## Search Notes

| Application/Control No. | Applicant(s)/Patent under Reexamination | |
|---|---|---|
| 12/032,995 | DUA ET AL. | |
| **Examiner** | **Art Unit** | |
| Marie Patterson | 3728 | |

| SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 012 | 146C, 142G, | 7/24/2009 | /MP/ |
| 036 | 45, 10, | 7/24/2009 | /MP/ |
| 036 | 55, 3A | 7/24/2009 | /MP/ |
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| INTERFERENCE SEARCHED | | | |
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| Class | Subclass | Date | Examiner |
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| SEARCH NOTES (INCLUDING SEARCH STRATEGY) | | |
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| | DATE | EXMR |
| Consulted Parent Application | 7/24/2009 | /MP/ |
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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
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| *In re* Application of<br><br>Bhupesh DUA, et al.<br><br>Serial No.: 12/032,995<br><br>Filed: February 18, 2008<br><br>For: AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | Art Unit: 3728<br><br>Examiner: Patterson, Marie D.<br><br>Attorney Ref.: 005127.01133<br><br>Confirmation No.: 5554 |

**AMENDMENT**

Commissioner for Patents
U.S. Patent and Trademark Office
Alexandria, VA 22313

Sir:

In response to the Office Action dated July 27, 2009, please amend the above-captioned patent application as follows:

**Amendments to the Claims** are reflected in the "Listing of Claims," which begins on page 2 of this paper.

**Remarks** begin on page 5 of this paper.

## LISTING OF CLAIMS

This Listing of Claims will replace all prior versions and Listings of Claims in the application:

1. (Currently Amended) A method of manufacturing an article of footwear, the method comprising steps of:

mechanically-manipulating a yarn with a circular knitting machine to form a cylindrical textile structure that incorporates a single type of textile having a plurality of knit constructions;

removing at least one textile element from the textile structure;

incorporating the textile element into an upper of the article of footwear.

2. (Original) The method recited in claim 1, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine.

3. (Original) The method recited in claim 1, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element.

4. (Original) The method recited in claim 1, wherein the step of mechanically manipulating includes forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element.

5. (Original) The method recited in claim 1, wherein the step of mechanically manipulating includes forming at least two textile elements in the cylindrical textile structure.

6. (Original) The method recited in claim 1, wherein the step of mechanically manipulating includes forming apertures in the textile element.



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7. (Original) The method recited in claim 1, wherein the step of incorporating includes securing a first pair of edges of the textile element to each other to form a first seam that extends along a lower region of the upper.

8. (Original) The method recited in claim 7, wherein the step of incorporating further includes securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper.

9. (Currently Amended) A method of manufacturing an article of footwear, the method comprising steps of:

mechanically-manipulating a yarn with a knitting machine to form a textile structure having an outline of at least one textile element, wherein the textile structure incorporates a single type of textile having a plurality of knit constructions;

removing the textile element from the textile structure;

incorporating the textile element into an upper of the article of footwear.

10. (Original) The method recited in claim 9, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine.

11. (Original) The method recited in claim 10, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element.

12. (Original) The method recited in claim 9, wherein the step of mechanically-manipulating includes utilizing a jacquard double needle-bar raschel knitting machine.

13. (Original) The method recited in claim 9, wherein the step of mechanically manipulating includes forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and



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the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element.

14. (Original) The method recited in claim 9, wherein the step of incorporating includes securing a first pair of edges of the textile element to each other to form a first seam that extends along a lower region of the upper.

15. (Currently Amended) The method recited in claim ~~9~~ 14, wherein the step of incorporating further includes securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper.



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**REMARKS**

Applicants respectfully request entry of this Amendment, reconsideration of this application, as amended, and reconsideration of the Office Action mailed on July 27, 2009. Applicants believe that no fees are due to permit entry of this Amendment. However, Applicants authorize the Commissioner to debit our Deposit Account No. 19-0733 for any fees that are not accounted for in this paper, but are otherwise necessary to maintain the pending status of this application.

Upon entry of this Amendment, claims 1-15 will be pending. Claims 1, 9, and 15 have been amended.

***I. The Office's Rejection of Claims 1-15***

In the Office Action mailed July 27, 2009, the Office rejected claims 1-15 under 35 U.S.C. § 103 as allegedly being unpatentable over Joha, U.S. Patent No. 1,910,251 ("Joha") in view of Santoni S.p. A. sewing machines, alleged "admitted prior art." Applicants respectfully traverse this rejection and request reconsideration of the claims, as amended.

Applicants' independent claim 1 recites "[a] method of manufacturing an article of footwear, the method comprising steps of: mechanically-manipulating a yarn with a circular knitting machine to form *a cylindrical textile structure that incorporates a single type of textile having a plurality of knit constructions*..." (emphasis added). Applicants' independent claim 9 recites "[a] method of manufacturing an article of footwear, the method comprising steps of: mechanically-manipulating a yarn with a knitting machine to form a textile structure having an outline of at least one textile element, wherein *the textile structure incorporates a single type of textile having a plurality of knit constructions*..." (emphasis added).

The Joha reference describes a knitted blank formed from a strip of flat knitted material that is designed to form knitted shoes having a single knit construction. Santoni (the alleged "admitted prior art") is a wide-tube circular knitting machine that can be used to form a cylindrical textile structure having a single knit construction. The Santoni machine can be used to alter the design on the textile structure through needle selection by programming the needles to accept or not accept yarn at each stitch location. Joha and



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Santoni do not teach or suggest a method of manufacturing an article of footwear in which the textile structure incorporates a single type of textile having a plurality of knit constructions, as recited in Applicants' independent claims 1 and 9, as amended. Therefore, Joha in view of Santoni do not teach at least some elements recited in Applicants' independent claims 1 and 9, as amended, or their corresponding dependent claims, 2-8 and 10-15, respectively. Applicants respectfully request that the Office withdraw this rejection and allow these claims.

***II. Conclusion***

If the Examiner believes that a telephone conference or an interview will be useful to advance the prosecution of this application and/or to place the application in condition for allowance, she is invited to contact the undersigned attorney.

All rejections having been addressed, Applicants respectfully submit that this application is in condition for allowance. Allowance of this application is earnestly solicited.

Respectfully submitted,

BANNER & WITCOFF, LTD.

Dated: October 20, 2009

By: /Holly L. Johnston/

Holly L. Johnston
Registration No. 59,496

Banner & Witcoff, Ltd.
1100 13th Street, N.W., Suite 1200
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| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 6297942 |
| **Application Number:** | 12032995 |
| **International Application Number:** | |
| **Confirmation Number:** | 5554 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22909 |
| **Filer:** | Holly Lynn Johnston/Rachael Brown |
| **Filer Authorized By:** | Holly Lynn Johnston |
| **Attorney Docket Number:** | 005127.01133 |
| **Receipt Date:** | 20-OCT-2009 |
| **Filing Date:** | 18-FEB-2008 |
| **Time Stamp:** | 18:55:10 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| Submitted with Payment | no |
|---|---|

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
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| 1 | Amendment/Req. Reconsideration-After Non-Final Reject | Response.pdf | 126019<br>a7ba48611af2fc4c288c6c6787118148c2ffc3b8 | no | 6 |

| **Warnings:** |
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| **Information:** |

| Total Files Size (in bytes): | 126019 |
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**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**PATENT APPLICATION FEE DETERMINATION RECORD**
Substitute for Form PTO-875

| Application or Docket Number | Filing Date | ☐ To be Mailed |
|---|---|---|
| 12/032,995 | 02/18/2008 | |

**APPLICATION AS FILED – PART I**

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | SMALL ENTITY ☐ RATE ($) | SMALL ENTITY ☐ FEE ($) | OR | OTHER THAN SMALL ENTITY RATE ($) | OTHER THAN SMALL ENTITY FEE ($) |
|---|---|---|---|---|---|---|---|
| ☐ BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | | | N/A | |
| ☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | | | N/A | |
| ☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | | | N/A | |
| TOTAL CLAIMS (37 CFR 1.16(i)) | minus 20 = | * | X $ = | | OR | X $ = | |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | minus 3 = | * | X $ = | | | X $ = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | | | TOTAL | |

**APPLICATION AS AMENDED – PART II**

| AMENDMENT 10/20/2009 | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | SMALL ENTITY RATE ($) | SMALL ENTITY ADDITIONAL FEE ($) | OR | OTHER THAN SMALL ENTITY RATE ($) | OTHER THAN SMALL ENTITY ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * 15 | Minus | ** 20 | = 0 | X $ = | | OR | X $52= | 0 |
| Independent (37 CFR 1.16(h)) | * 2 | Minus | ***3 | = 0 | X $ = | | OR | X $220= | 0 |
| ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | 0 |

| AMENDMENT | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) | OR | RATE ($) | ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | X $ = | | OR | X $ = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | X $ = | | OR | X $ = | |
| ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/Renee Collins/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

PTO/SB/08a (03-08)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 12032995 |
| Filing Date | 2008-02-18 |
| First Named Inventor | Bhupesh Dua |
| Art Unit | 3728 |
| Examiner Name | Marie D. Patterson |
| Attorney Docket Number | 005127.01133 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 2147197 | | 1936-11-25 | Glidden | |
| | 2 | 4211806 | | 1980-07-08 | Civardi et al. | |
| | 3 | 4255949 | | 1981-03-17 | Thorneburg | |
| | 4 | 4373361 | | 1983-02-15 | Thorneburg | |
| | 5 | 4447967 | | 1984-05-15 | Zaino | |
| | 6 | 4607439 | | 1986-08-26 | Harada | |
| | 7 | 4785558 | | 1988-11-22 | Shiomura | |
| | 8 | 4813158 | | 1989-03-21 | Brown | |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 9 | 5345638 | | 1994-09-13 | Nishida, et al. | |
| | 10 | 1888172 | | 1932-11-00 | Joha | |
| | 11 | 1902780 | | 1933-03-00 | Holden, et al. | |
| | 12 | 1910251 | | 1933-05-00 | Joha | |
| | 13 | 2001293 | | 1935-05-00 | Wallace | |
| | 14 | 2400692 | | 1946-05-00 | Herbert | |
| | 15 | 2641004 | | 1953-06-00 | Ronyan, et al. | |
| | 16 | 3694940 | | 1972-10-00 | Stohr | |
| | 17 | 6558784 | | 2003-05-00 | Norton, et al. | |
| | 18 | 6910288 | | 2004-06-00 | Dua | |
| | 19 | 6931762 | | 2005-08-00 | Dua | |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
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| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 20 | 1597934 | | 1926-08-00 | Stimpson | |
| | 21 | 2330199 | | 1943-09-00 | Holmes Basch | |
| | 22 | 2586045 | | 1952-02-00 | John Hoza | |
| | 23 | 2675631 | | 1954-04-00 | Carr | |
| | 24 | 4317292 | | 1982-03-00 | Melton | |
| | 25 | 5461884 | | 1995-10-00 | McCartney, et al. | |
| | 26 | 5511323 | | 1996-04-00 | Dahlgren | |
| | 27 | 5746013 | | 1998-05-00 | Fay, Sr. | |
| | 28 | 7051460 | | 2006-05-00 | Orei, et al. | |
| | 29 | 2047724 | | 1936-07-00 | Zuckerman | |
| | 30 | 2675631 | | 1954-04-00 | Carr Doughty | |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 31 | 5095720 | | 1992-03-00 | Tibbals, Jr. | |
| | 32 | 5345638 | | 1994-09-00 | Nishida | |
| | 33 | 5353524 | | 1994-10-00 | Brier | |
| | 34 | 5735145 | | 1998-04-00 | Pernick | |
| | 35 | 6308438 | | 2001-10-00 | Throneburg, et al. | |

If you wish to add additional U.S. Patent citation information please click the Add button. Add

**U.S.PATENT APPLICATION PUBLICATIONS** Remove

| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 20040118018 | | 2004-06-00 | Dua | |
| | 2 | 20020078599 | | 2002-06-00 | Delgorgur, et al. | |
| | 3 | 20030126762 | | 2003-07-00 | Tseng | |

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

**FOREIGN PATENT DOCUMENTS** Remove

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] ¡ | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
|---|---|---|---|---|---|---|---|---|
| | 1 | 90/03744 | WO | | 1990-04-19 | RBFPT, Inc. | | ☐ |
| | 2 | 1437057 | EP | | 2004-07-14 | Mizuno Corp. | | ☐ |
| | 3 | 1539886 | GB | | 1979-02-07 | Ashworths Ltd. | | ☐ |
| | 4 | 1067566 | CN | | 1993-01-06 | Puma AG | English Abstract | ☐ |
| | 5 | 1411762 | CN | | 2003-04-23 | Taiwan Baihe Industry Co., Ltd. | English Abstract | ☐ |
| | 6 | 1429512 | CN | | 2003-07-16 | Taiwan Baihe Industry Co., Ltd. | English Abstract | ☐ |

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

**NON-PATENT LITERATURE DOCUMENTS** Remove

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | Santoni S.p.A. publication: Knitting Wear, SM8 Top 1 (2 pages) | ☐ |
| | 2 | International Search Report and Written Opinion in related PCT Application No. PCT/US2005/004776 mailed on May 19, 2005 | ☐ |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | | Date Considered | |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /Holly L. Johnston/ | Date (YYYY-MM-DD) | 2009-10-30 |
|---|---|---|---|
| Name/Print | Holly L. Johnston | Registration Number | 59496 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

From the INTERNATIONAL SEARCHING AUTHORITY

# PCT

To:
BANNER & WITCOFF, LTD.
Attn. Kuzara, Byron S.
1001 G Street, N.W.
Eleventh Floor
Washington, D.C. 20001-4597
UNITED STATES OF AMERICA

005745.00439
DOCKETED
MAY 27 2005

ARTICLE 19 AMEND DUE 7/19/05
DEMAND/RESPONSE TO WRITTEN OPINION DUE 1/3/06

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

| | |
|---|---|
| Applicant's or agent's file reference<br>005745.00439 | Date of mailing *(day/month/year)*<br>19/05/2005<br>**FOR FURTHER ACTION** See paragraphs 1 and 4 below |
| International application No.<br>PCT/US2005/004776 | International filing date *(day/month/year)*<br>16/02/2005 |
| Applicant<br>NIKE, INC. | |

1. [x] The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   **Filing of amendments and statement under Article 19:**
   The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

   **When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

   **Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Fascimile No.: (41-22) 740.14.35

   **For more detailed instructions,** see the notes on the accompanying sheet.

2. [ ] The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. [ ] **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   [ ] the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   [ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until **30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

| | |
|---|---|
| Name and mailing address of the International Searching Authority<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | Authorized officer<br>Louis Kainde |

Form PCT/ISA/220 (January 2004) *(See notes on accompanying sheet)*

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

## INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

**What parts of the international application may be amended?**

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

**When?** Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

**Where not to file the amendments?**

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

**How?** Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

**The amendments must be made in the language in which the international application is to be published.**

**What documents must/may accompany the amendments?**

**Letter (Section 205(b)):**

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

**The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.**



Petitioner adidas AG - Exhibit 1002 - Page 84 of 346
Skechers EX1013-p. 1991
Skechers v Nike

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped),whether

(i) the claim is unchanged;

(ii) the claim is cancelled;

(iii) the claim is new;

(iv) the claim replaces one or more claims as filed;

(v) the claim is the result of the division of a claim as filed.

**The following examples illustrate the manner in which amendments must be explained in the accompanying letter:**

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added." .

2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."

3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."

4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

**"Statement under article 19(1)" (Rule 46.4)**

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

**It must be in the language in which the international appplication is to be published.**

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

**Consequence if a demand for international preliminary examination has already been filed**

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

**Consequence with regard to translation of the international application for entry into the national phase**

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.



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# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| Applicant's or agent's file reference 005745.00439 | FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below. | |
|---|---|---|
| International application No. PCT/US2005/004776 | International filing date *(day/month/year)* 16/02/2005 | (Earliest) Priority Date *(day/month/year)* 03/03/2004 |
| Applicant NIKE, INC. | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
      [ ] The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
   b. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box II).

3. [ ] **Unity of invention is lacking** (see Box III).

4. With regard to the **title,**
   [X] the text is approved as submitted by the applicant.
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   [X] the text is approved as submitted by the applicant.
   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. 1
      [X] as suggested by the applicant.
      [ ] as selected by this Authority, because the applicant failed to suggest a figure.
      [ ] as selected by this Authority, because this figure better characterizes the invention.
   b. [ ] none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (January 2004)

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A43B1/04 A43B9/02 A43B23/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A43B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | US 5 345 638 A (NISHIDA ET AL)<br>13 September 1994 (1994-09-13)<br><br>column 3, line 6 - column 5, line 62;<br>figures<br>-----<br>-/-- | 1-7,<br>11-17,<br>19,20,<br>24-30,<br>32-37,<br>39,41,<br>44-49,<br>58,62-67 |

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 11 May 2005 | 19/05/2005 |

| Name and mailing address of the ISA | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL – 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | Cianci, S |

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | WO 90/03744 A (RBFPT, INC)<br>19 April 1990 (1990-04-19)<br><br>page 6, line 30 - page 8, line 25<br>page 9, line 26 - page 10, line 31<br>page 16, line 5 - line 16<br>figures 3,8,9 | 1-7,<br>11-17,<br>19,20,<br>24-30,<br>32-37,<br>39,41,<br>44-49,<br>58,62-67 |
| P,A | EP 1 437 057 A (MIZUNO CORPORATION)<br>14 July 2004 (2004-07-14)<br><br>the whole document | 1,7-10,<br>20,21,<br>40,41,<br>43,47 |
| A | GB 1 539 886 A (ASHWORTHS LTD)<br>7 February 1979 (1979-02-07)<br>the whole document | 1,20,28,<br>41 |

Form PCT/ISA/210 (continuation of second sheet) (January 2004)



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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 5345638 A | 13-09-1994 | AU 1977192 A | 12-01-1993 |
| | | CN 1067566 A | 06-01-1993 |
| | | WO 9222223 A1 | 23-12-1992 |
| WO 9003744 A | 19-04-1990 | AU 4425889 A | 01-05-1990 |
| | | CA 2000090 A1 | 03-04-1990 |
| | | EP 0436659 A1 | 17-07-1991 |
| | | JP 4505107 T | 10-09-1992 |
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| EP 1437057 A | 14-07-2004 | JP 2004230151 A | 19-08-2004 |
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| | | US 2005081402 A1 | 21-04-2005 |
| GB 1539886 A | 07-02-1979 | NONE | |



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(11) EP 1 437 057 A1

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## (54) Light weight shoes

(57) A shoe (20) including an upper material using a double raschel warp knitted fabric is provided. The upper material includes a first surface having a non-mesh structure and a second surface having a non-mesh structure part (A)(1a-1d), a mesh structure part (B)(2) and a mesh structure part (C)(3a-3d). The burst strengths burst strengths A, B and C of the parts (A, B and C) satisfy the relationship: A > B > C. The non-mesh structure part (A)(1a-1d) is disposed in a part surrounding the tiptoe, a part connecting to a shoe sole and disposed in both sides of the foot for example, in a stripe. The mesh structure part (B)(2) is disposed in the vicinity of the surface of the toe and the mesh structure part (C)(3a-3d) is disposed in the both sides of the foot for example, in a stripe. Thus, a shoe having lightweight, air permeability and durability and a double raschel knitted fabric used for the shoe are provided.

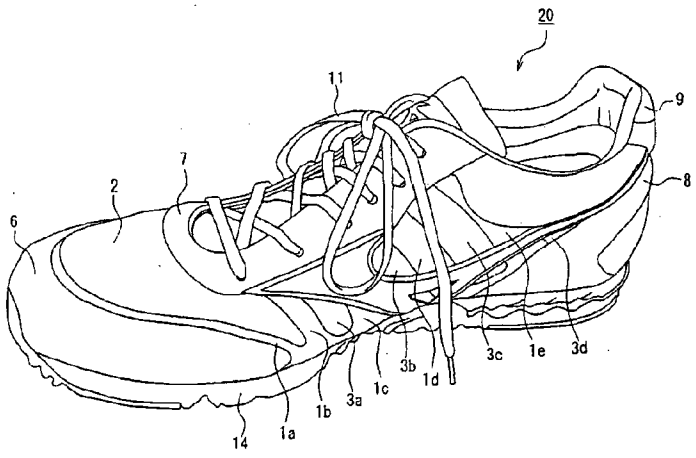



FIG. 2

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EP 1 437 057 A1

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## Description

**[0001]** The present invention relates to shoes. More particularly, the present invention relates to shoes incorporating a double raschel warp knitted fabric.

**[0002]** Conventionally, a warp knitted fabric, a woven fabric, a mesh material, and the like, have been used for shoes (see, for example, application for utility model registration No. 2548713, JP 5(1993)-176804A). In particular, in sport shoes, properties such as lightweight and air permeability are required. A warp knitted fabric having a mesh structure is preferred with respect to the above-mentioned properties, but, on the other hand, it does not have a satisfactory strength and needs reinforcement as a whole. At the present, in most cases, such reinforcement is carried out by using artificial leather, leather, a resin sheet, resin, a woven fabric, and the like, from the side of the front surface. Therefore, in general, the usual weight of one sport shoe is about 150 g to 500 g.

**[0003]** However, the weight of the conventional sport shoe is heavy for use in marathon, running, and indoor sports such as badminton, ping-pong, etc. Therefore, there is a demand for shoes having lighter weight.

**[0004]** With the foregoing in mind, in order to solve the above-mentioned conventional problem, it is an object of the present invention to provide a shoe having lightweight and air permeability and also having high durability. This object is solved by the above independent claim 1. The invention also provides a double raschel warp knitted fabric of independent claim 10 and a use of this double raschel warp knitted fabric for a shoe according to independent claim 14. Further advantageous features and aspects of the invention are evident from the dependant claims, the description and the drawings.

**[0005]** According to one aspect of the present invention a shoe is provided which includes an upper material using a double raschel warp knitted fabric. The upper material includes a first surface having a non-mesh structure and a second surface having a non-mesh structure part (A) and mesh structure parts (B, C); the burst strengths A, B and C of the parts (A, B and C) satisfy the relationship: A > B > C; the non-mesh structure part (A) is disposed in a part surrounding the tiptoe and partially in both sides of the foot; the mesh structure part (B) is disposed in the vicinity of the surface of the toe; and the mesh structure part (C) is disposed partially in the both sides of the foot.

**[0006]** According to another aspect of the invention a shoe is provided including an upper material using a double raschel warp knitted fabric. The upper material includes a front surface including a mesh structure part and a back surface having a non-mesh structure; and a constituent yarn of the front surface includes a yarn having a melting point that is lower than the melting point of a constituent yarn of the back surface, and at least a part of the front surface is partially fused.

**[0007]** Another aspect of the present invention relates to a double raschel warp knitted fabric adapted for use with a shoe. The warp knitted fabric includes one surface having a non-mesh structure and another surface having a non-mesh structure part (A) and mesh structure parts (B, C); the burst strengths A, B and C of the parts (A, B and C) satisfy the relationship: A > B > C; the non-mesh structure part (A) is disposed in a part surrounding the tiptoe and partially in both sides of the foot; the mesh structure part (B) is disposed in the vicinity of the front surface of the toe; the mesh structure part (C) is disposed partially in the both sides of the foot; and at least the parts A to C are disposed in one continuous knitted fabric.

**[0008]** Figure 1 is a plan view showing a shoe pattern using a double raschel warp knitted fabric according to Embodiment 1 of the present invention.

**[0009]** Figure 2 is a side view showing a sport shoe according to Embodiment 2 of the present invention.

**[0010]** Figure 3 is a perspective view showing the shoe shown in Figure 2 when a tongue part is taken out of the shoe.

**[0011]** Figure 4 is a side view showing the shoe of Figure 2 seen from the opposite side.

**[0012]** Figure 5 is a plan view showing a shoe pattern using a double raschel warp knitted fabric according to Embodiment 3 of the present invention.

**[0013]** The present invention relates to a shoe including an upper material using a double raschel warp knitted fabric. The double raschel warp knitted fabric is a three-layer warp knitted fabric including a base fabric for a front surface, a base fabric for a back surface and a connecting yarn connecting the front surface to the back surface. This warp knitted fabric is knitted by using a warp knitting machine with a double needle line so that the base fabric for a first surface is knitted as a derivative weave that is jacquard-controlled so as to include a non-mesh structure part (A) and mesh structure parts (B, C) and the base fabric for a second surface is knitted as a homogeneous non-mesh structure. The second surface may be formed of one weave and may be formed with different weave mixed. A warp knitting machine for knitting this knitted fabric is commercially available from KARL MAYER Textilmaschinenfabrik GmbH in Germany (NIPPON MAYER LTD. (a Japan corporation) is included).

**[0014]** When the surface including the non-mesh structure part (A) and mesh structure parts (B, C) of the knitted fabric is used for the front surface of a shoe, the shoe has an excellent appearance and furthermore, a surface area is increased, thus improving air permeability. On the contrary, when the second surface having a non-mesh structure is used for the front surface of the shoe, water can easily be prevented from entering the shoe from the surface.

**[0015]** The burst strengths A, B and C of the parts (A, B and C) of the double raschel warp knitted fabric satisfy the relationship: A > B > C. The non-mesh structure part (A) is disposed in a part that requires a high strength,



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that is, a part surrounding the tiptoe (i.e., a tiptoe region of the shoe) and a part connecting to a shoe sole, and also to parts that face the sides of the foot (i.e., side regions of the shoe), the non-mesh structure part (A) is disposed in a stripe. Furthermore, to a part that may have moderate strength and air permeability, that is, a part in the vicinity of the surface of the toe (i.e., a toe region of the shoe), the mesh structure part (B) is placed. Furthermore, to a part that needs air permeability, that is, the side surfaces of the foot (both sides), the mesh structure part (C) is placed, for example, in a stripe. Thus, as a whole, in the shoe, air permeability and durability are balanced.

**[0016]** The burst strength according to the bursting test based on the JIS L 1096 A of the non-mesh structure part (A) is preferably about 1400 kPa to 1550 kPa with respect to shoes such as marathon shoes, in which lightweight is particularly required. With respect to general shoes for running or jogging, the burst strength is preferably about 1600 kPa. Furthermore, with respect to shoes for a heavy use, for example, shoes for indoor sports such as badminton, ping-pong, etc., the burst strength is preferably about 2400 kPa.

**[0017]** It is preferable that the burst strength of the mesh structure part (C) is in the range from 900 kPa to 1000 kPa. The mesh structure part (B) may have any burst strength between the burst strength of (A) and that of (C).

**[0018]** It is preferable that a tiptoe region, a heel region and an eyelet part of the sport shoe are reinforced. Among the above-mentioned parts, the heel part may not be reinforced in the case where lightweight is particularly important.

**[0019]** It is preferable that a tongue part of the sport shoe includes the mesh structure part (C). It is further preferable that the tongue part may include a mesh structure part (D) having a burst strength that is lower than that of the part (C).

**[0020]** The double raschel warp knitted fabric may have a property of being stretchable in the width direction of the foot and not stretchable in longitudinal direction of the foot. Thus, the effect of allowing a size of a shoe to be stable and preventing the tiptoe part from stretching when the toe touches to the part at the time of wearing. On the contrary, a property of not being stretchable in the width direction of the foot and stretchable in the longitudinal direction of the foot may be provided. Thus, fitness can be provided in the direction of the width. Furthermore, when a shoe is manufactured by a process called a lasting method, in particular, the manufacturing process of the side part can be carried out easily.

**[0021]** At least the parts A to C of the double raschel warp knitted fabrics of the present invention are disposed as one continuous knitted fabric. Thus, when the fabrics are cut together with paper pattern, a shoe can be formed, thus enabling the efficiency in the formation to be improved.

**[0022]** Then, on another surface of the upper material (corresponding to an instep cover) of the present invention, a fiber with a low melting point is used and at least a part thereof is fused. Since the fused part is reinforced by fixing knit stitches, in the case of reinforcing a part with which the calx is brought into contact or a part with which the both sides of the foot are brought into contact, by heating only these parts from the outside, the knit stitch can be reinforced. In this case, it is important that only outside of the upper material is fused. The inner surface side of the upper material is not preferably fused in order to maintain a flexible state because this side covers the foot. An example of the fiber with a low melting point includes, for example, an ethylene vinyl alcohol fiber yarn but is not limited thereto. It is preferable to use fibers whose melting point is 150°C to 200°C. The fiber with a low melting point may be used for an entire surface of the front surface of the double raschel warp knitted fabric. The fiber with a low melting point can be produced by mixing together with a fiber with 20 wt.% or more of high melting point material such as polyester. In the case of polyethylene terephthalate, the melting point is 260°C.

**[0023]** A constituent yarn of the back surface of the double raschel warp knitted fabric and a connecting yarn connecting the front surface to the back surface are preferably a polyester fiber yarn, and more preferably a polyethylene terephthalate fiber yarn. The other configuration of the present invention may be the same as that of the basic invention mentioned above.

**[0024]** The present invention can provide a shoe having lightweight and air permeability and further having high durability, and a double raschel warp knitted fabric used therefor.

Example

**[0025]** Hereinafter, the present invention will be explained in more detail by way of Examples. Note here that the present invention is not limited to the following Examples.

(Example 1)

**[0026]** Figure 1 shows a double raschel warp knitted fabric (thin melon-net fabric and back-woven half-net) used for a sport shoe according to one Example of the present invention. Shoe patterns 10 matched to paper patterns are placed continuously on one knitted fabric as shown in Figure 1. In the shoe patterns 10, a non-mesh structure part (A) 1a to 1e are disposed in a part surrounding the tiptoe and a part connecting to the shoe sole and stripe-shaped parts on the side surface of the foot (both sides). That is to say, 1a denotes a part surrounding the tiptoe and connected to the shoe sole; 1b to 1e denote stripe-shaped parts arranged on both surfaces of the foot (both sides); and 1f to 1g denote parts folded in the shoe sole. A cut 13 at the tip is a part that



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becomes circular shape at the site of the tiptoe when folded into the shoe sole. A constituent yarn of a front surface and a back surface of this double raschel warp knitted fabric was a multifilament fiber yarn of polyethylene terephthalate (total diameter of fibers: 84 dtex and number of filaments: 24) and a connecting yarn connecting the front surface to the back surface was a monofilament fiber yarn made of polyethylene terephthalate (total diameter of fibers: 33 dtex and number of filament: 1). Gauge of a knitting machine was 24 gauges, and the weight per unit area of an entire knitted fabric was 258.4 g/m$^2$.

**[0027]** To a part that may have a moderate strength and air permeability, that is, a part in the vicinity of the surface of the toe, a mesh structure part (B) 2 was placed.

**[0028]** To a part that needs air permeability, that is, the side surfaces of the foot (both sides), mesh structure parts (C) 3a to 3d were placed in a stripe.

**[0029]** A tongue part 12 was formed of a mesh structure part (C) 4 and a mesh structure part (D) 5 with higher air permeability.

**[0030]** The back surface was formed of the same weave as that of the non-mesh structure part (A) of the front surface.

**[0031]** This double raschel warp knitted fabric had a structure that is stretchable in the X direction and not stretchable in the Y direction.

**[0032]** When the bursting test was carried out in accordance with JIS L 1096 A method, the burst strength of the non-mesh structure part (A) was 1600 kPa; the burst strength of the mesh structure part (B) was 1500 kPa; the burst strength of the mesh structure part (C) was 1000 kPa; and the burst strength of the mesh structure part (D) was 930 kPa. When the air permeability test was carried out in accordance with the JIS L 1096 A method ("Frazil method"), air permeability of the non-mesh structure part (A) was 240 cm$^3$/cm$^2$/s; air permeability of the mesh structure part (B) was 255 cm$^3$/cm$^2$/s; air permeability of the mesh structure part (C) was 278 cm$^3$/cm$^2$/s; and air permeability of the mesh structure part (D) was 340 cm$^3$/cm$^2$/s. The thickness of this knitted fabric was 5 mm. Furthermore, the weight of double raschel warp knitted fabric used for one shoe was 20 g (in the case of 26.0 cm-shoe).

(Example 2)

**[0033]** Sport shoes were formed by using the warp knitted fabrics obtained in Embodiment 1. Figure 2 is a side view showing a shoe for a right foot. References numerals given to elements except for the elements of the shoe pattern in Figure 1 will be mentioned below. Reference numeral 6 denotes a reinforcing cloth (artificial leather) for a tiptoe part; 7 denotes a reinforcing cloth (artificial leather) for reinforcing eyelets for shoelace 11; 8 denotes a leather part for reinforcing the calx; 9 denotes a cushion part for covering the tarsus; and 14 denotes a shoe sole part formed of synthetic elastomer (EVA resin). Figure 3 is a perspective view showing the shoe of Figure 2 when the tongue portion is taken out of the shoe. Figure 4 is a side view showing the shoe of Figure 2 seen from the opposite side.

**[0034]** The weight of a 26-cm shoe was 133.1 g, which was significantly lighter as compared with the weight of about 150 g to 200 g of one of the conventional sport shoes of the same kind. This reduction in weight can be achieved by reducing the upper material by minimizing the amount of reinforcing materials as possible and by disposing a part requiring a satisfactory strength and a part requiring air permeability on one continuous warp knitted fabric so as to reduce sewing parts.

**[0035]** A test in terms of feeling of wearing, air permeability and durability was carried out by actually wearing the formed 26-cm shoes for one month. As a result, it was confirmed that the feeling of wearing, air permeability and durability were good and that the shoes had excellent functional properties as sport shoes. In particular, the shoes were suitable as shoes to be worn in long-distance running such as marathon.

(Example 3)

**[0036]** Figure 5 shows double raschel warp knitted fabric (thin melon-net fabric and back-woven half-net) used for sport shoes according to one Example of the present invention. A constituent yarn of a front surface of the double raschel warp knitted fabric is a multi-filament yarn made of ethylene vinyl alcohol (total diameter of fibers: 84 dtex, number of filaments: 24, amount of yarns: 78.76 g/m$^2$, and total ratio: 30.4%), and a constituent yarn of the back surface of the double raschel warp knitted fabric is a multi-filament yarn made of polyethylene terephthalate (total diameter of fibers: 84 dtex, number of filaments: 24, amount of yarns: 94.52 g/m$^2$, and total ratio: 36.5%); and a connecting yarn connecting the front surface to the back surface is a monofilament fiber yarn made of polyethylene terephthalate (total diameter of fibers: 33 dtex, number of filament: 1, amount of yarns: 85.73 g/m$^2$, and total ratio: 33.1%). Gauge of a knitting machine was 24 gauges, and the weight per unit area was 259.0 g/m$^2$. The thickness of this knitted fabric was 5 mm.

**[0037]** In Figure 5, reference numeral 30 denotes a shoe pattern on knitted fabric. On one knitted fabric, respective parts are placed continuously. For reducing the excess parts so as to increase the yield, the arrangement is changed from that shown in Figure 1. Reference numeral 31 denotes a part for covering the anterior side of the foot and 32 denotes a part for covering the posterior side of the foot. The configuration is different from that shown in Figure 1 in that two parts are combined into one continuous part. Reference numeral 33 denotes a tongue part; and 34 denotes a part to be attached to the posterior side face of the calx. The burst strength of each part is substantially the same as that



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in Example 1. The number of meshes (the number of holes per inch (25.4 mm)) is described below. In the below explanation, X direction denotes a width direction and Y direction denotes a longitudinal direction in Figure 5.

(1) a part 31a1 located above the toe, stripe parts 31a2 and 32a1 of the side part of the foot, a part 32a2 for covering the calx, and a part through which a shoelace passes in a tongue part 33c: 5.5 meshes in the lateral direction and 3 meshes in the longitudinal direction
(2) a tip part 31b of the toe, a side part 32b1 of the foot and a stripe part 32b2, and a part 34 to be attached to the side face of the posterior side of the calx: 11 meshes in the lateral direction and 6 meshes in the longitudinal direction
(3) an anterior side 31c1 folded into a shoe sole and a stripe part 31c2, a reinforcing part 32c1 of a side part of the calx and an edge part 32c2: 12 meshes in the lateral direction and 12 meshes in the longitudinal direction
(4) a central part 33a of the tongue part: 5 meshes in the lateral direction and 2 meshes in the longitudinal direction.
(5) a part 33b except for a central part and a part through which a shoelace passes: 6 meshes in the lateral direction and 3.5 meshes in the longitudinal direction.

**[0038]** This double raschel warp knitted fabric has a structure that is not stretchable in the X direction and the Y direction.

**[0039]** A shoe that is the same as that shown in Figures 2 to 4 is formed by using the shoe patterns 30 of a knitted fabric. Thereafter, side parts of the foot corresponding to the parts 1c and 1d of Figure 2 are fused and processed by heating thereof at 170°C. As a result, in the heated part, knit stitch structure became rigid, and thus reinforcement can be carried out.

**[0040]** The weight of one of the obtained 26-cm shoes was 133 g. A test in terms of feeling of wearing, air permeability and durability was carried out by actually wearing the formed 26-cm shoes for one month. As a result, it was confirmed that the feeling of wearing, air permeability and durability were good and that the shoes had excellent functional properties as sport shoes. In particular, the shoes were suitable as shoes to be worn in long-distance running such as marathon.

## Claims

1. A shoe (20) comprising:

   an upper material using a double raschel warp knitted fabric;

   the upper material including a first surface having a non-mesh structure and a second surface having a non-mesh structure part (A) (1a to 1d) and mesh structure parts (B) (C) (2) (3a to 3d)

   the non-mesh structure part (A) and the mesh structure parts (B, C) respectively having burst strengths A, B and C that satisfy the relationship: A > B > C;

   the shoe including a tiptoe region, a toe region positioned adjacent to the tiptoe region, a heel region, and two side regions that extend between the heel and toe regions;

   the non-mesh structure part (A) being disposed at the tiptoe region (1a) and partially at both side regions (1b to 1e);

   the mesh structure part (B) (2) being disposed adjacent the toe region; and

   the mesh structure part (C)(3a to 3d) being disposed partially at both side regions.

2. The shoe according to claim 1, wherein in accordance with a bursting test based on JIS L 1096A Method, the burst strength of the non-mesh structure part (A) is 1400 kPa or more and the burst strength of the mesh structure part (C) is 900 kPa to 1200 kPa.

3. The shoe according to claim 1 or 2, wherein the tiptoe region (6), the heel region (8) and an eyelet part (a)(7) of the shoe are reinforced.

4. The shoe according to any one of claims 1 to 3, wherein a tongue part (5) of the shoe comprises the mesh structure part (C).

5. The shoe according to any one of claims 1 to 4, wherein a constituent yarn of the first surface and the second surface, and a connecting yarn connecting the first surface to the second surface are polyester fiber yarns.

6. The shoe according to claim 1, wherein the upper material comprises a front surface having a mesh structure part and a back surface having a non-mesh structure; a constituent yarn of the front surface including a yarn having a melting point that is lower than the melting point of a constituent yarn of the back surface, and at least a part of the front surface is partially fused.

7. The shoe according to claim 6, wherein the constituent yarn of the front surface is an ethylene vinylalcohol fiber yarn.



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8. The shoe according to claim 6 or 7, wherein the constituent yarn of the back surface and the connecting yarn connecting the front surface to the back surface are polyester fiber yarns.

9. The shoe according to any one of the preceeding claims wherein at least the parts (A) to (C) are disposed in one continous knitted fabric.

10. A double raschel warp knitted fabric including one surface having a non-mesh structure and another surface having a non-mesh structure part (A) and mesh structure parts (B, C);
the non-mesh structure part (A) and the mesh structure parts (B, C) including burst strengths A, B and C satisfy the relationship: A > B > C, and
the parts (A) to (C) being disposed in one continuous knitted fabric.

11. The double raschel warp knitted fabric according to claim 10, wherein a constituent yarn of the first surface and the second surface and a connecting yarn connecting the first surface to the second surface is a polyester fiber yarn.

12. The double raschel warp knitted fabric according to claim 10, wherein the upper material comprises a front surface having a mesh structure part and a back surface having a non-mesh structure; and a constituent yarn of the front surface including a yarn having a melting point that is lower than the melting point of a constituent yarn of the back surface.

13. The double raschel warp knitted fabric according to claim 12, wherein the constituent yarn of the front surface is an ethylene-vinyl alcohol fiber yarn.

14. The double raschel warp knitted fabric according to claim 12 or 13, wherein the constituent yarn of the back surface and the connecting yarn connecting the front surface to the back surface are polyester fiber yarns.

15. Use of a double raschel warp knitted fabric according to any one of claims 10 to 14 for a shoe.

16. Use of a double raschel warp knitted fabric according to claim 15 for a shoe:

the shoe including a tiptoe region, a toe region positioned adjacent to the tiptoe region, a heel region, and two side regions that extend between the heel and toe regions;

the non-mesh structure part (A) being disposed at the tiptoe region and partially at the side regions of the shoe;

the mesh structure part (B) being disposed in the vicinity of the toe region of the shoe;

the mesh structure part (C) being disposed partially at the side regions of the shoe.



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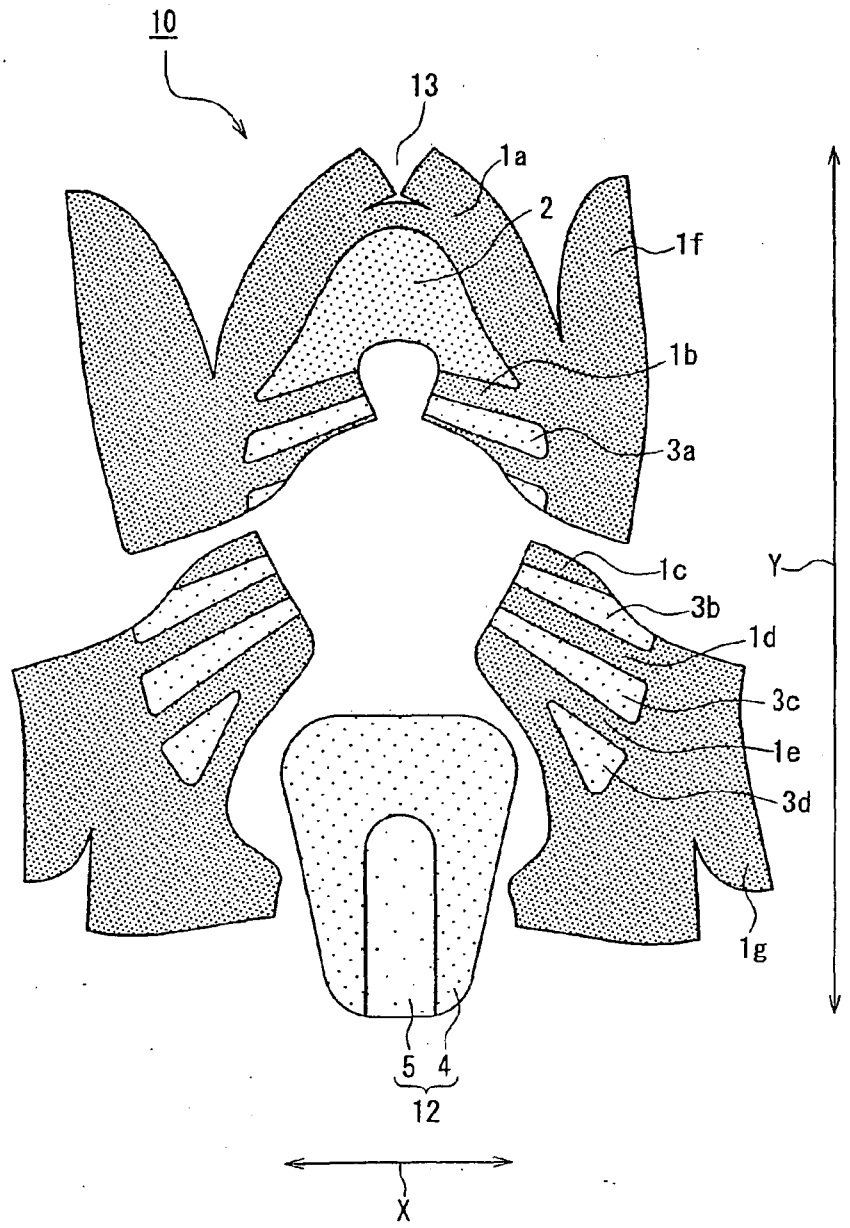



FIG. 1



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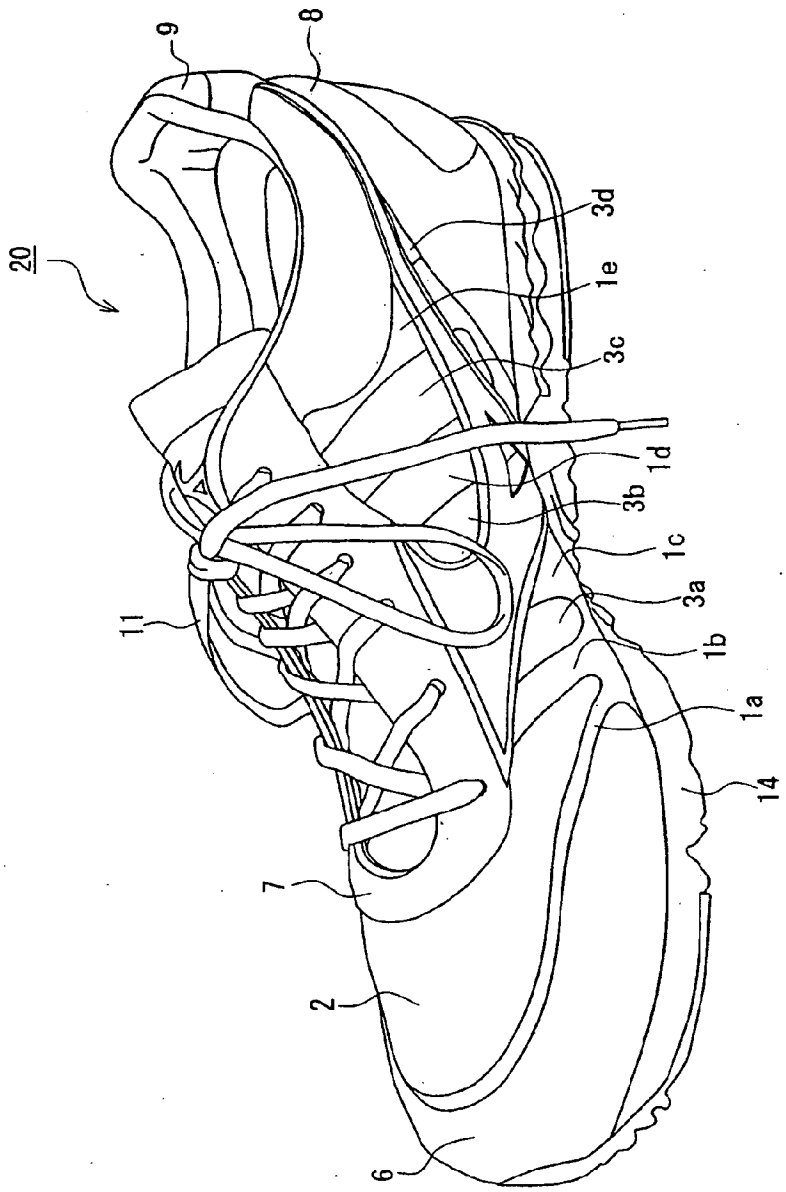



FIG. 2



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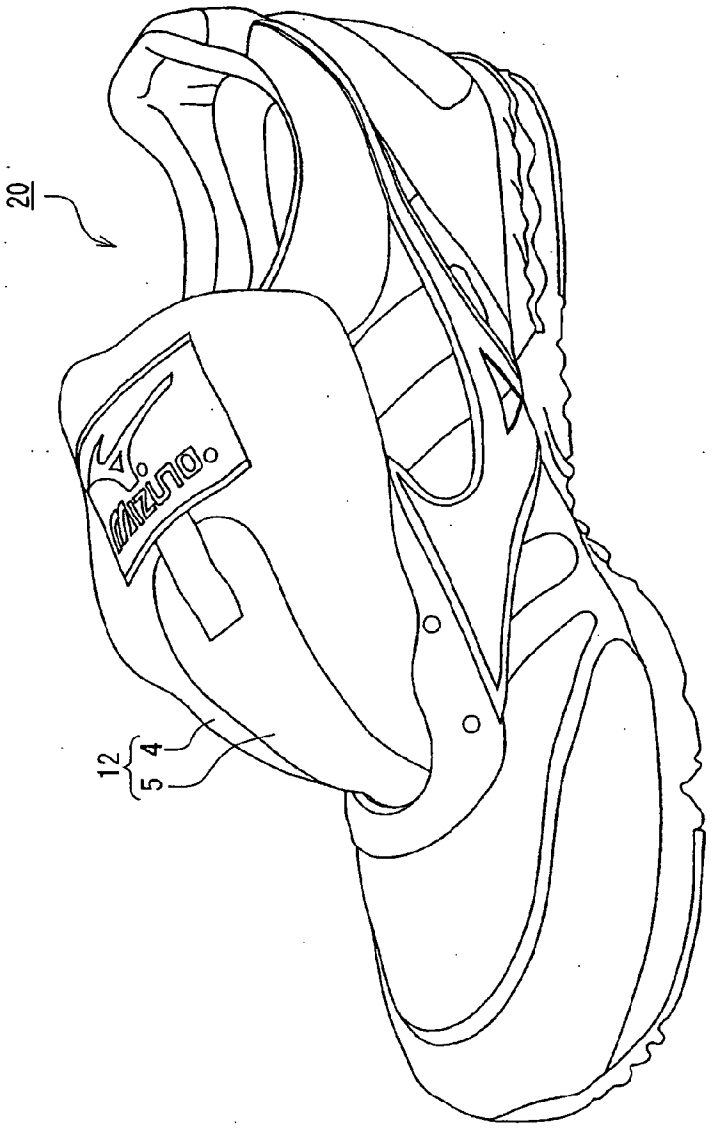



FIG. 3



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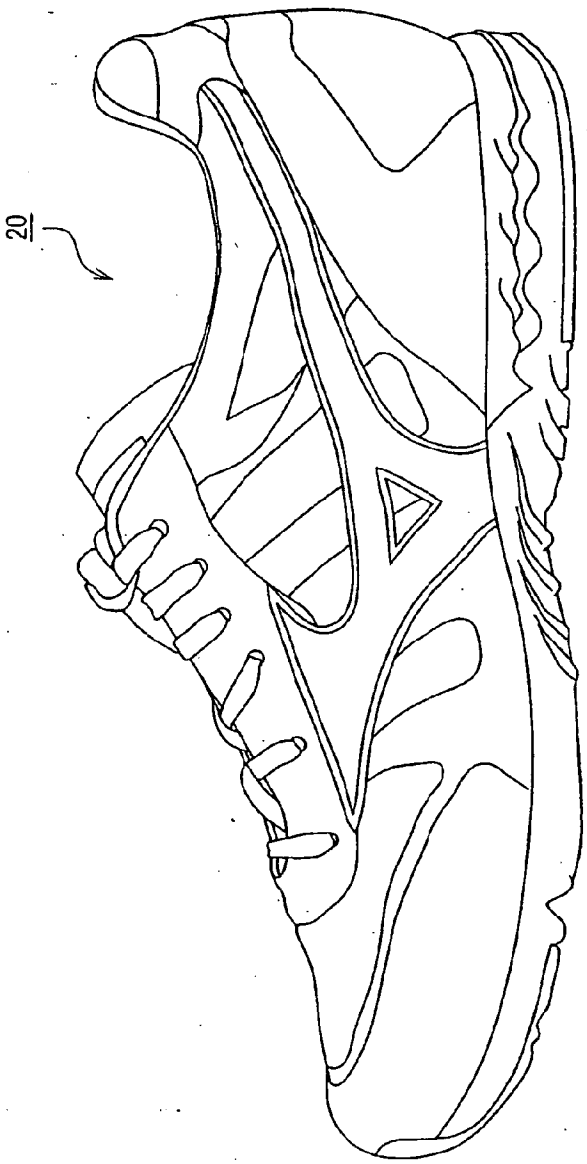



FIG. 4



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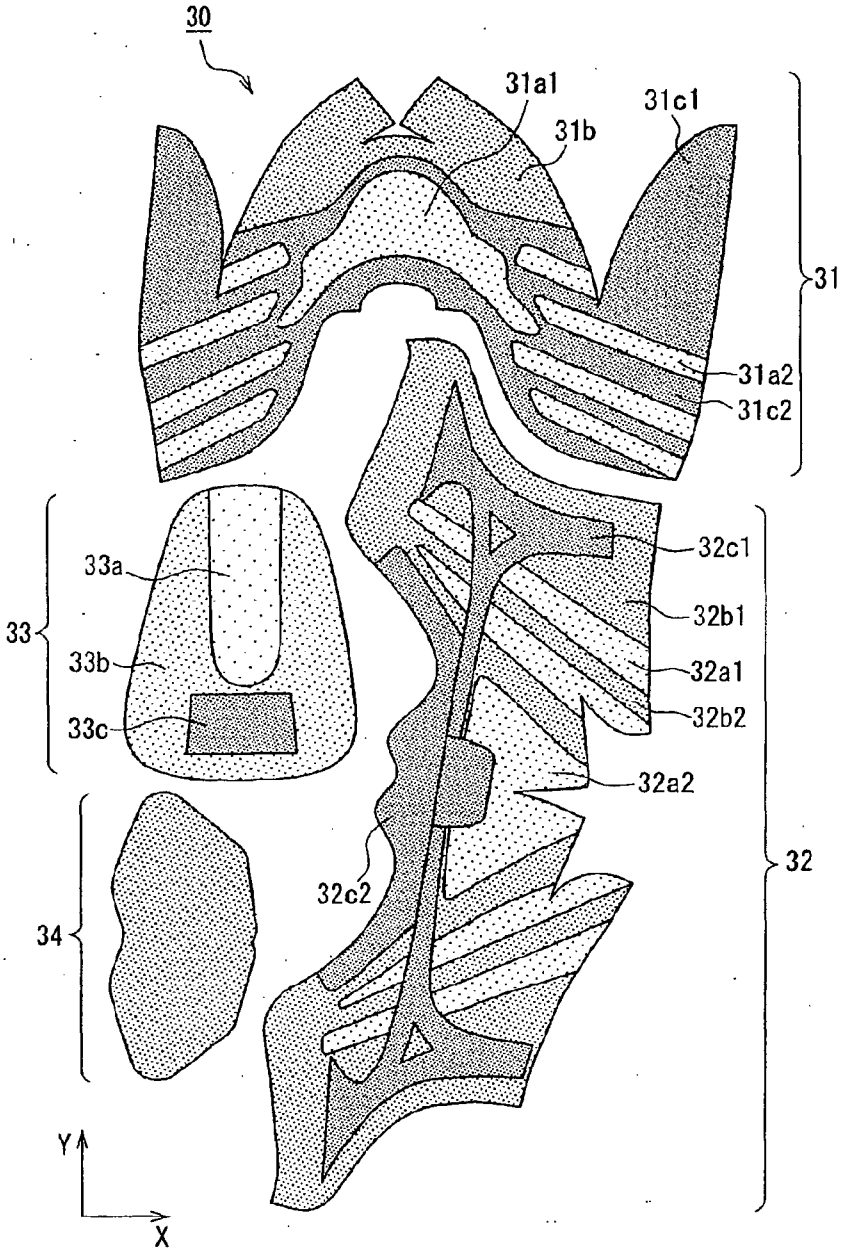



FIG. 5



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European Patent Office

# EUROPEAN SEARCH REPORT

Application Number
EP 04 00 0365

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.7) |
|---|---|---|---|
| A | PATENT ABSTRACTS OF JAPAN<br>vol. 1997, no. 06,<br>30 June 1997 (1997-06-30)<br>& JP 9 047302 A (MIZUNO CORP),<br>18 February 1997 (1997-02-18)<br>* abstract * | 1,10,15,16 | A43B1/00<br>A43B5/06<br>A43B7/06<br>D04B21/02 |
| A | PATENT ABSTRACTS OF JAPAN<br>vol. 2002, no. 07,<br>3 July 2002 (2002-07-03)<br>& JP 2002 065303 A (TOHO TENAX CO LTD),<br>5 March 2002 (2002-03-05)<br>* abstract * | 1,10,15,16 | |
| A | FR 2 319 488 A (CITC INDUSTRIES INC)<br>25 February 1977 (1977-02-25)<br>* the whole document * | 1,10,15,16 | |
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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A43B
D04B

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| The Hague | 22 April 2004 | Cianci, S |

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 00 0365

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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22-04-2004

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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| JP 9047302 A | 18-02-1997 | NONE | |
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| | | CA 2179108 A1 | 14-12-1996 |

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82



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# PATENT SPECIFICATION (11) 1 539 886

1 539 886

(21) Application No. 47899/75 (22) Filed 21 Nov. 1975 (19)

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(44) Complete Specification published 7 Feb. 1979

(51) INT. CL.² A43B 23/04 3/10

(52) Index at acceptance
A3B 10B2 1B4A 1C3 1J 8G





## (54) FOOTWEAR

(71) We, ASHWORTHS (SLIPPERS) LIMITED, a British Company, of Albion Mills, Albion Street, Elton, Bury, Lancashire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention concerns footwear, and more particularly relatively soft-topped footwear, such as slippers.

In the conventionally-employed techniques for making slippers and the like, one starts with a generally U-shaped upper blank. This is closed by applying the free end edges together and sewing them, as at the "heel" of the upper, if desired incorporating any requisite heel stiffening. Next, a previously-prepared sole-piece (also known as a "sock") is sewn in place to the lower edge of the upper. If the top edge of the upper requires to be folded over and hemmed down, this is done too at this stage. The resultant assembly is then applied to a mould whereby a combined sole and heel of appropriate plastics material or rubber is injection-moulded in place, covering the undersurface of the sole-piece and the seam between the latter and the upper. After cooling and setting of the plastics material or rubber, an insole (or inner sock) is inserted to overlie the inner surface of the sole-piece, this insole being caused to adhere in place.

Thus, with these conventional techniques use is made essentially of three separate components two of which have to be united prior to the moulding of the sole and heel, and the assembly has to be allowed to cool prior to the final step of sticking the insole in place.

An object of the present invention is to provide a form of upper blank the use of which simplifies the footwear-making techniques above discussed.

With this object in view, the present invention provides a blank, for use in making an article of footwear, comprising a U-shaped panel which serves to form the footwear upper, characterised in that said U-shaped panel has formed integrally therewith a sole-piece which is contiguous with and extends from the outer edge of one limb of the U, the free outer edge of the U-shaped panel and the free edge of the sole-piece having registration marks to facilitate securement thereof together and being formed to define no discernable allowances.

The invention further includes a method of making an article of footwear, using a blank as aforesaid, which comprises closing the upper by bringing together the free heel and edges of the limbs of the U-shaped panel and securing said heel end edges together, connecting the free edge of the sole-piece to the corresponding lower free edge of the upper using the said registration marks on said edges to facilitate their alignment; and moulding a combined sole and heel plastics material or rubber, to the assembly so formed.

The invention further includes, of course, an article of footwear made by this method.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:—

Fig. 1 is a plan view of a preferred embodiment of the blank of the invention;

Fig. 2 is an enlarged section taken on the line 2—2 of Fig. 1 to illustrate the nature of the material of which the particular blank of Fig. 1 is made;

Fig. 3 is a perspective view illustrating a first step in a method of making an article of footwear using the blank of Fig. 1;

Fig. 4 is a plan view illustrating subsequent steps in the method;

Fig. 5 is a perspective view illustrating a subsequent stage in the method;

Fig. 6 is a perspective view illustrating the completed upper and insole assembly ready for a sole and heel to be applied thereto; and

Fig. 7 is a diagrammatic sectional view illustrating the assembly of Fig. 6 about to have a sole and heel moulded thereon as a final stage in the method of making the article of footwear.

Referring first to Figs. 1 and 2 of the drawings, these figures illustrate a preferred embodiment of the blank of the invention, which is for use in making a soft-topped


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article of footwear, for example a slipper or casual shoe. The particular blank, indicated generally by the reference numeral 10, comprises a surface fabric layer 11, for instance of coloured interlock knit fabric, a cushioning layer 12 of a resilient foamed material such as polyurethane, a bonding layer 13, e.g. of unbleached interlock knit fabric, and an outer layer 14 of an elastomer imparting an appearance or feel of soft and pliable leather, but of course, any suitable upper material may be used. In Fig. 1, the blank is shown with the surface fabric layer 11 uppermost.

As can be seen from Fig. 1, the blank 10 comprises an upper panel 15 generally of U-shape providing side-by-side limbs 16, 17. The limb 16 has formed integrally therewith a sole piece 18, the overall shape of which conforms to a conventional sole-piece or sock, with one side edge of said sole-piece contiguous with the corresponding side edge of the limb 16, free outer edge 23 of the upper panel 15 and free outer edge 22 of the sole-piece having no discernable allowances other than registration marks 26, 27, 28, 30, 31 to facilitate securement thereof together, as will be described later.

Figs. 3 to 7 illustrate the steps involved in making a slipper or other soft-topped article of footwear using the blank of Figs. 1 and 2.

Firstly, the free heel end edges 19 of the limbs 16, 17 of the U-shaped upper blank 15 are brought together, with the surface fabric layer 11 outwards, and then these free heel end edges 19 are secured together with one or more lines of stitching as indicated at 20, as shown in Fig. 3. Thereupon, a binding tape 21 is sewn over the heel end edges 19 at the resultant seam or join, and the closed upper is then turned right-side-out as shown in Fig. 4.

If it should be desired to reinforce the footwear article's heel, appropriate reinforcing panels (not shown) are stitched in place instead of, or in addition to, the binding tape 21, prior to turning right-side-out.

The next step is to secure the sole-piece 18 in position. As is shown in Fig. 5, this is done by sewing the free outer edge 22 of the sole-piece 18 to the corresponding free outer edge 23 of the upper panel 15, as at 25, the edge 23 of the upper panel 15 being pleated where necessary, for example around the toe region as indicated at 24 in Fig. 5. To ensure proper registration of the various parts of the edge 22 and 23, during this sewing operation, the registration marks 26, 27 and 28, which are in the form of pointed protuberances, on the sole-piece 18 are registered respectively with the heel stitching 20 and with the corresponding registration marks 30 and 31 on the upper panel 15.

This securement of the sole-piece 18 having been completed, inner free edge 32 of the upper panel 15 is finished by folding inwards as a hem 33 and securing it in position by stitching, for example of a decorative configuration, as indicated at 34 in Fig. 6.

As a final stage in the making of the slipper or other article of footwear, the assembly, formed as above described and indicated by the numeral 35, is pulled onto a last 36 which is then positioned accurately in a heated multi-part mould 37 so as to define a mould space 38 corresponding to the desired outer configuration of a combined sole and heel of the slipper. An appropriate plastics or rubber material (not shown) is then injected into the mould space 38 thereby to mould said combined sole and heel onto the underside of the sole-piece 18, overlapping the stitched connection between the latter and the upper panel 15.

Upon removal from the last, any moulding sprue is cut away and the completed article of footwear is left to permit cooling and setting of the combined sole and heel, being otherwise substantially finished upon removal from the last and not requiring the addition of any further components.

The resultant slipper or other article of foatwear is smart in appearance and snug in wear. Its primary advantage lies in the fact that it is significantly more economical to produce than in the case where traditional techniques are employed. Only one component is employed for the upper and sock, compared with three components in the traditional manufacture. Furthermore, the amount of sewing is less, and the steps of applying adhesive and assembling a component after moulding-on of the sole and heel are obviated.

Naturally, the invention is not confined to the precise details of the foregoing example, and variations may be made thereto within the scope of the following claims. Thus, it will readily be understood that the configuration of the blank and the material from which it is made may differ from what is illustrated, and the registration marks may be, for example, notches or small perforations. Naturally, decorative panels and/or trimmings, braids or ribbons may be provided on the finished article. The invention is not confined to the production of slippers but can be employed in relation to various styles of casual and soft-topped footwear.

WHAT WE CLAIM IS:—

1. A blank, for use in making an article of footwear, comprising a U-shaped panel which serves to form the footwear upper, characterised in that the said U-shaped panel has formed integrally therewith a sole-piece which is contiguous with and extends from the outer edge of one limb of the U, the free outer edge of the U-shaped panel

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and the free edge of the sole-piece having registration marks to facilitate securement thereof together and being formed to define the discernable allowances.

2. A blank as claimed in Claim 1, wherein the registration marks are in the form of pointed protuberances, notches or perforations.

3. A blank as claimed in Claim 1 or 2 and which is of elastomer-coated fabric.

4. A blank as claimed in Claim 3, in which a cushioning layer, of resilient foamed material, is bonded to the fabric layer.

5. A blank, for use in making an article of footwear, substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

6. A method of making an article of footwear, using a blank as claimed in any preceding claim, which comprises closing the upper by bringing together the free heel end edges of the limbs of the U-shaped panel and securing said heel end edges together, connecting the free edge of the sole-piece to the corresponding lower free edge of the upper using the said registration marks on said edges to facilitate their alignment; and moulding a combined sole and heel, of plastics material or rubber, to the assembly so formed.

7. A method as claimed in Claim 6, wherein a binding tape is sewn over the heel end edges at the joint or seam at the heel of the upper.

8. A method as claimed in Claim 6 or 7 wherein a reinforcing panel is stitched to the upper at the heel thereof.

9. A method as claimed in Claim 6, 7 or 8 wherein the inner free edge of the upper panel is finished by folding it inwards as a hem and securing it in position by stitching.

10. A method as claimed in any of claims 6 to 9 wherein the combined sole and heel is moulded-in so as to overlap the stitched connection between the sole-piece and the upper panel.

11. A method of making an article of footwear substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

12. An article of footwear made by the method of any of claims 6 to 11.

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and
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Cursitor Street,
London, E.C.4.

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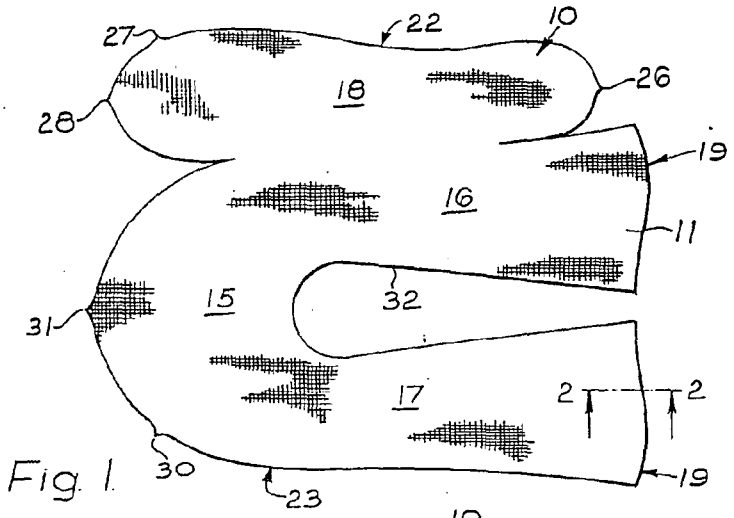



Fig. 1.

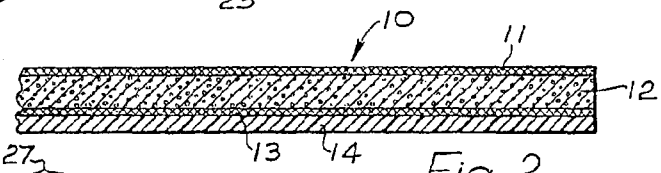



Fig. 2.

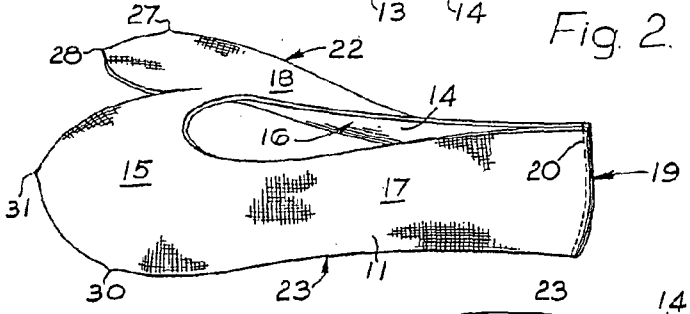



Fig. 3.

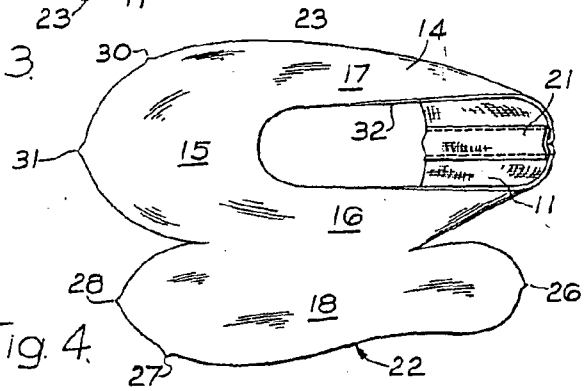



Fig. 4.

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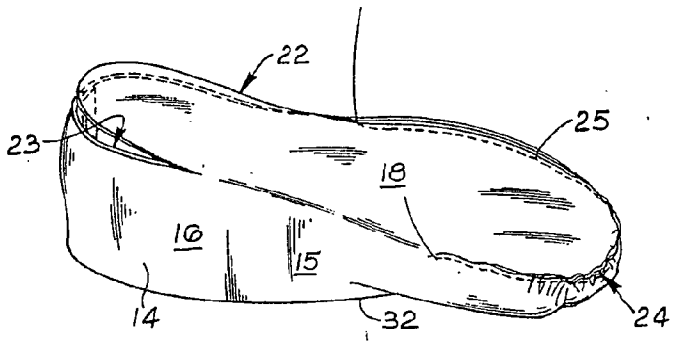



Fig. 5.

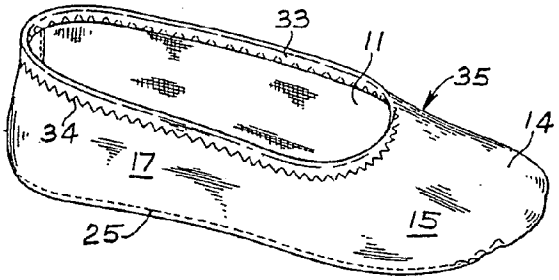



Fig. 6.

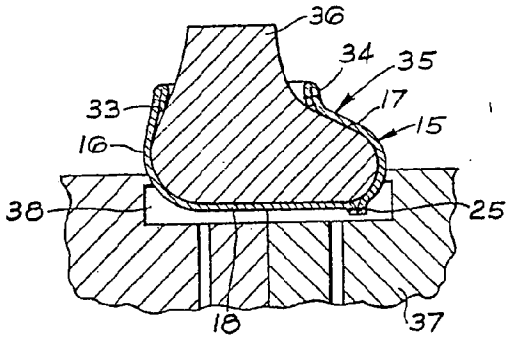



Fig. 7.

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| 251,305 | 3 October 1988 (03.10.88) | US |
| 279,308 | 28 November 1988 (28.11.88) | US |
| 347,813 | 4 May 1989 (04.05.89) | US |

(60) Parent Applications or Grants
(63) Related by Continuation

| | |
|---|---|
| US | 251,305 (CIP) |
| Filed on | 3 October 1988 (03.10.88) |
| US | 279,308 (CIP) |
| Filed on | 28 November 1988 (28.11.88) |
| US | 347, 813 (CIP) |
| Filed on | 4 May 1989 (04.05.89) |

(71) Applicant *(for all designated States except US)*: RBFPT, INC. [US/US]; 207 Lochside Drive, Cary, NC 27511 (US).

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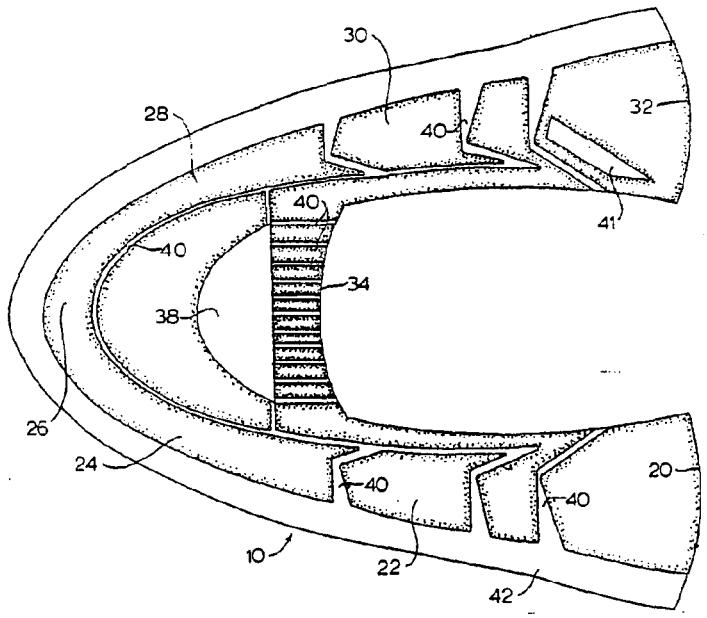
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(54) Title: HEAT EMBOSSED SHOES




(57) Abstract

A labor-saving shoe making process provides multilayered, heat embossed, shoe components including a one-piece upper. The components comprise a resilient foam layer and other layers for flexibility, strength and durability. Embossing of the shoe components serves to reduce the thickness of the material, provide sealing of the material, provide form and shape to the shoe, and allow strain control management. The connecting of shoe components is accomplished in part through the use of thermoplastic rivets which are heated and melted by the application of a high frequency field.

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# HEAT EMBOSSED SHOES

## Background of the Invention

The process of shoe manufacturing is generally very labor intensive and the most expensive component of the manufacturing process today is labor. For a particular shoe style, after the pattern is made for all sizes and the production schedule of manufacturing steps is determined, the labor-intensive assembly process occurs. The assembly process for a shoe having its specific design and number of pieces begins with the process of cutting the upper material. With a more complicated shoe pattern or with more pieces in the shoe design, more elaborate cutting procedures must be designed to minimize waste of materials.

In a typical shoe manufacturing process, after the upper pieces are cut, they are prepared for stitching in the fitting process. The upper pieces are first marked for stitching. The edges of the pieces that are to be joined to other pieces must be reduced in thickness in the skiving process in which a machine cuts a bevel on the edge of the material on the flesh side, or underside of each piece. Some or all of the upper parts, particularly thick leather uppers, may also need to be reduced in thickness or made more even in thickness by a "splitting" machine. Each of these steps requires handling of the individual upper pieces and skilled manipulation to achieve the desired change in the upper.

After the upper pieces are prepared by skiving and splitting, in a typical process, the interlining is cemented to the upper in the doubling process to add thickness and to improve the comfort and smoothness of the interior of the shoe. This requires careful

alignment of the interlining and the upper. To further improve the comfort and to add strength, the insides of the seams are often "rubbed" to reduce their bulk and then reinforced with fabric tape that is adhesive coated. Similar fabric tape is also often applied to the edges of the uppers that are around the top of the shoe opening. Each of these top edges as well as other visible edges may also have cement applied to them prior to folding them into a narrow fold and heat-cementing or stitching the fold in place to provide a neat appearance to the edge.

If the shoe has eyelets, these are applied by a machine that punches, spaces, and aligns the holes and sets the eyelets in the appropriate place. The eyelets then are laced by a machine with thread so that the piece(s) are held in the correct position in the subsequent steps.

The upper pieces are stitched together after or during the fitting process depending on the manufacturing steps for the particular shoe. The stitching process may be by machine or by hand and may include reinforcement stitching at the front corners in laced shoes and decorative stitching.

In the final segment of the traditional shoe manufacturing process, the uppers are then shaped over a last (a shoe form shaped like a foot). A variety of lasting techniques may be used to assemble the upper and interlining over the last and to fasten them to the insole. In this process the heel, toe and side portions of the shoe upper are pulled into place around the last so that they are in the desired shape of the final shoe product. The shoe upper may then remain in that pulled position for several days to set the shape.

Alternatively, the position of the upper may be set by a heat setting process. The bottoms of the shoes are added in the "bottoming" process by cementing, molding or sewing. Laces are then added and the product is boxed and warehoused.

Summary of the Invention

Provided with the present invention is a component of a shoe comprising a multi-layered material embossed in a manner which serves several functions, including but not limited to closing or sealing of edges, incorporation of functional design or pattern lines to facilitate flexing for contouring to maintain shape, and for strain management. The embossing seals the layers of the material together at the edge and reduces the thickness of the material in the embossed regions. One layer of the multi-layered material is a breathable porous foam which, when subjected to heat, or other forms of fusing energy, becomes viscous to a point that an internal bonding of the foam cell matrix is accomplished.

The shoe component is any one of a number of different elements of the shoe. Possible components include an entire one-piece upper or overlay portions. The shoe component may have embossing away from the edges of the material, such as embossing to facilitate design or pattern. Such embossing serves to control shape and texture of the shoe component, and may additionally serve to provide specific strain performance factors in end use application.

Also provided in the present invention is a method of fastening together portions of a shoe. The method involves aligning the shoe portions and inserting a thermoplastic connector through the material of the shoe

portions. The thermoplastic connector is then subjected to sufficient energy to soften the thermoplastic connector. The shape of the connector is then deformed such that when it hardens its new shape restricts the shoe portions from separating from one another.

The first thermoplastic connector may be inserted through a second thermoplastic member as well as the aligned portions of the shoe. The connector may be subjected to a high frequency electromagnetic field of sufficient energy to melt the two pieces of the connector to the point that they adhere to one another, thus securing the shoe portions together.

Brief Description of the Drawings

Figure 1 is a sectional perspective view of the layered upper material prior to heat embossing.

Figure 2 is a sectional perspective view of the layered upper material after heat embossing.

Figure 3 is a plan view of a first embodiment of an embossed pattern for an upper.

Figure 4 is a plan view of a second embodiment of an embossed pattern for an upper showing one side of the upper.

Figure 5 is a plan view of a third embodiment of an embossed pattern for an upper.

Figure 6 is a plan view of a fourth embodiment of an embossed pattern for an upper.

Figure 7 is a plan view of a fifth embodiment of an embossed pattern for an upper.

Figure 8 is a perspective drawing of a shoe made from the first embodiment of the upper.

Figure 9 is a schematic drawing of placement of uppers in a multiple-upper cutting pattern.

Figure 10 is an elevational view of an embossing mold as used in the process of the invention.

Figure 11 is a partial sectional side view of the upper material on the bottom mold plate prior to embossing.

Figure 12 is a partial sectional side view of the upper material on the bottom mold plate after embossing.

Figure 13 is a perspective view of a mold used according to the process of the invention.

Figure 14 is a side view of a shoe having a quarter overlay secured by a thermoplastic rivet.

Figure 15 is a side view of the thermoplastic rivet of Figure 14.

Figure 16 is a plan view of a one-piece upper used in the shoe of Figure 14.

Figure 17 is a side view of a shoe having a quarter overlay, a forefoot stabilizer, and a tougue secured by thermoplastic rivets.

Figure 18A is a plan view of the one-piece upper used in the shoe of Figure 17.

Figure 18B is a cross section of Figure 18A.

Figure 19A is a plan view of two quarter overlays of a thermal plastic urethane material.

Figure 19B is a cross section of Figure 19A.

Figure 20A is a plan view of a forefoot stabilizer of a thermal plastic urethane material.

Figure 20B is a cross section of Figure 20A.

Figure 21A is a plan view of two quarter overlays of a heat embossed foam/fabric material.

Figure 21B is a cross section of Figure 21A.

Figure 22A is a plan view of a forefoot stabilizer of a heat embossed foam/fabric material.

Figure 23A is a perspective view of a thermoplastic fastener.

Figure 23B is a side view of an unfolded thermoplastic fastener.

Figure 23C is a rear view of a shoe upper partially fastened at the heel by a thermoplastic fastener.

Figure 24 is a side view of a casual shoe embodying the present invention.

Figure 25 is a plan view of a main upper portion used to form the shoe of Figure 24.

Figure 26 is a plan view of a quarter overlay in the shoe of Figure 24.

Figure 27 is a cross sectional view of the overlay of Figure 26 taken along line 27-27.

Figure 28 is an alternative quarter overlay.

Figure 29 is a side view of a shoe using the upper of Figure 28.

Detailed Description of the Preferred Embodiments

The present invention comprises a method for making shoes and shoe components and the shoes and shoe components made by this process.

Most types of shoes may be made with the method of the invention. Thus, flat heeled shoes, high-heeled shoes, and shoes with buckles, straps connected to both sides of the shoe and extending across the top of the foot, lacing, velcro attachment straps or other fasteners may be made with the process of the invention. Additional decorations or cut outs may also be added to the basic show pattern.

As shown in Figures 1 and 2, the upper 10 is preferably comprised of a plurality of layers and most preferably of three layers. Additional layers may be

added for durability or strength. A process known as a combining process which is well known in the footwear manufacturing field, may be used to make a layer of fabric adhere to each side of a foam core 12 layer. In the preferred embodiment, the layers are held together by neoprene cement. The bottom sheet (lining) is placed in a mold and coated with cement and then the foam layer is placed on the lining. Finally, another layer of cement is applied and the fluid layer is added. The mold is then closed to press the layers together. Other methods of layer formation may be used.

In a preferred embodiment, the layers are held together by adhesive systems of a thermo-set (cross-linked) nature. However, adhesives in the thermoplastic family may also be used providing they exhibit melting properties in excess of the process temperatures associated with the other components of the material. Alternatively, flame lamination techniques can be used which eliminate the need for adhesives altogether.

A preferred core material 12 is a foam product of the polyurethane family of an ether origin (i.e. polypropylene glycol), which is treated with a diisocyanate in the presence of water and catalyst agents. Density of preferred foams run 1.5 - 4.0 lbs/ft but foams of higher and lower density have application in some end use catagories. Many foam core materials originate from variations inside of the polyurethane family. Others utilizing polymer backbones which fall outside the polyurethane group can also be used as core materials.

In one preferred embodiment, the outer layer is a warp knit fabric classified as "tricot." The term refers

to a fairly wide range of finished goods, some of which are acceptable in a shoe molding process, and some which are not. In particular, two bar knits such as full tricots and warp lockknit have shown particularly good characteristics with regard to the molding process as well as end use.

In another preferred embodiment, the outer layer is a weft knit fabric of jersey, rib, or purl designation. Variations of the jersey designation show particularly good properties due to their dimensional equality in elasticity. Many other variations of weft knitted fabric have also shown good success in the process and end use.

In still another preferred embodiment, the outer layer is of the woven classification. In utilizing woven structure fabrics in the fabrication process, success is more dependent upon yarn schemes than in knit fabrics. While a characteristic of knitted structures is fabric stretch or elasticity, wovens possess lower stretch values due to the somewhat linear relationship between fabric and yarn width/length. Therefore, in utilizing woven materials in the process, it is necessary to focus on yarn elasticity properties. Methods of incorporating elasticity in yarns are well known and may include texturing or using bi-component or bi-constituent yarn or fiber.

A different preferred embodiment uses an outer layer made of a product of the leather designation. Such leathers may be derived from cow, steer, bull, water buffalo, pig, calf, etc. Hides can be tanned by methods which produce leather products compatible to the shoe fabrication method of the present invention. Considering the durability of general leather products, a property necessary to use leather successfully is

multi-directional extension with a low corresponding loss of basic strength properties such as tear. In one application, this is accomplished by splitting the leather hide down to relatively low gauge (0.4 - 0.6 mm.) and laminating the resulting veneer to a substrate of substantial properties. Substrate nomination is contingent upon final component requirements.

In another preferred embodiment, the outer layer is of synthetic polymer products such as polyurethane, P.V.C., or synthetic rubbers, in either cellular or solid state. Industrial processes may be used to to fabricate products that use synthetic skins or coatings on a fabric substrate. Two such methods used extensively in the industry are "wet" and "dry" processing. Because of their low cost, such materials can be engineered in a multitude of methods to produce a wide range of physical properties and appearances.

Considerations governing choice of inner and outer layer materials include embossability of the outer layer, which includes scorch resistance to heat but also requires ability to take the embossing and retain the form in conjunction with the foam layer; sufficient tear strength of one or both layer; comfort of the inner layer; durability of both layers; appearance of the outer layer; and flexibility of both layers.

The uppers 10 are cut from the embossed, layered material using a variety of methods. These include, but are not limited to, standard knife edge die, knife edge gang die, dual function mold/die method, automated vertical die cutting, automated roller die cutting, automated laser method, and template/guide automated cutting. The die or template may be designed to cut one or more uppers at a time.

One example is the spacing of four upper patterns 18 as shown in Figure 9 on a single cutting die or template guide will allow interlocking of the patterns on the upper material and will minimize material waste. Generally, a square sheet of material about the size of the mold is used. After embossing, the embossed sheet is demolded and the molded upper is then cut out of the square sheet. A gang cutting die with a template guide is generally used for a multi-cavity mold.

The shape of the upper 10 is constrained by the shape and size of the foot but may be designed for a wide variety of shoe styles. As shown in Figure 3, beginning on one side of the shoe, the one-piece shoe upper 10 extends in a "U" or "V" shape from a first central back side 20 of the upper to a first shoe side 22 to the first side front 24, to the toe area 26; and then the second side extends in mirror image to the first side from the toe area 26 to the second side front 28, the second shoe side 30 and the second back side 32 of the upper 10. The dotted line in Figures 4-7 show the central point on each side of which the shape of the shoe is a rough mirror image of the other side, the difference between sides being that the shoe side 22 or 40 which is on the inside of the foot may be cut with a small indentation or other variation to assist in lasting the side of the shoe that will be on the inside of the foot. A strap 34 may extend over the top of the foot connecting the sides 22,30 or the side fronts 24, 28 (Figures 3 and 4); or each side may have a laceable strap 36 (Figures 5 and 6) or a strap from the other side. The upper 10 over the top of the foot may be solid without a cut away area 38 or there may be no strap(s) at all (Figure 7).

Before the layered material is cut (trimmed), it is placed in a heat molding press to emboss a design 40 on the material and to flatten the edges 42. The embossing process heat-fuses the edge seams including the upper edges 48 thus making the multi-layered material totally enclosed without stitching the edge seams and thus enables the labor-saving use of the one-piece upper.

Embossing 40 in the toe area 26 and side fronts 24,28 (Figure 3) helps maintain the toe box shape and embossing lines 40 on the strap 34 help curve the strap across the instep. Additional embossing adds to the rigidity of the shoe upper so that it better retains a desired shape. All of the embossing may be shaped for aesthetic styling. Edge 42 is the lasting margin that is lasted under during the lasting process. A logo may be placed on the shoe in a logo area 41 embossed on the shoe. The design may be formed on any portion of the shoe. In Figures 3-7, a variety of side designs are shown. The design may extend across the strap 34 as shown in Figures 3-4. It is important to note that the heat fusing and embossing of a design on natural materials such as cotton or leather as well as on nylons, polyesters, and other synthetic materials to form a three-layered laminate shoe upper is a unique and important aspect of this invention.

Embossing additionally serves to manage strain in end use. Since embossing lines are used extensively to create designs and patterns, it is possible to use these points, or add additional points which become part of the design pattern. This embossing then serves to control upper component strain by "locking off" outer shell or substrate fiber length. This technology serves to provide the shoe designer with unlimited control over

shoe upper end use dynamic properties, by allowing extensive adjustment of specific modulus properties in locations of stress and associated strain. For example, it is well known that basketball shoe top collars which are properly functional stretch to a degree to allow the wearer a snug fit around the lower portion of the leg when fully laced. However, the shoe portions known as the in/out quarters, when properly engineered, require stretch properties which are considerably less than those of the top collar. By using the described method, a shoe designer may make function an inherent part of the shoe design. The method allows function to be incorporated into the shoe in the fabrication step itself.

A typical embossing mold 100 which is used in the process of the invention is comprised of hydraulic cylinders 102 and 104 that drive a top press plate 106 against a bottom press plate 108, while mold 110 is located in between (Figure 10). Both of the press plates 106,108 contain heating elements 112 and 114. The heating elements 112,114 heat the press plates 106,108 which in turn heat the top mold plate 116 and the bottom mold plate 118 to the desired temperature. It is important to note that it is possible to use different temperature settings between the top press plate 106 and the bottom press plate 112 during the molding operation. This allows the top mold plate 116 to be either a higher or lower temperature than bottom mold plate 118 of mold 110 during the same molding process, thus allowing a more heat sensitive material such as thermoplastic urethane or PVC to be used on one of the surfaces.

For example, Figures 11 and 12 show partial cross sections of mold 110 and an upper prior to and during the embossing process. The use of mold alignment pins 120 on

one of the mold plates as shown in perspective view in Figure 13 and mold pin alignment holes 122 enables proper alignment of the mold plates 116, 118. If outer layer 14 happens to be a heat sensitive material such as PVC, mold press plate 106 may be set at a lower temperature so as not to heat top mold plate 116 above the softening point of layer 14. The temperature of bottom mold plate 118 may or may not need to be increased to compensate for the lower temperature of top plate 116 in order to achieve the proper heat fusing of layers 14 and 16 to foam core 12. After the desired heating time, the top press plate 106 is raised and the embossing mold 110 is removed. The embossed, molded upper is removed and is ready for trimming of the excess material. In a preferred method of the invention with polyurethane foam, a three minute heating cycle at 200 degrees C is used. This temperature, in the presence of molding pressure, is adequate to accomplish internal cell wall bonding. Such bonding is a consequence of the heat and pressure which renders the cell matrix viscous to a point of internal tack. This internal tack accomplishes setting of the areas of embossing. Although the heating of the foam is likely to be to a temperature less than its melting temperature, the embossed regions are here referenced as melted regions. Leather products, fabrics of natural and synthetic fiber, and synthetic material of P.V.C or polyurethane in combination with the foam can withstand this heating treatment without distortion or degradation of original physical properties.

As an alternate method of embossing, ultra-sonic or high frequency welding techniques could be used for embossing materials such as certain plastics that are not porous or discontinuous and have the requisite

characteristics to enable embossing upon exposure to the high frequencies. High frequency heat is produced by using a transformer to raise the main voltage, a rectifier to change alternating current to direct current, and an oscillator valve to stop and start the current at speeds of about 28 million cycles per second or greater, to establish a field between two metal plates.

High frequency heating differs from radiant and conducted heat in that the temperature is raised uniformly throughout a material without a necessary waiting period for heat to spread from an exterior heat source to the interior of the material. In using high frequency heating with the invention an oscillating electronic field is created between two surfaces between which is positioned the upper material. Exposure to this field results in movement of the molecules in the upper and uniform generation of frictional heat throughout the upper. The use of a high frequency heating field plus pressure from the protruding portions of a mold result in the embossed design on the upper. The mold may also be used to cut the perimeter of the upper by having a raised edge around the outside edge of the mold.

High frequency welding with a welding die also may be used to fuse two pieces of material, such as the two back edges of the upper, or to add extra components to the upper (such as a tongue, trim, buckles, etc.). High frequency (HF) welding is particularly suited to such materials as PVC and would allow the fusing of color pigments or appliques to the embossed areas.

After the upper 10 is completely embossed, a back strip 44 is attached to the back sides 20, 32 of the upper 10 using stitching methods known in the art as

shown in Figure 8. The back strip 44 may be a straight narrow strip of 3/8 to 1/2 inch width and approximately double the length of the backside so that it may be sewn to both the inside and outside of the back shoe seam forming a fold 46 at the top edge 48 of the shoe 50. Alternatively, the back strip 44 may only be placed on the exterior to the shoe 50. The back strip 44 may also be decoratively designed in color and/or shape. If the back strip 44 is omitted, an alternative method of attaching the back sides of the upper, such as overlapping the back sides and stitching, or heat embossing the two sides together may be used.

According to a method of the invention, the shoe 50 is lasted with any of several conventional techniques. Preferably, of these techniques, cold cement lasting is used because it is the simplest lasting method and is less costly than others, but California lasting (full sock lasting) may also be used. The insole board that is used is preferably made of non-woven, cellulose base fiber board prepared by conventional techniques, but it may be made of other hard or soft fiber lasting boards. The sock liner preferably is made of Tricot-covered rubber sponge, but it could be made of any fabric-covered cushioning material. When the shoe is lasted, lines A and B are aligned in parallel in shoes with a strap 34 (Figure 3).

Following attachment of the back strip and lasting, the bottom 52 of the shoe is attached, preferably by a cementing method. Cold cementing is preferably used because it is inexpensive and simple. The bottom 52 is preferably made using molded ethyl vinyl acetate (EVA) by methods known in the art; however cut EVA may be used as may thermal plastic rubber. Other bottoming methods that

do not entail the cement process may be used. These would require "direct-attached" polyurethane or thermal plastic rubber. Both of these latter techniques require California lasted shoes.

A preferred embodiment of the invention involves preparation of a three layered upper having an outer layer which is a warp knit, weft knit, woven fabric, leather product, or synthetic coated material. The central layer of the material is a polyurethane foam, and the inner liner may be any one of a number of materials. The laminate is heat embossed at 200 degrees C for approximately three minutes, after which the backsides of the the upper are attached together by means of stitching to a back strip. The upper is then lasted and attached to the bottom of the shoe by cold cementing or other conventional means.

A number of different components of a shoe may be made using heat embossing methods such as those previously described for the one piece upper. The heat embossing of shoe components is decorative as well as functional in several ways. For a multi-layered material having a layer of porous foam such as polyurethane foam, the heat and pressure of the heat embossing selectively causes the inner cell wall matrix to become viscous to a point that the resulting tack is adequate to accomplish bonding. Thus, when heated, the polyurethane foam becomes a strong bonding adhesive which adheres firmly to surrounding material. For a material having the foam as a central layer between two outer fabric layers, the embossing serves to firmly seal the three layers together. The shoe components of the present invention are embossed along the edges and are thus sealed along

the edges, removing the need for any edge stitching to hold the material layers together.

Another function of the heat embossing is to reduce the thickness of the material in the region of the embossing. Since shoe components are often joined at the edges, it is desireable to have the edges relatively thin compared to the rest of the material to prevent from forming an unusually thick region of the shoe where the connected shoe components overlap. Heat embossing along the edges of a shoe component provide this thinner region without the necessity of skiving, which is the traditional method of edge thickness reduction.

Shown in Figure 14 is a side view of a typical shoe 130 made with a heat embossing process. The shoe 130 has a heat embossed upper 132 and a quarter overlay 134 which is also heat embossed. The edges of the overlay 134 are embossed to reduce and seal them, while a more central region 135 of the overlay is embossed to hold eyelets 136, which in turn hold the laces of the shoe 130. The overlay 134 is stitched to the lasting margin of the upper and may be additionally secured by a thermoplastic rivet 138. During assembly, the two-piece rivet 138 is passed through aligned holes in both the overlay 134 and the upper 132.

A side view of thermoplastic rivet 138 passing through two pieces of material 139,141 shown in Figure 15. Front rivet plate 140 has two pins 142 which fit into the receiving holes 146 of back plate 144. Heating of the thermoplastic rivet 138 causes the two pieces of the rivet to melt and bond together forming a secure, permanent connection. This heating is preferably done with a high frequency electromagnetic field, which is particularly good for providing uniform heating of the

thermoplastic material. Alternative heating methods such as ultrasonic heating or thermal welding may also be used. The pins 142 of the front plate 140 of the rivet 138 may extend through holes 146 and beyond the rear surface of back plate 144. In such a case, pressure applied to the back of the rivet 138 during heating then causes the end of the pins 142 to spread and flatten out along the rear surface of the back plate 144. Thus when the rivet hardens, the pins 142 are even further prevented from moving back through the holes in the back plate 144.

Using certain thermoplastic materials, the thermoplastic rivet 138 may alternatively consist of just the front plate 140. Once the pins 142 pass through the material to be joined, they are heated and the pins 142 are flattened out to restrict the rivet 138 from passing back through the material. Such a deformation of the rivet 138 may be accomplished through the use of a pressure device which applies pressure to the rivet 138 during heating.

Figure 16 shows a plan view of the upper of the shoe in Figure 14. Quarter region 148 is embossed flat to provide a seat for a quarter overlay 134. The lasting margin 150 is also embossed to seal the edge and to reduce the thickness of the lasting margin 150 without skiving. The upper is shown with one of two quarter overlays 134 in place. The other quarter overlay is left out to show the quarter region 148 of the upper, which is embossed flat to accomodate an overlay 134. Embossing this region 148 prevents the shoe from being abnormally wide in the overlapping quarter region of the shoe. Rivet holes 149 are also shown in both the upper 132 and the quarter overlay 134.

In Figure 17 is shown a shoe 152 having an upper 153 and a number of overlay components. A heel stabilizer 154, a quarter overlay 156, and a forefoot stabilizer 158 are each attached to the shoe 152 during a bottoming process. A tongue 160 is also included, and both the tongue 160 and the forefoot stabilizer 158 are attached to the vamp 162 of the upper by way of a thermoplastic rivet 164. In this case the rivet 164 serves to secure both the tongue 160 and the forefoot stabilizer 158, thus providing an economical use of connection elements.

The overlay components 154,156,158 of the shoe 152 of Figure 17 are preferably made by an injection molding process using materials such as thermoplastic elastomers, or in some cases engineering thermoplastics. Some alternatives to the injection molding method include flow molding, casting, and extrusion process. The molded overlays are easy and inexpensive to produce and add support and aesthetic value to the shoe. Other materials such as the foam/fabric material of the upper or a natural material such as leather are also used as overlay material. A combination of different overlay components of different materials is often used on the same shoe.

Both the tongue 160 and the upper 153 of the shoe 152 are formed of a material with a central resilient foam layer. Heat embossing seals and reduces the material in selected areas. Figures 18A and 18B show a plan view and a cross sectional view, respectively, of the upper 153 of Figure 17. The lasting margin 156 of the upper 153 is embossed. Futher embossing of the upper 153 provides seats for the overlays shown in the assembled shoe of Figure 17. Since the non-shaded portions of Figure 18A are the regions depressed by heat embossing, it is apparent that the embossed regions seat

the heel stabilizer 154, the quarter overlay 156, and the forefoot stabilizer 156 perfectly. The cross section of Figure 18B shows the relative thickness difference between an embossed region 168 and a non-embossed region 170 of the upper 153.

Figure 19A is a plan view of the quarter overlays 156 and 156' of the shoe 152 of Figure 17 (overlay 156' is not shown in Figure 17). It can be seen from this view that the injection molded components are fabricated in a manner to reduce thickness gauge in the bottom region. These portions of the overlays are turned under during bottoming of the shoe, and it is therefore advantageous to have the thickness reduced in these regions 172. Figure 19B is a cross section of one of the quarter overlays 156, 156' and shows the difference in thickness in different regions of the TPU material. Much of the molded pattern is decorative, but it additionally serves to allow a certain degree of bending movement to the overlay. The mold also gives shape and texture to the surface of the overlay.

Shown in Figure 20A is a plan view of the forefoot stabilizer 158 of the shoe 152 of Figure 17. Like the quarter overlays 156, 156', this particular forefoot stabilizer 158 is made of a TPU material. The forefoot stabilizer is made flat in a central region 174 and at the ends 176 of the extending portions 177. Molded lines 178 in the remainder of the material provide texture and improve bending properties in this region. Holes 180 in the central region 174, support the pins 142 of thermoplastic rivet 138. The cross section of Figure 20B shows the difference in thickness between the different regions of the forefoot stabilizer.

Figure 21A is a plan view of an alternative embodiment of the quarter overlays 156 and 156' of Figures 17 and 19. Quarter overlays 180 and 180' still fit within the recessed regions of the shoe upper 153 of Figure 17, but are made of foam/fabric material instead of a TPU. The foam/fabric material is like that previously disclosed for the upper, and is embossed along the edges to seat the material. The quarter overlays 180 and 180' are also embossed at the bottom portions 182 and in the eyelet regions 184. The eyelets (not shown) are mounted in the regions 184, and the bottom portions 182 are attached to the lasting margin of the upper 153 prior to bottoming of the shoe. The raised non-embossed central regions 186 of the quarter overlays 180, 180' are instrumental in keeping the shape of the overlays. A cross section of one of the quarter overlays is shown in Figure 21B. From this cross section the thickness difference between the embossed and non-embossed regions of the foam/fabric material is apparent.

The forefoot stabilizer 188 of Figure 22A is similarly shaped to the forefoot stabilizer 158 of Figures 17 and 20, but is made of the foam/fabric material. The forefoot stabilizer 188 is embossed in the bottom regions 190, in the eyelet regions 192, in the rivet region 194, and along the edges. The embossing along the bottom region 190 allows proper attachment to the shoe upper. The embossing in the eyelet regions 192 provides a flat region for attachment of the eyelet (not shown). The embossing in the rivet region 194 provides a flat, recessed region in which the rivet 164 fits, passing through rivet holes 196. The raised, non-embossed region 198 gives shape and texture to the surface of the forefoot stabilizer 188. A cross section

of the forefoot stabilizer is correspondingly shown in Figure 22B.

Figures 23A-23C show a folding thermoplastic fastener 200 designed particularly for binding together the left and right heel portions of an upper. The fastener 200 is shown folded up in Figure 23A and partially unfolded in Figure 23B. Two rows of pins 202 on fastener rear plate 204 align with the two rows of holes 206 on fastener hole plate 208 when the fastener is folded over. As shown in Figure 23C, the reduced areas of the heel portions 210 of a shoe upper 212 are punched with holes 214 which align with the pins 202 of the fastener 200 when the heel portions 210 are pulled together. The pins 202 of the fastener 200 are then pushed through the holes 214 of the heel portions 210. The fastener is then closed along a hinge between the rear plate 204 and the hole plate 208, such that the holes 206 in the hole plate 208 engage the ends of the pins 202 sticking through the heel portions 210. Once engaged, the fastener is heated to melt the pin/hole connections such that when rehardened they are permanently secured. Decorative cover plate 216 is hinged to hole plate 208 and is folded over to cover the pin/hole connections. The cover plate 216 has a lip which meshes with a lip on the hole plate 208 to keep it tightly secured when folded over and pressed into engagement with the hole plate 208.

As noted above, the embossing allows for control of stress, contouring and flexibility of various portions of the shoe. Figure 24 illustrates a women's casual shoe which utilizes such functional embossing. The shoe upper is formed of a one-piece upper, illustrated in Figure 25, and quarter overlays, one of which is illustrated in

thickness of the embossed lines 226 and 228 also allows bending along the embossing lines.

Figure 28 illustrates an alternative quarter overlay, and a shoe incorporating that overlay is illustrated in Figure 29. In this design, stretch from the eyelets to the sole is controlled by the horizontal embossing lines such as 236. Depending on the weave of the fabric layers, some stretching is allowed between the embossing lines. In this design, stretching from the eyelets to the shoe must be limited to a larger extent by the weave of the fabric than in the prior design, but the embossing lines allow for greater flexibility which allows the overlay to fold over the foot more readily.

The invention has great industrial applicability particularly in countries with a labor shortage or where it is essential to minimize labor costs to be competitive. The method of the invention may be used in the shoe manufacturing industry to make durable, attractive, inexpensive shoes through elimination or diminishing of most of the labor-intensive shoe fitting steps, such as skiving, multiple-piece stitching, prefitting, splitting, interlining, and edge taping.

While the invention has been described with reference to specific embodiments thereof, it will be appreciated that numerous variations, modifications, and embodiments are possible, and accordingly, all such variations, modifications, and embodiments are to be regarded as being within the the spirit and scope of the invention.

## CLAIMS

1. A shoe comprising an upper portion formed substantially of resilient foam material sandwiched between inner and outer layers, the upper portion being embossed by melted, depressed regions of the foam.

2. A shoe as claimed in Claim 1 wherein the upper portion has an embossed lasting margin.

3. A shoe as claimed in Claim 1 wherein edges of the upper portion are embossed to seal said edges.

4. The shoe component of Claim 1 wherein the resilient foam material is a porous breathable foam which in the presence of heat and pressure transforms internally to a point that the inner cell wall matrix of the foam becomes viscous, providing sufficient tack to accomplish a bonding within the matrix.

5. The shoe component of Claim 1 wherein embossing of the shoe component provides a predetermined functional design pattern on the shoe component.

6. The shoe component of Claim 1 wherein embossing of the shoe component contributes to specific strain performance factors in the shoe component.

7. The shoe component of Claim 1 wherein the embossing of the shoe component contributes to the maintaining of the proper shape of the shoe component.

8. The shoe component of Claim 1 wherein the shoe component is a one-piece upper.

9. The shoe component of Claim 1 wherein the shoe component is an eyestay overlay.

10. The shoe component of Claim 1 wherein the shoe component is a quarter overlay.

11. A component of a shoe comprising a multi-layered material embossed along the edges of the material, the embossing sealing the layers of the material together at the edge and reducing the thickness of the material in the embossed regions.

12. The shoe component of Claim 11 wherein the multi-layered material includes a layer of porous breathable foam which in the presence of heat and pressure transforms internally to a point that the inner cell wall matrix of the foam becomes viscous, providing sufficient tack to accomplish a monogamous bonding within the matrix.

13. The shoe component of Claim 1 wherein the shoe component is further embossed away from the edges of the material.

14. A shoe comprising an upper portion having back sides, sides and a toe area formed from a single sheet of material, the material being selectively embossed relative to the shoe structure such that depressions embossed in the material help maintain a proper shape of the shoe.

15. A shoe as claimed in Claim 14 wherein the shoe comprises a depression curved about the toe area to separate upper and side portions of the toe area.

16. A shoe as claimed in Claim 14 wherein said upper portion comprises a strap formed between sides of the shoe, the strap having transverse depressions thereacross.

17. A shoe as claimed in Claim 14 wherein said upper portion has a depressed lasting margin.

18. A shoe as claimed in Claim 14 wherein upper edges of back sides and sides of said upper portion are sealed by depressions.

19. A shoe as claimed in Claim 14 wherein the sheet of material comprises a resilient foam layer sandwiched between inner and outer layers.

20. A shoe as claimed in Claim 14 wherein the said upper portion has a depressed lasting margin.

21. A shoe as claimed in Claim 14 wherein upper edges of back sides and sides of said upper portion are sealed by depressions.

22. A shoe comprising an upper portion having back sides, sides and a toe area formed in a single sheet of material, the sheet of material comprising resilient foam material sandwiched between inner and outer layers, the material being embossed by melted, depressed regions of the foam to help maintain the shape of the shoe, the depressed regions including a lasting margin and upper edges of the back sides and sides.

23. A shoe as claimed in Claim 22 comprising a depression curved about the toe area to separate upper and side portions of the toe area.

24. A shoe comprising a plurality of heat-embossed, multi-layered shoe portions fastened together with a thermoplastic connector, the connector passing through the material of the connected portions and being such that once heated it restricts separation of said materials.

25. A shoe as claimed in Claim 24 wherein the thermoplastic connector comprises a first member having pins which extend through the material being fastened together, and a second member having holes which engage the pins of the first member while they are extended through said material.

26. The shoe of Claim 24 wherein the shoe portions comprise the left and right heel portions of a one-piece upper.

27. The shoe of Claim 24 wherein the multi-layer composition of said shoe portions includes a central layer of porous foam sandwiched between an inner layer and an outer layer.

28. A method of making a shoe component, comprising:

fabricating the shoe component in a desired shape from a multi-layered material; and

embossing the shoe component in select regions, the embossing sealing the layers of the material together at the edge and reducing the thickness of the material in the embossed regions.

29. The method of Claim 28 wherein said embossing of the shoe component comprises embossing with heat.

30. The method of Claim 28 wherein embossing said shoe component comprises embossing with high frequency energy.

31. The method of Claim 28 wherein said shoe component comprises a one-piece upper.

32. The method of Claim 28 wherein said shoe component comprises a multi-layered material having an outer layer, a resilient central layer, and an inner layer.

33. The method of Claim 32 wherein said resilient central layer is a porous foam which when heated, melts to a bonding adhesive.

34. The method of Claim 32 wherein said outer layer and said inner layer are tricot.

35. The method of Claim 32 wherein said outer layer and said inner layer are woven cotton.

36. The method of Claim 32 wherein the outer layer comprises leather.

37. The method of Claim 32 wherein said central resilient layer comprises polyurethane.

38. A method of fastening together portions of a shoe, the method comprising:

aligning the shoe portions with one another in a desired fashion;

inserting a thermoplastic connector through the shoe portions such that the shoe portions are adjacent one another with the thermoplastic connector passing through each of them;

subjecting the thermoplastic connector to sufficient energy to melt the thermoplastic connector such that when rehardened, the connector restricts the shoe portions from separating from one another.

39. The method of Claim 38 wherein the thermoplastic connector comprises a first member having pins which extend through the shoe portions, and a second member having holes which engage the pins of the first member while the connector is subjected to the melting energy.

40. The method of Claim 38 wherein the shoe portions comprise the left and right heel portions of a one-piece upper.

41. The method of Claim 38 wherein the shoe portions include a tongue.

42. The method of Claim 38 wherein the shoe portions include a portion formed of a multi-layer material, the material having a layer of porous foam, and heat-embossed depressed regions in the material.

43. The method of Claim 38 wherein the shoe portions include an overlay.

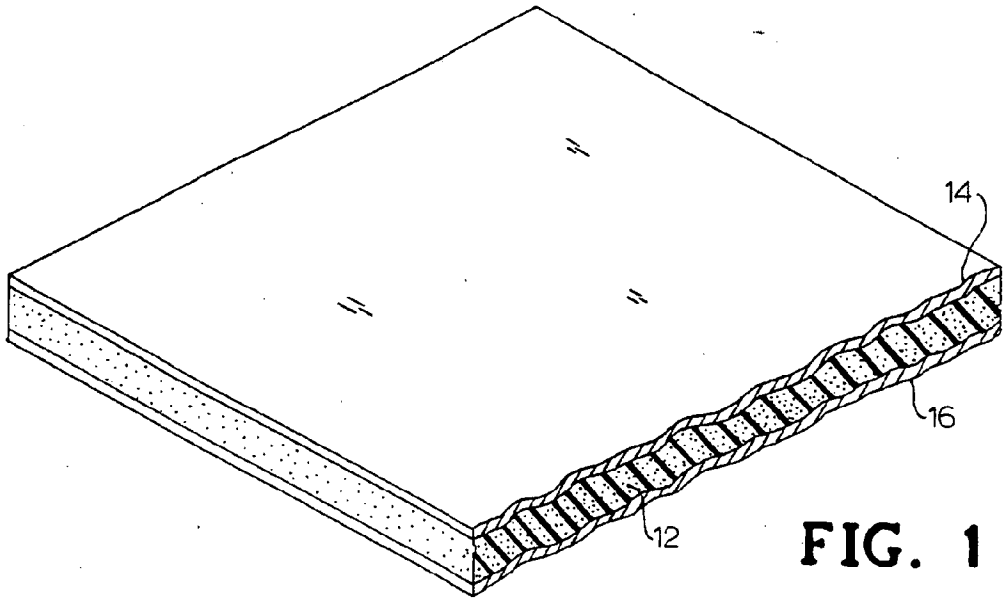



FIG. 1

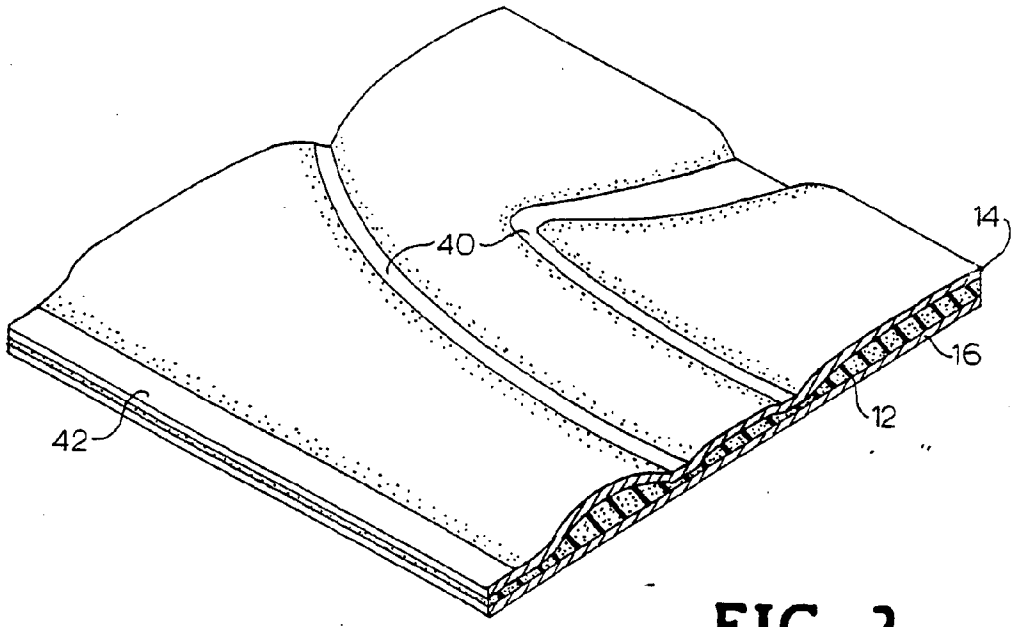



FIG. 2

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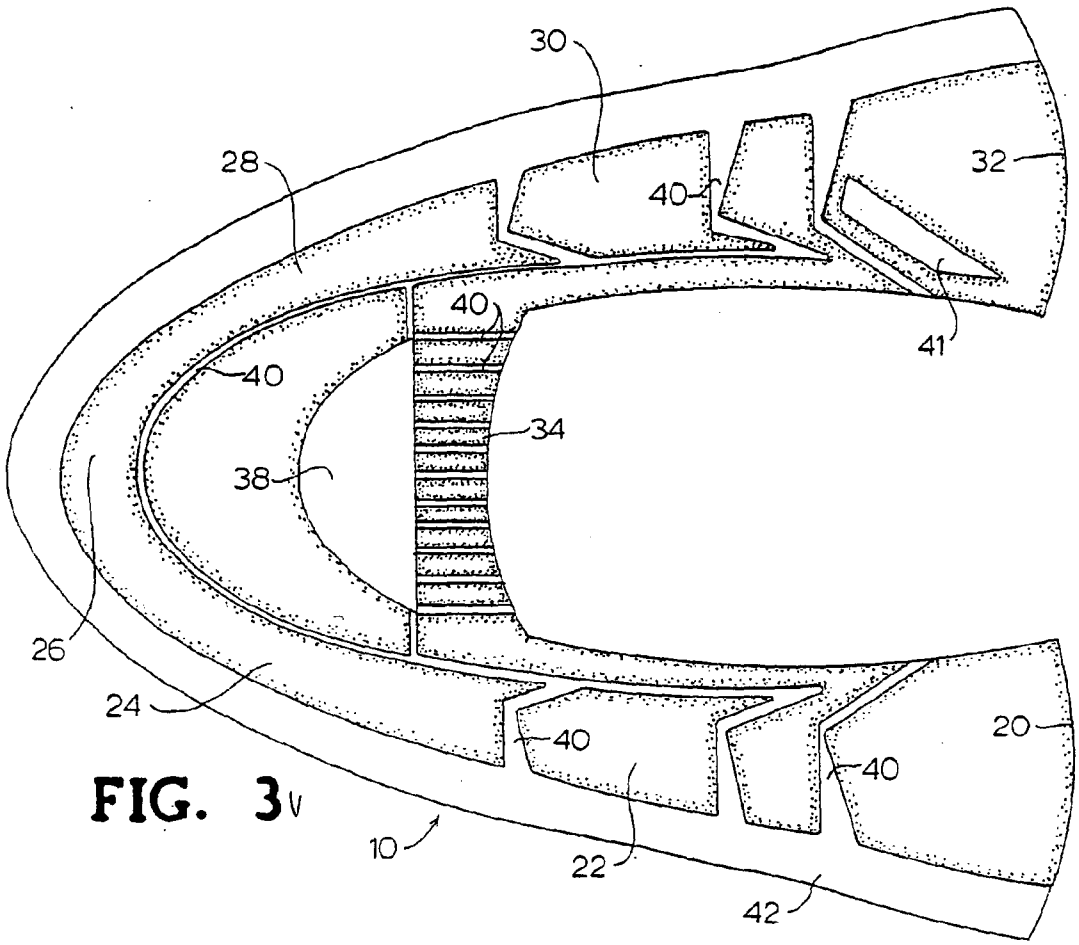

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FIG. 3

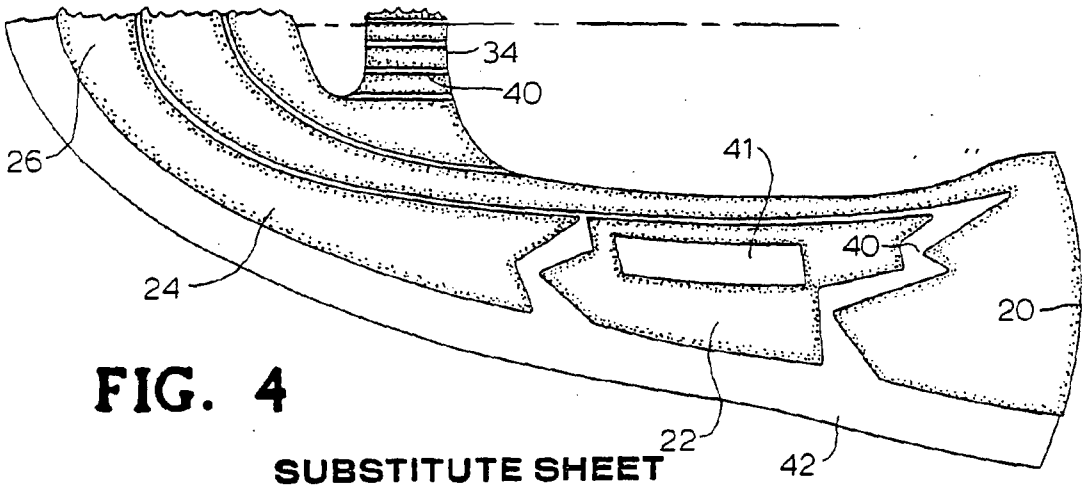

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FIG. 4

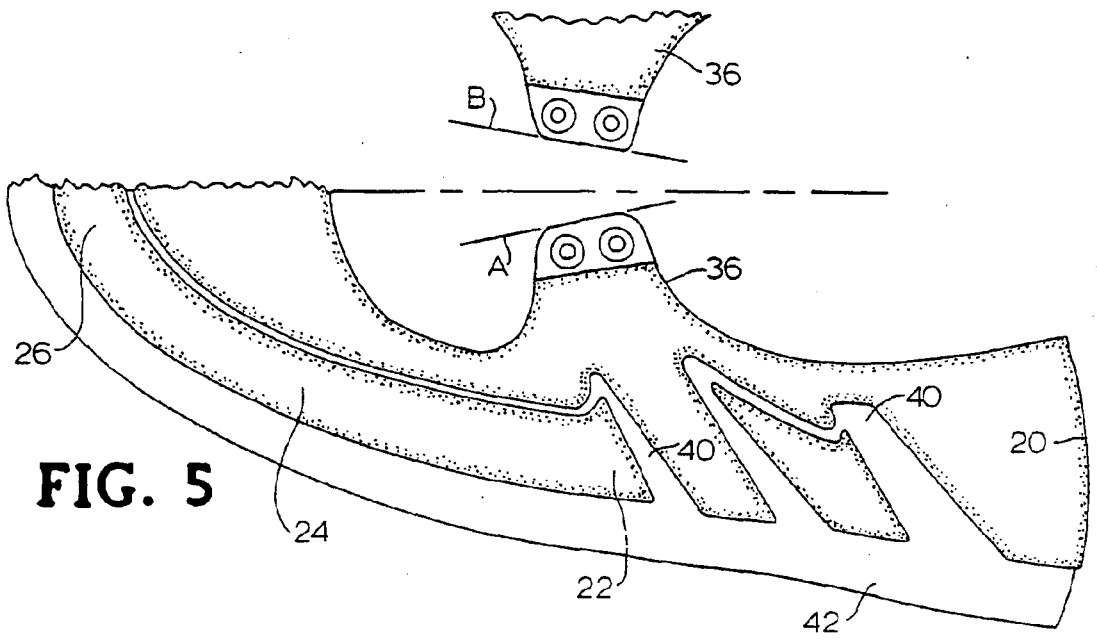



FIG. 5

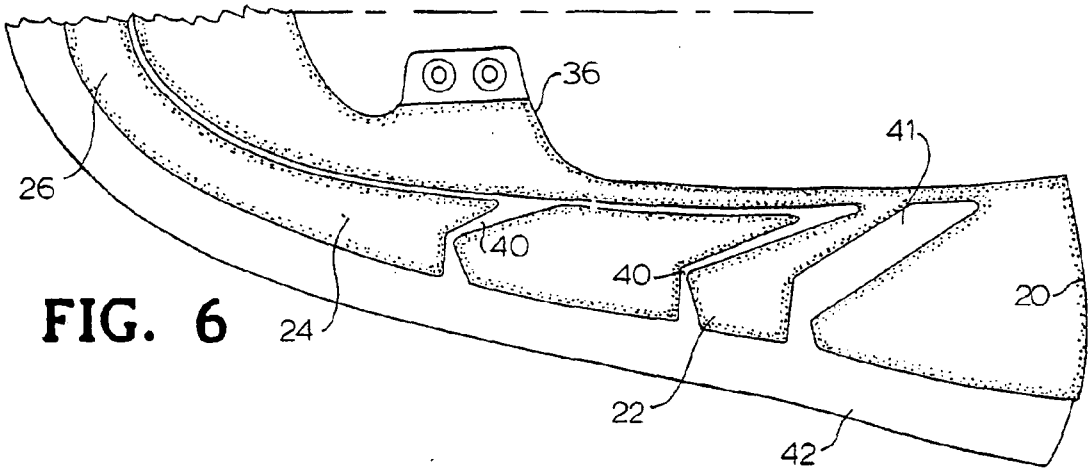



FIG. 6

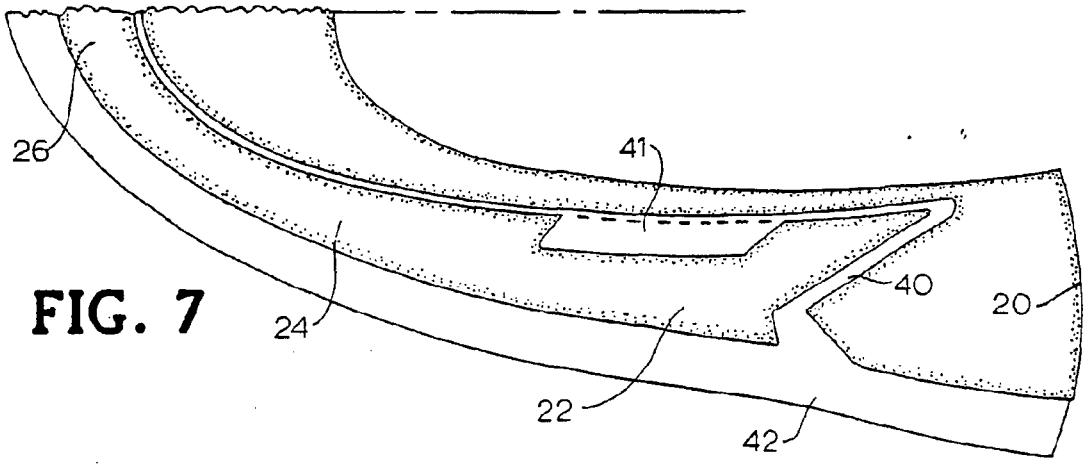



FIG. 7

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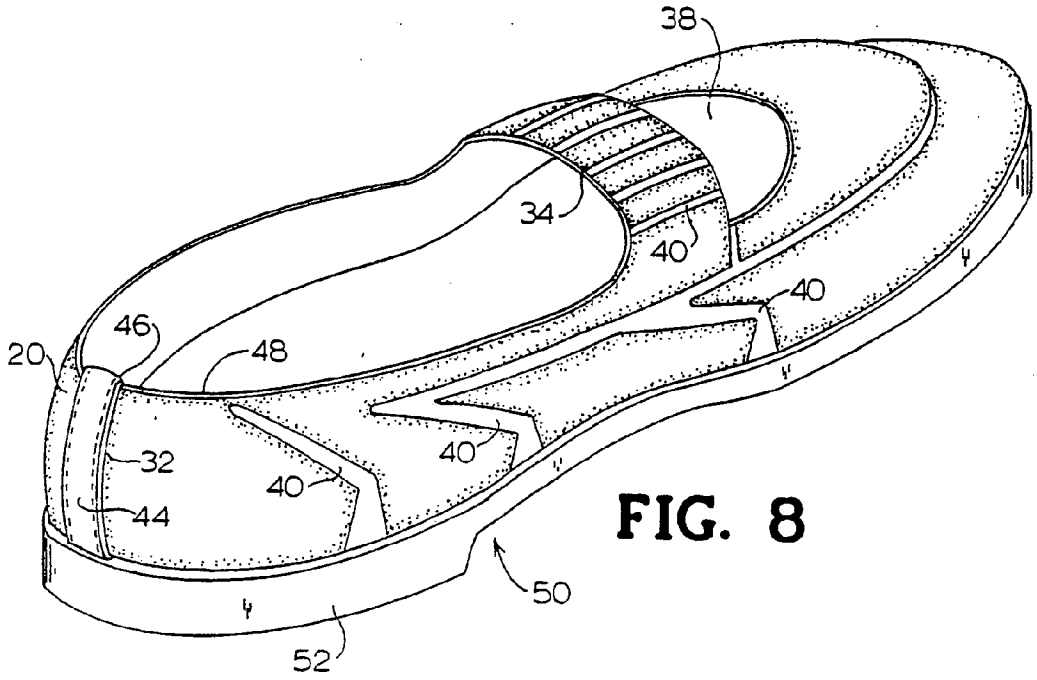



FIG. 8

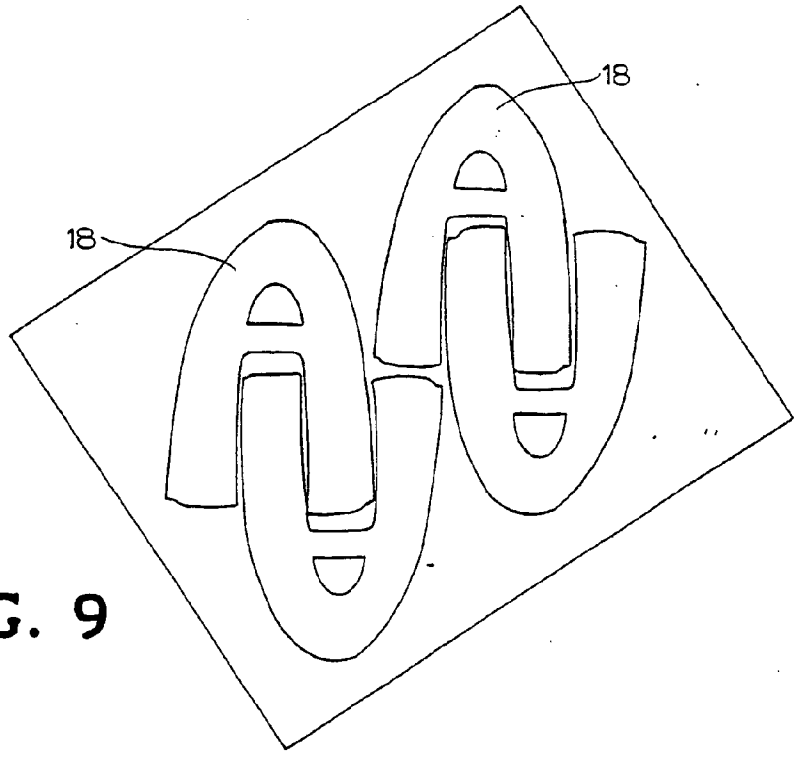



FIG. 9



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Skechers EX1013-p. 2051
Skechers v Nike

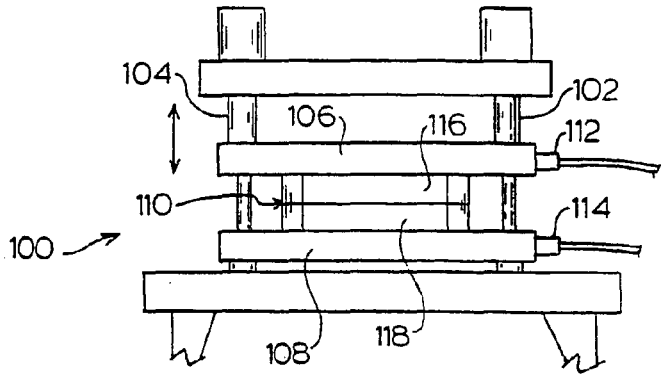



FIG. 10

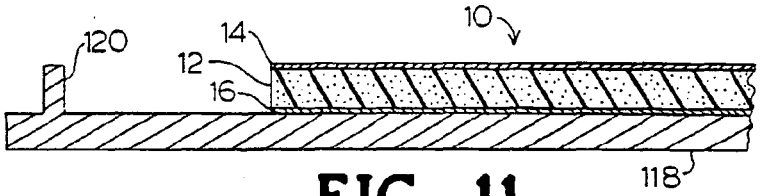



FIG. 11

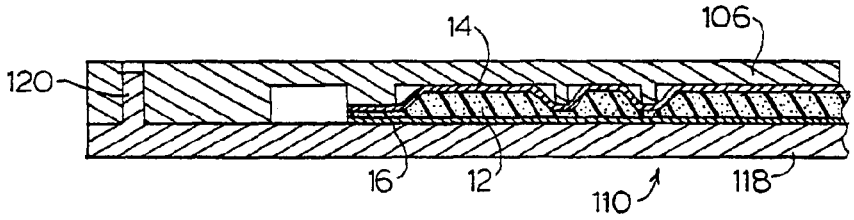



FIG. 12



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Skechers EX1013-p. 2052
Skechers v Nike

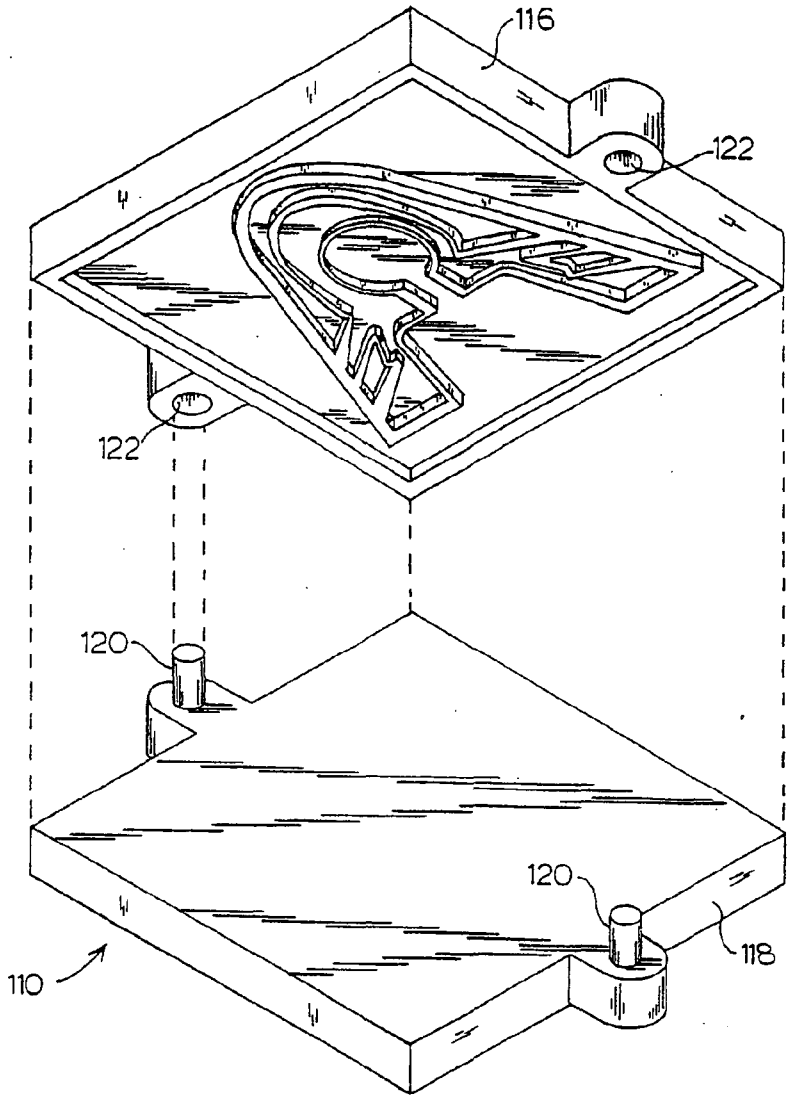



FIG. 13



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Skechers EX1013-p. 2053
Skechers v Nike

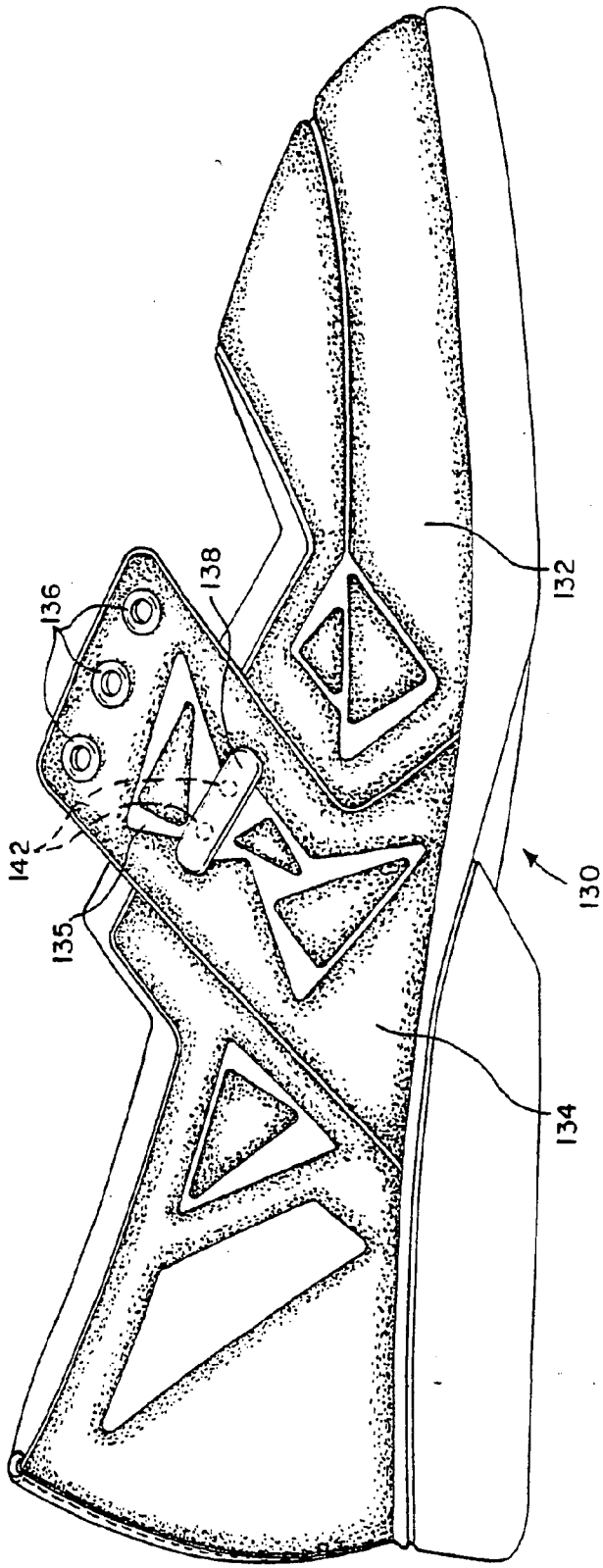



FIG. 14

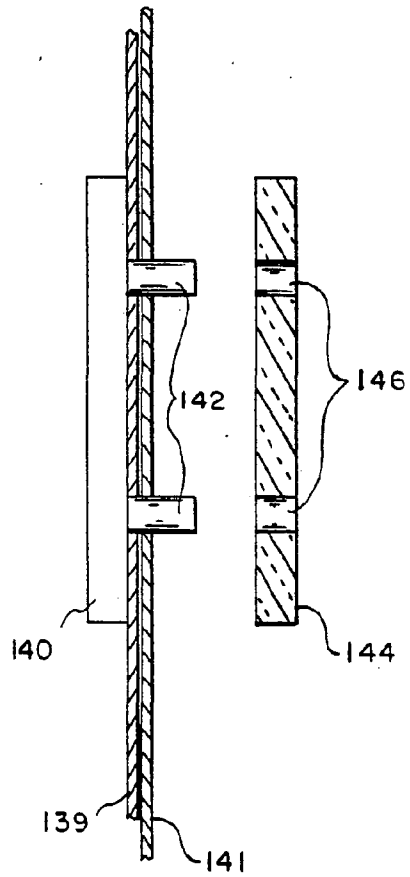



FIG. 15



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Skechers EX1013-p. 2055
Skechers v Nike

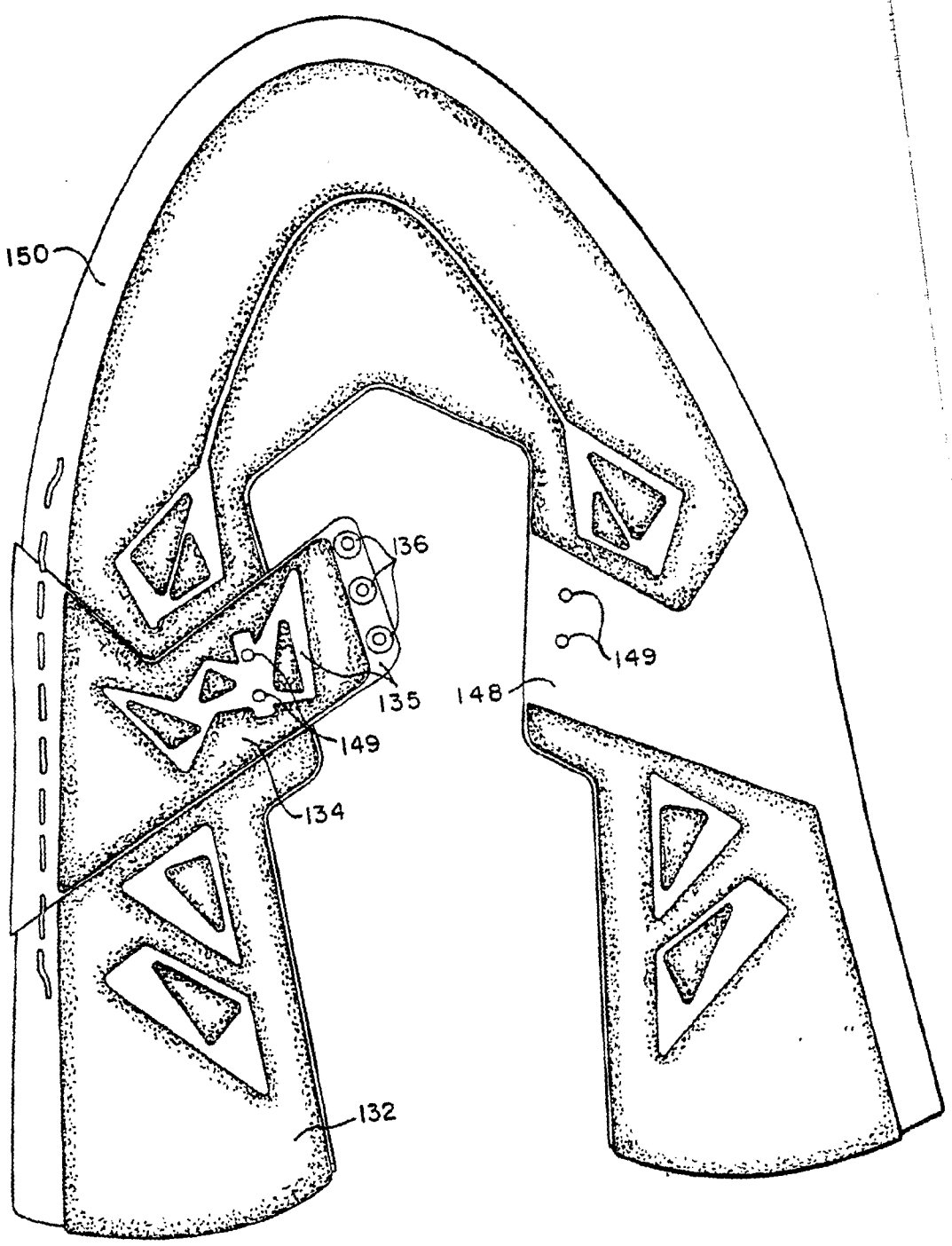



FIG.16

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Skechers EX1013-p. 2056
Skechers v Nike

FIG. 17

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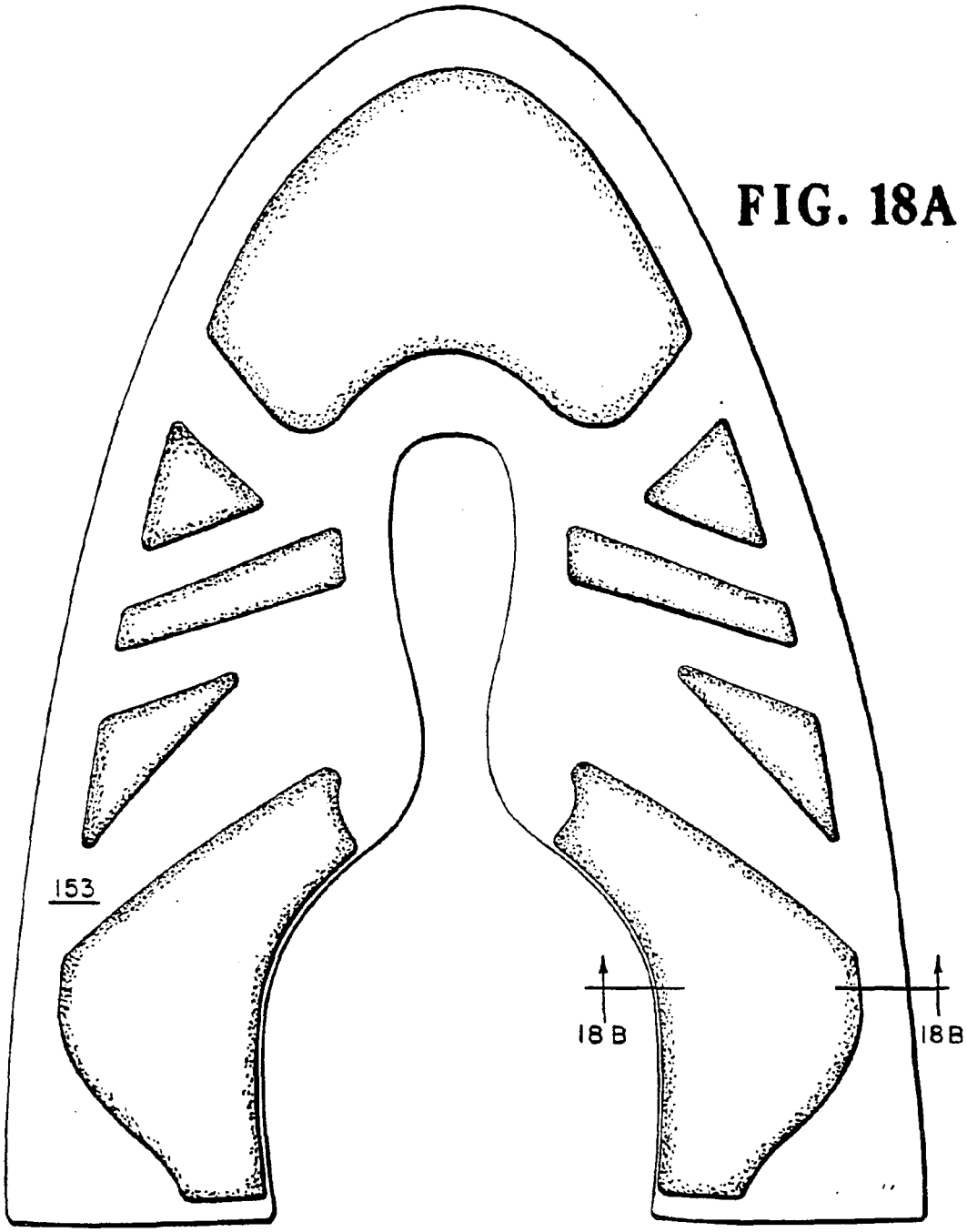



FIG. 18A

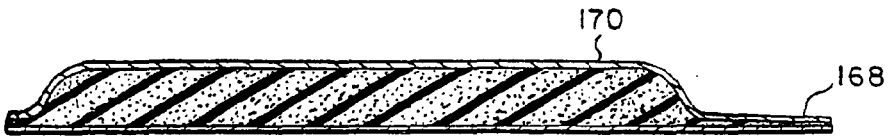



FIG. 18B



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Skechers EX1013-p. 2058
Skechers v Nike

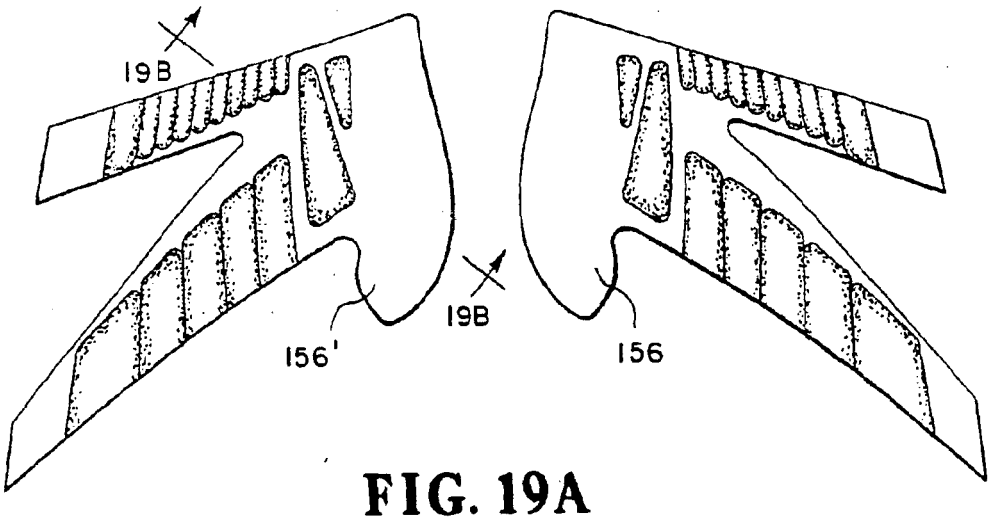



FIG. 19A

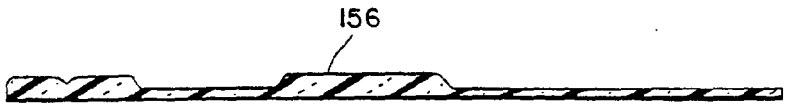



FIG.19B

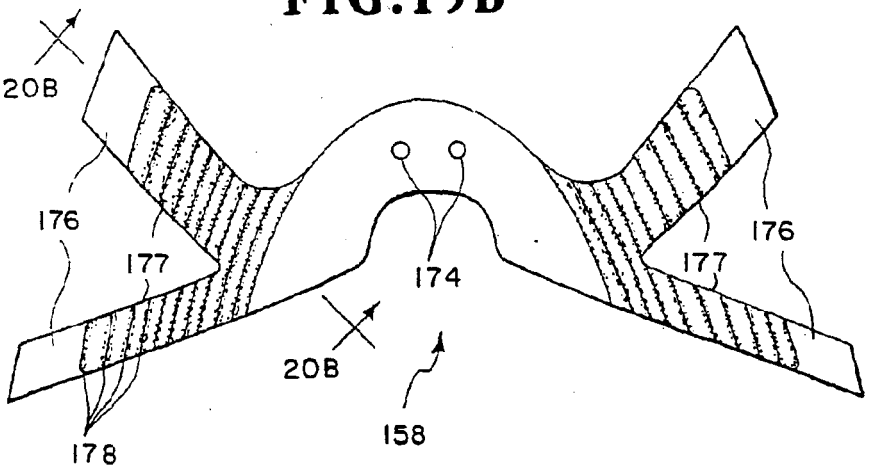



FIG.20A




FIG. 20B

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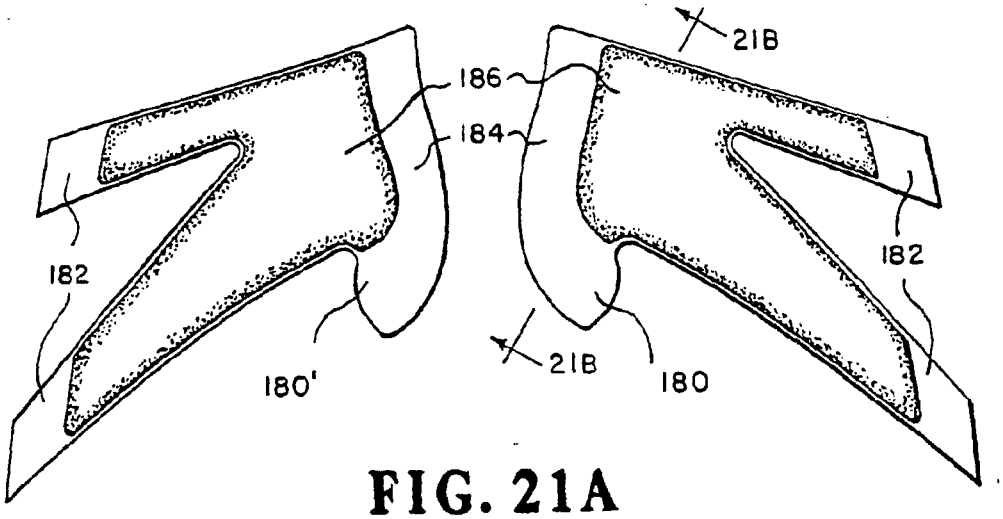



FIG. 21A




FIG. 21B

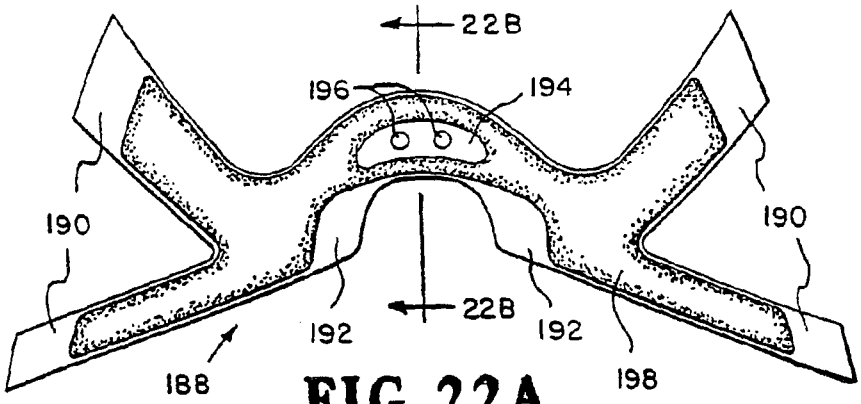



FIG. 22A

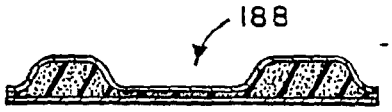



FIG. 22B



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Skechers v Nike

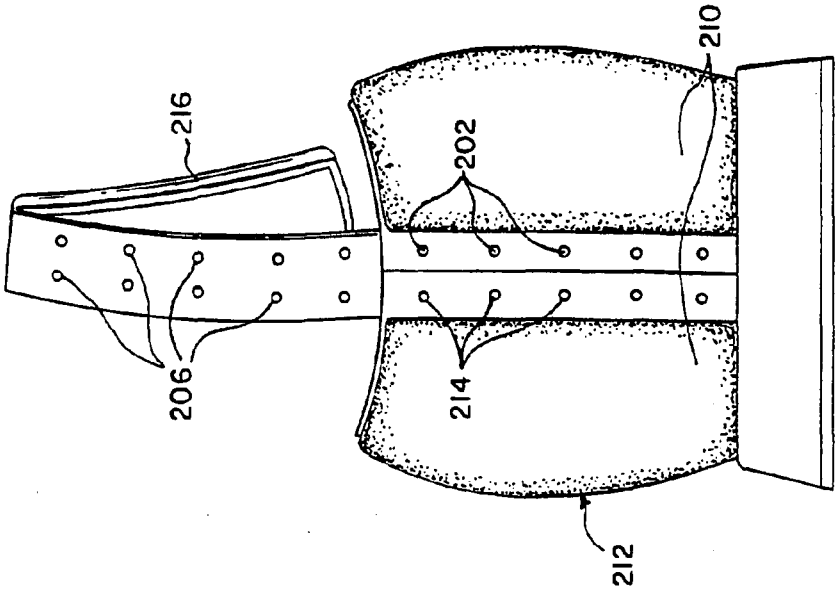



FIG. 23C

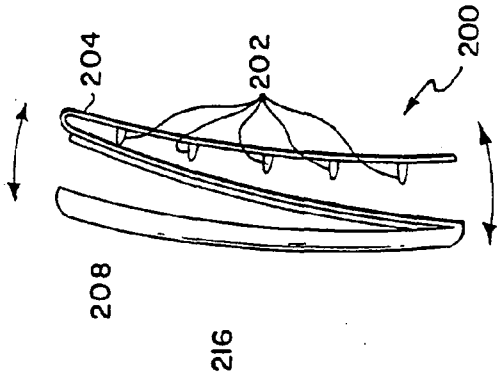



FIG. 23B

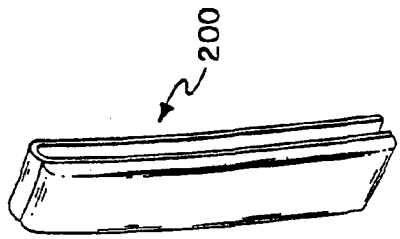



FIG. 23A

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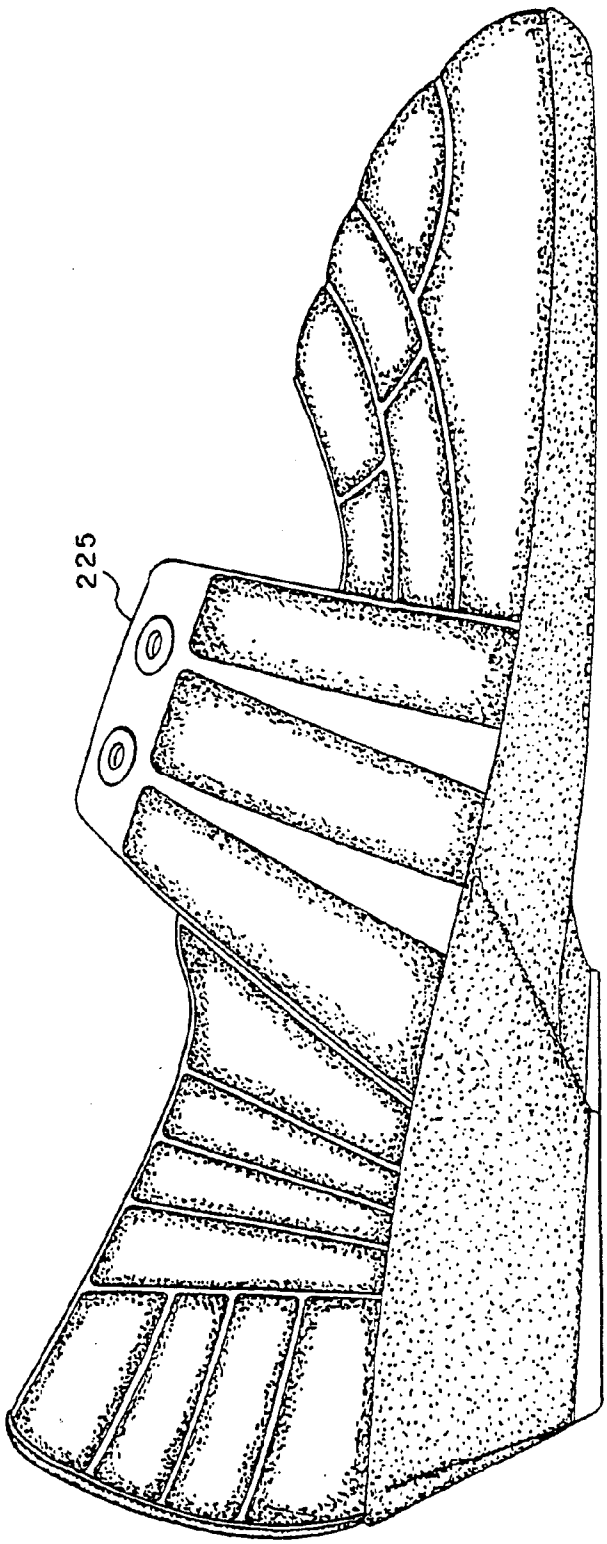



FIG. 24

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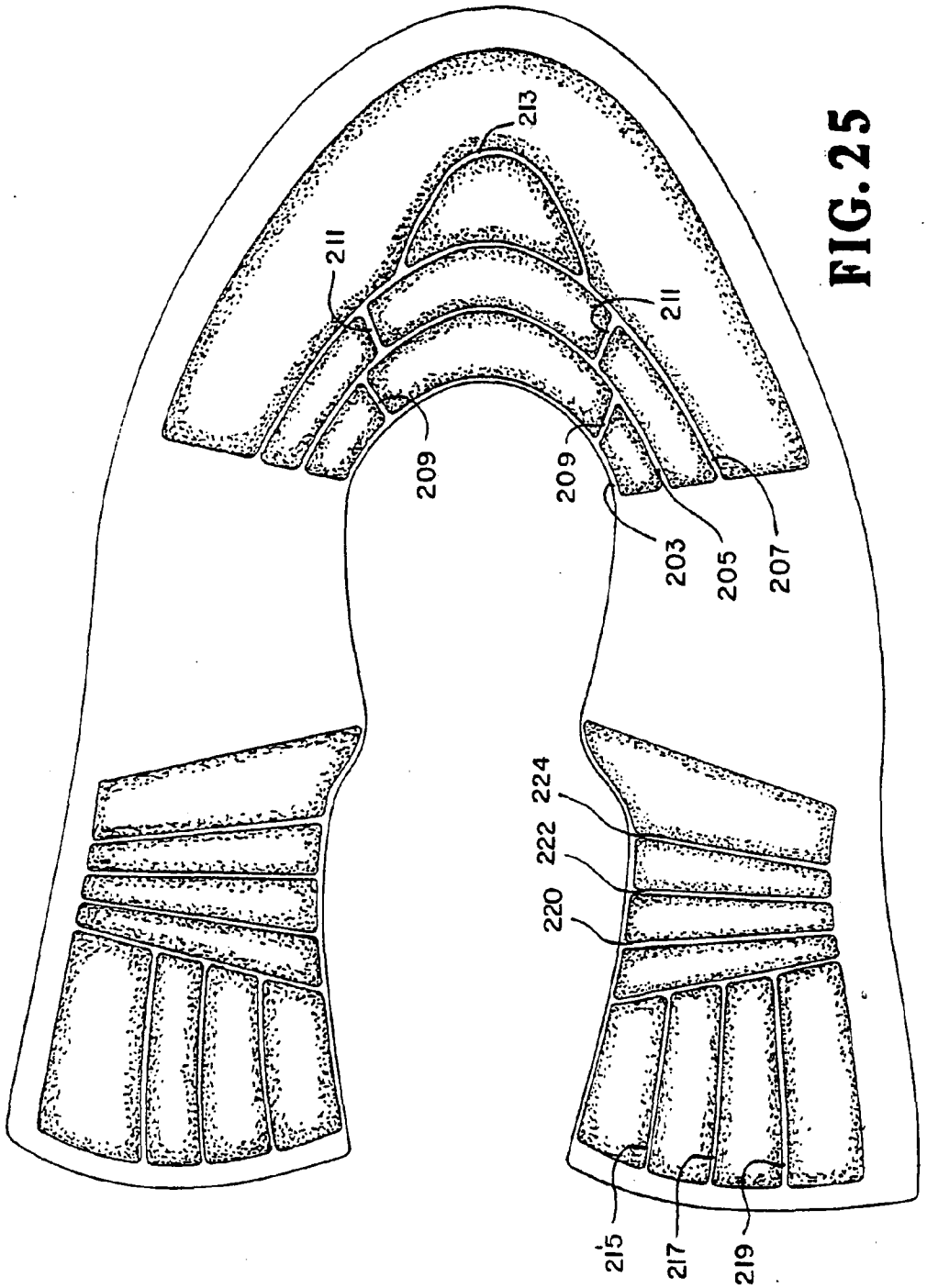



FIG. 25

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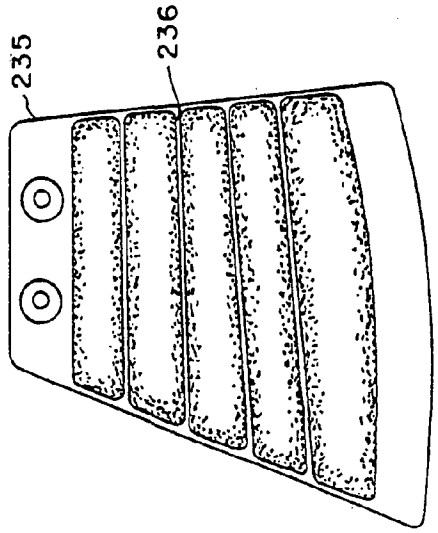



FIG. 28

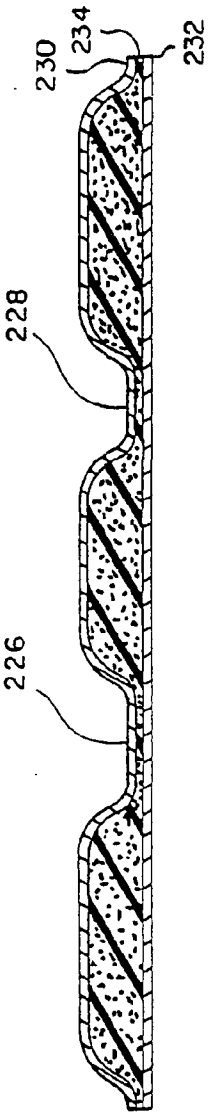



FIG. 27

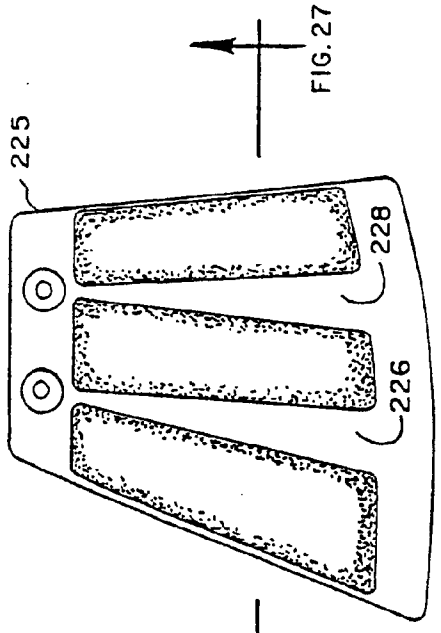



FIG. 26



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Skechers EX1013-p. 2064
Skechers v Nike

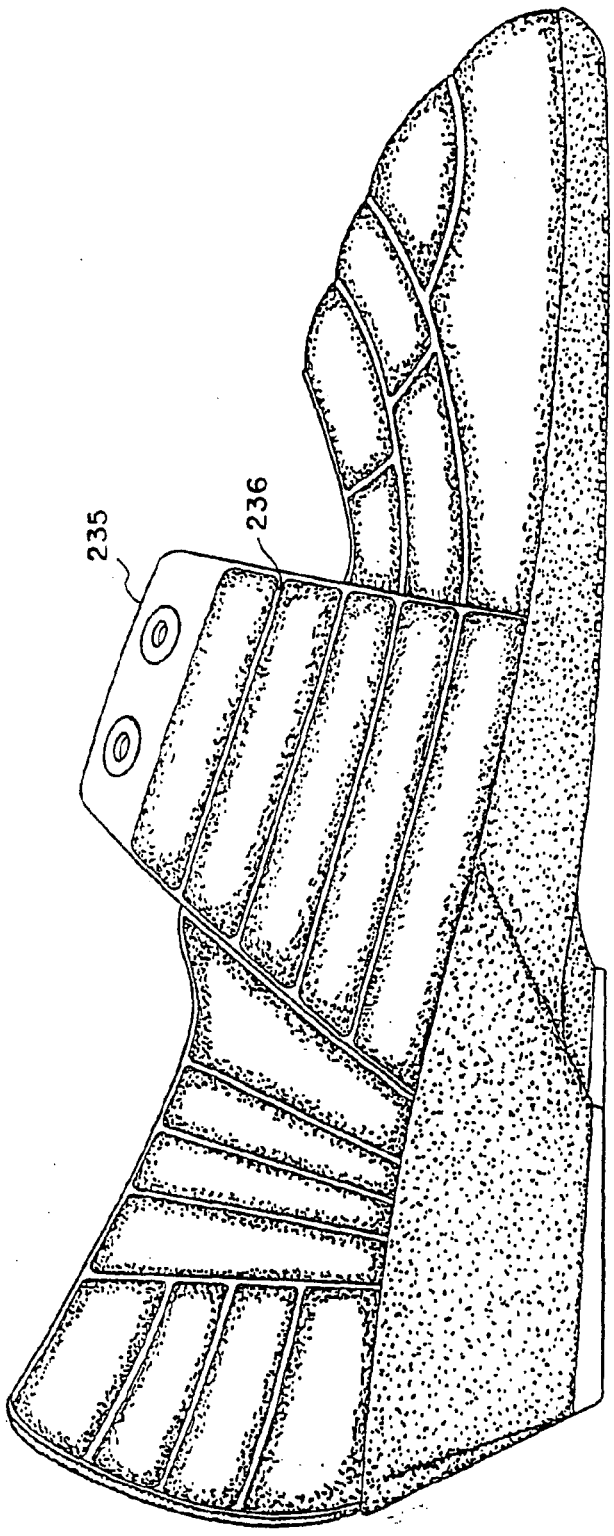



FIG. 29

SUBSTITUTE SHEET

# INTERNATIONAL SEARCH REPORT

International Application No PCT/US 89/04370

## I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC5: A 43 D 8/24

## II. FIELDS SEARCHED

Minimum Documentation Searched [7]

| Classification System | Classification Symbols |
|---|---|
| IPC5 | A 43 D; A 43 B |

Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched [8]

## III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

| Category [10] | Citation of Document, [11] with indication, where appropriate, of the relevant passages [12] | Relevant to Claim No. [13] |
|---|---|---|
| A | US, A, 2622052 (J.D. CHANDLER) 16 December 1952, see the whole document | 1-43 |
| A | US, A, 3130505 (I.I. MARKEVITCH) 28 April 1964, see the whole document | 1-43 |
| A | US, A, 3583081 (HIDEO HAYASHI) 8 June 1971, see the whole document | 1-43 |
| A | DE, B2, 2235819 (FRITZ WAGNER, MASCHINENFABRIK GMBH & CO KG) 14 February 1974, see the whole document | 1-43 |

* Special categories of cited documents: [14]

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

## IV. CERTIFICATION

| Date of the Actual Completion of the International Search | Date of Mailing of this International Search Report |
|---|---|
| 17th January 1990 | 12. 02. 90 |
| **International Searching Authority** | **Signature of Authorized Officer** |
| EUROPEAN PATENT OFFICE | C.D. v.d. Vliet |

Form PCT/ISA/210 (second sheet) (January 1985)

ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. PCT/US 89/04370

SA 31867

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the European Patent Office EDP file on 08/11/89
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US-A- 2622052 | 16/12/52 | NONE | |
| US-A- 3130505 | 28/04/64 | NONE | |
| US-A- 3583081 | 08/06/71 | FR-A- 1578531 | 14/08/69 |
| | | GB-A- 1223285 | 24/02/71 |
| | | DE-A- 1785183 | 04/11/71 |
| | | DE-U- 6753371 | 24/04/69 |
| | | DE-U- 6753380 | 24/04/69 |
| DE-B2- 2235819 | 14/02/74 | DE-A- 2265494 | 02/12/82 |

EPO FORM P0111

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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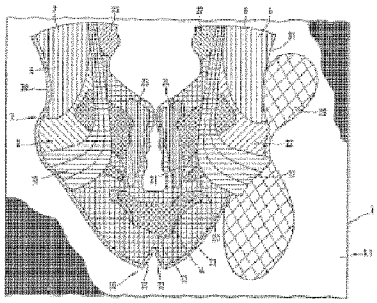
# PROCESS FOR PRODUCTION OF SHOE UPPER FROM WEB OF MATERIAL AND SHOE UPPER PRODUCED ACCORDING TO THIS PROCESS

**Publication number:** CN1067566 (A)
**Publication date:** 1993-01-06
**Inventor(s):** MAMORU NISHIDA [TW]
**Applicant(s):** PUMA AG [DE]
**Classification:**
**- international:** ***A41H3/08; A43B1/02; A43B9/02; A43B23/04;*** **A41H3/00; A43B1/00; A43B9/00; A43B23/02;** (IPC1-7): A43B1/04; A43B9/00; A43B10/00; A43B23/02; A43D8/16; A43D8/26
**- European:** A41H3/08; A43B1/02; A43B9/02; A43B23/04B
**Application number:** CN19921004757 19920617
**Priority number(s):** DE19914119911 19910617

**Also published as:**
WO9222223 (A1)
AU1977192 (A)

Abstract not available for CN 1067566 (A)
Abstract of corresponding document: **WO 9222223 (A1)**

The invention concerns the production of a shoe upper by cutting out the upper, in the form of a pattern, from a strip of material and shaping the upper, at the same time joining parts of the upper by seams. The aim of the invention is to develop the method used so that, in spite of the large number of individual parts existing or to be made visible, such shoe uppers can be produced rationally and without waste of time. To this end, the invention proposes 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 (1) is produced, using different manufacturing techniques, such as different make-up, different yarn material, different colour, different material thickness, single- or multi-layer material, etc., the patterns being cut out from this strip and further worked to give shoe uppers.



Data supplied from the ***esp@cenet*** database — Worldwide

## Shoes

**Publication number:** CN1411762 (A)
**Publication date:** 2003-04-23
**Inventor(s):** ZENG HUANDONG [CN]
**Applicant(s):** TAIWAN BAIHE INDUSTRY CO LTD [CN]
**Classification:**
**- international:** ***A43B1/04; A43B9/02; A43B9/12;*** **A43B1/00; A43B9/00**; (IPC1-7): A43B1/04; A43B9/02; A43B9/12
**- European:**
**Application number:** CN20011036395 20011012
**Priority number(s):** CN20011036395 20011012

Abstract of **CN 1411762 (A)**

The production process of the shoe includes the following steps: using several braided strips and continuously alternatively weaving them to form a cylindrical woven shoe upper base material with certain elasticity, then cutting a shoe opening at a preset proper position of one side of said shoe upper base material, making proper finishing and moulding treatment and combining it with preformed sole so as to form a comfortable durable shoe product with good air permeability.

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Petitioner adidas AG - Exhibit 1002 - Page 163 of 346
Skechers EX1013-p. 2070
Skechers v Nike

## Three dimensional stereo shoe-vamp

**Publication number:** CN1429512 (A)
**Publication date:** 2003-07-16
**Inventor(s):** ZENG HUANDONG [CN]
**Applicant(s):** TAIWAN BAIHE IND CO LTD [CN]
**Classification:**
**- international:** ***A43B23/02;*** **A43B23/02;** (IPC1-7): A43B23/02
**- European:**
**Application number:** CN20011045055 20011231
**Priority number(s):** CN20011045055 20011231

Abstract of **CN 1429512 (A)**
A three-way stereoscopic shoe-vamp is made up of longitudinal bands, latitudinal bands and supporting bands through interweaving the supporting bands to form a triangular stereoscopic structure aftermutually superposing the longitudinal and the latitudinal bands. Its advantages are showing different colors in different directions and low cost.

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Petitioner adidas AG - Exhibit 1002 - Page 164 of 346
Skechers EX1013-p. 2071
Skechers v Nike

| Electronic Patent Application Fee Transmittal | |
|---|---|
| **Application Number:** | 12032995 |
| **Filing Date:** | 18-Feb-2008 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Filer:** | Holly Lynn Johnston/Rachael Brown |
| **Attorney Docket Number:** | 005127.01133 |
| Filed as Large Entity | |

**Utility under 35 USC 111(a) Filing Fees**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| Submission- Information Disclosure Stmt | 1806 | 1 | 180 | 180 |
| | | **Total in USD ($)** | | **180** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 6370744 |
| **Application Number:** | 12032995 |
| **International Application Number:** | |
| **Confirmation Number:** | 5554 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22909 |
| **Filer:** | Holly Lynn Johnston/Rachael Brown |
| **Filer Authorized By:** | Holly Lynn Johnston |
| **Attorney Docket Number:** | 005127.01133 |
| **Receipt Date:** | 02-NOV-2009 |
| **Filing Date:** | 18-FEB-2008 |
| **Time Stamp:** | 10:34:35 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Deposit Account |
| Payment was successfully received in RAM | $180 |
| RAM confirmation Number | 7231 |
| Deposit Account | 190733 |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:<br>Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)<br>Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees) | |

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Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Filed (SB/08) | IDS.pdf | 1118672<br>c3d7038595f2438f41311740efd80e1cc451b23a | no | 8 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | NPL Documents | Santoni.pdf | 127628<br>c958cc686680fa7682f754587ba86f595de14f93 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | NPL Documents | ISR.pdf | 306830<br>2d77e84db0c5051239abea32cfcbca1eb39188b7 | no | 7 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Foreign Reference | EP1437057.pdf | 681484<br>f206213b324c0c2a5d5891f5f8457bcda35360ea | no | 14 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Foreign Reference | GB1539886.pdf | 289389<br>8d63456c6ec933307a30457d0f7a55416e25eec0 | no | 5 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 6 | Foreign Reference | WO9003744.pdf | 1814671<br>9264a758a6bccf2f2806e97a9ca70ab78bef762f | no | 53 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 7 | Foreign Reference | Eng_Abstract_CN1067566A.pdf | 73565<br>807c1bf195008c96dd21ef6a5ec84cd2cb99b226 | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 8 | Foreign Reference | Eng_Abstract_CN1411762A.pdf | 22594<br>177330be02acf0845e5ddd7482b56133fd6a017 | no | 1 |

| | | | | | |
|---|---|---|---|---|---|
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 9 | Foreign Reference | Eng_Abstract_CN1429512.pdf | 20831<br>f34908dc2e7a1ae38db9f4644d93f9cbeb123eca | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 10 | Fee Worksheet (PTO-875) | fee-info.pdf | 30705<br>441889f5a7f2dc05c4dbba200f80d48a02724cc8 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 4486369 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 12/032,995 | 02/18/2008 | Bhupesh Dua | 005127.01133 | 5554 |

22909 7590 11/30/2009

BANNER & WITCOFF, LTD.
1100 13th STREET, N.W.
SUITE 1200
WASHINGTON, DC 20005-4051

| EXAMINER | |
|---|---|
| PATTERSON, MARIE D | |
| ART UNIT | PAPER NUMBER |
| 3728 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 11/30/2009 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 12/032,995 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | Marie Patterson | 3728 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/2/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

***Claim Rejections - 35 USC § 112***

1. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 9 the phrase "a single type of textile" is confusing, vague, and indefinite. It is not clear what a "type" of textile is or what structural limitations are intended to be encompassed by such a phrase.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joha (1910251) in view of Santoni S.p. A. sewing machines (as described by applicant as a prior art machine in the specification).

Joha teaches a methodof making a shoe upper by providing a knitted blank (figure 1) and forming it into an upper by a first seam and second seam substantially as claimed except for the exact method of forming the knitted blank. Santoni S.p.A. produces numerous knitting machines including wide tube circular knitting machines for producing knitted clothing items and at least one such available machine produces texture, different stitch configurations, elements, and apertures in a knitted product as described by applicant in the specification of this application. The Patent to Lonati (7207196, also

WO2004/097092) appears to be a Patent licensed to Santoni S.p.A. which is similar to the machine described by applicant as a machine used by applicant. It would have been obvious to form the upper of Joha with the knitting machine available from Santoni S.p.A. to provide a three-dimensional knitted element for the upper to provide improved fit and aesthetics of the upper/footwear of Joha.

***Response to Arguments***

3. Applicant's arguments filed 10/20/09 have been fully considered but they are not persuasive.

In response to applicants' arguments directed towards the newly added phrase "textile structure incorporates a single type of textile", the method and footwear of Joha as modified above does incorporate a "single type of textile", i.e. a footwear upper type of textile, clothing type of textile, etc. This phrase is unclear and vague. It is not clear what structural limitations applicant intends to encompass with such language.

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

1. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Other useful information can be obtained at the PTO Home Page at www.uspto.gov.

In order to avoid potential delays, Technology Center 3700 is encouraging FAXing of responses to Office Actions directly into the Center at *(571)273-8300* **(FORMAL FAXES ONLY)**. Please identify Examiner Marie Patterson of Art Unit 3728 at the top of your cover sheet.

Any inquiry concerning the MERITS of this examination from the examiner should be directed to Marie Patterson whose telephone number is (571) 272-4559. The examiner can normally be reached from 6AM - 4PM Mon-Wed.

/Marie Patterson/
Primary Examiner
Art Unit 3728

| Search Notes | Application/Control No. | Applicant(s)/Patent under Reexamination | |
|---|---|---|---|
| | 12/032,995 | DUA ET AL. | |
| | Examiner | Art Unit | |
| | Marie Patterson | 3728 | |

| SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 012 | 146C, 142G | | |
| 036 | 45, 10 | | |
| 036 | 55, 3A | | |
| Above | Updated | 11/24/2009 | /MP/ |
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| INTERFERENCE SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| | | | |
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| SEARCH NOTES (INCLUDING SEARCH STRATEGY) | | |
|---|---|---|
| | DATE | EXMR |
| Consulted Parent Application | 11/24/2009 | /MP/ |
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PTO/SB/08a (03-08)
Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 12032995 |
| Filing Date | 2008-02-18 |
| First Named Inventor | Bhupesh Dua |
| Art Unit | 3728 |
| Examiner Name | Marie D. Patterson |
| Attorney Docket Number | 005127.01133 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 2147197 | | 1936-11-25 | Glidden | |
| | 2 | 4211806 | | 1980-07-08 | Civardi et al. | |
| | 3 | 4255949 | | 1981-03-17 | Thorneburg | |
| | 4 | 4373361 | | 1983-02-15 | Thorneburg | |
| | 5 | 4447967 | | 1984-05-15 | Zaino | |
| | 6 | 4607439 | | 1986-08-26 | Harada | |
| | 7 | 4785558 | | 1988-11-22 | Shiomura | |
| | 8 | 4813158 | | 1989-03-21 | Brown | |



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.P./

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 9 | 5345638 | | 1994-09-13 | Nishida, et al. | |
| | 10 | 1888172 | | 1932-11-00 | Joha | |
| | 11 | 1902780 | | 1933-03-00 | Holden, et al. | |
| | 12 | 1910251 | | 1933-05-00 | Joha | |
| | 13 | 2001293 | | 1935-05-00 | Wallace | |
| | 14 | 2400692 | | 1946-05-00 | Herbert | |
| | 15 | 2641004 | | 1953-06-00 | Ronyan, et al. | |
| | 16 | 3694940 | | 1972-10-00 | Stohr | |
| | 17 | 6558784 | | 2003-05-00 | Norton, et al. | |
| | 18 | 6910288 | | 2004-06-00 | Dua | |
| | 19 | 6931762 | | 2005-08-00 | Dua | |



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.P./

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

| | | | | | | |
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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
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| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

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| | 1 | 20040118018 | | 2004-06-00 | Dua | |
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|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] i | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
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| | 1 | 90/03744 | WO | | 1990-04-19 | RBFPT, Inc. | | ☐ |
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| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | Santoni S.p.A. publication: Knitting Wear, SM8 Top 1 (2 pages) | ☐ |
| | 2 | International Search Report and Written Opinion in related PCT Application No. PCT/US2005/004776 mailed on May 19, 2005 | ☐ |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 12032995 |
| | Filing Date | 2008-02-18 |
| | First Named Inventor | Bhupesh Dua |
| | Art Unit | 3728 |
| | Examiner Name | Marie D. Patterson |
| | Attorney Docket Number | 005127.01133 |

| EXAMINER SIGNATURE | | | |
|---|---|---|---|
| Examiner Signature | /Marie Patterson/ | Date Considered | 11/23/2009 |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | |
|---|---|---|
| *In re* Application of | ) | |
| | ) | Art Unit: 3728 |
| Bhupesh DUA, et al. | ) | |
| | ) | Examiner: Patterson, Marie D. |
| Serial No.: 12/032,995 | ) | |
| | ) | Attorney Ref.: 005127.01133 |
| Filed: February 18, 2008 | ) | |
| | ) | Confirmation No.: 5554 |
| For: AN ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER | ) | |

**RESPONSE TO FINAL OFFICE ACTION**

Mail Stop - AF
Commissioner for Patents
U.S. Patent and Trademark Office
Alexandria, VA 22313

Sir:

In response to the Final Office Action dated November 30, 2009, Applicants present the following:

**Proposed Amendments to the Claims** begin on page 2.

**Remarks** begin on page 5.

**General Authorization of Payment of Fees**

If any fees are due in this application, whether or not associated with this filing, please charge any fees due to Deposit Account No. 19-0733.

## AMENDMENTS TO THE CLAIMS

Please replace all previous listing of the claims with the following:

1. (Currently Amended) A method of manufacturing an article of footwear, the method comprising steps of:

mechanically-manipulating a yarn with a circular knitting machine to form a cylindrical textile structure ~~that incorporates a single type of textile having a plurality of knit constructions~~;

removing at least one textile element from the textile structure;

incorporating the textile element into an upper of the article of footwear.

2. (Original) The method recited in claim 1, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine.

3. (Original) The method recited in claim 1, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element.

4. (Original) The method recited in claim 1, wherein the step of mechanically manipulating includes forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element.

5. (Original) The method recited in claim 1, wherein the step of mechanically manipulating includes forming at least two textile elements in the cylindrical textile structure.

6. (Original) The method recited in claim 1, wherein the step of mechanically manipulating includes forming apertures in the textile element.



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Skechers v Nike

7. (Original) The method recited in claim 1, wherein the step of incorporating includes securing a first pair of edges of the textile element to each other to form a first seam that extends along a lower region of the upper.

8. (Original) The method recited in claim 7, wherein the step of incorporating further includes securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper.

9. (Currently Amended) A method of manufacturing an article of footwear, the method comprising steps of:

mechanically-manipulating a yarn with a knitting machine to form a textile structure having an outline of at least one textile element~~, wherein the textile structure incorporates a single type of textile having a plurality of knit constructions~~;

removing the textile element from the textile structure;

incorporating the textile element into an upper of the article of footwear.

10. (Original) The method recited in claim 9, wherein the step of mechanically-manipulating includes utilizing a wide-tube circular knitting machine.

11. (Original) The method recited in claim 10, wherein the step of mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element.

12. (Original) The method recited in claim 9, wherein the step of mechanically-manipulating includes utilizing a jacquard double needle-bar raschel knitting machine.

13. (Original) The method recited in claim 9, wherein the step of mechanically manipulating includes forming the textile element to include a first area and a second area



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Skechers v Nike

with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element.

14. (Original) The method recited in claim 9, wherein the step of incorporating includes securing a first pair of edges of the textile element to each other to form a first seam that extends along a lower region of the upper.

15. (Previously Presented) The method recited in claim 14, wherein the step of incorporating further includes securing a second pair of edges of the textile element to each other to form a second seam that extends along a heel region of the upper.



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Skechers v Nike

## REMARKS

Applicants have carefully considered the Final Office Action mailed November 30, 2009, and respectfully request reconsideration of this application in view of the following remarks.

Claims 1-15 are pending. Claims 1 and 9 have been amended. The amendments to claims 1 and 9 place these claims back in their original form.

***Rejections under 35 USC § 112***

Claims 1-15 stand rejected under 35 USC § 112, second paragraph. The Examiner indicated that the phrase "a single type of textile" in claims 1 and 9 is confusing, vague and indefinite. Applicants have deleted this phrase from claims 1 and 9, thereby obviating this rejection.

***Rejections under 35 USC § 103(a)***

Claims 1-15 stand rejected under 35 USC § 103(a) as allegedly being unpatentable over Joha (US 1,910,251) in view of the disclosed Santoni S.p.A. SM8 TOP 1 knitting machine. Applicants respectfully traverse this rejection—specifically, the combination of references fails to disclose each and every element of the claims.

Independent Claims 1 and 9:

Claim 1 recites:

"mechanically-manipulating a yarn with a circular knitting machine to form a cylindrical textile structure;
"removing at least one textile element from the textile structure"; and
"incorporating the textile element into an upper of the article of footwear."

Claim 9 includes similar recitations.

Neither Joha nor Santoni discloses that a textile *element* is removed from a machine-knitted textile *structure* and that the textile *element* is incorporated into an upper of an article of footwear, as required by these claims.



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Skechers v Nike

Joha describes a knitted blank formed from a strip of flat knitted material having zig-zag side margins, wherein the knitted blank is folded and stitched to form a foot covering. Joha fails to disclose that any textile element is *removed* from the knitted blank and that such a removed textile element is incorporated into an upper. Rather, Joha discloses that the entire knitted blank is formed into the foot covering.

Santoni also fails to disclose that a textile element is removed from a textile structure. Santoni discloses a circular knitting machine that can be used to form a cylindrical textile structure. Santoni fails to disclose that any textile element is *removed* from the cylindrical machine-knitted textile structure. Further, Santoni fails to disclose the any removed textile element is incorporated into an upper of an article of footwear.

Thus, Joha and Santoni, either alone or in combination, do not disclose or suggest a method of manufacturing an article of footwear in which a textile *element* is *removed* from a textile *structure* formed on a knitting machine, as recited in Applicants' independent claims 1 and 9.

Therefore, the combination of Joha in view of Santoni does not disclose each and every element of claims 1 and 9, or of their corresponding dependent claims, 2-8 and 10-15, respectively. Applicants respectfully request that the Office withdraw this rejection and allow these claims.

Dependent Claims 3 and 11:

> Additionally, dependent claim 3 recites:
>
> "mechanically-manipulating includes forming a texture in the cylindrical textile structure with a shape of the textile element."

Claim 11 includes a similar recitation.

Neither Joha nor Santoni discloses that a texture is formed in the textile structure with a shape of the textile element, as required by these claims. Specifically, neither Joha nor Santoni disclose that a texture in the shape of the textile element is formed in the machine-knitted textile structure and that this textile element is subsequently removed from the textile



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structure. Thus, for this additional reason, dependent claims 3 and 11 are not rendered unpatentable over the combination of Joha and Santoni.

Dependent Claims 4 and 13:

> Additionally, dependent claim 4 recites:
>
> "mechanically-manipulating includes forming the textile element to include a first area and a second area with a unitary construction, the first area being formed of a first stitch configuration, and the second area being formed of a second stitch configuration that is different from the first stitch configuration to impart varying textures to a surface of the textile element."

Claim 13 includes a similar recitation.

Neither Joha nor Santoni discloses that the textile element includes a first area and a second area with a unitary construction, the first and second areas having different stitch configurations that impart different textures to the textile element, as required by these claims. Neither Joha nor Santoni disclose that a textile element, which has been removed from a machine-knitted textile structure, is formed with a plurality of stitch configurations and textures. Thus, for this additional reason, dependent claims 4 and 13 are not rendered unpatentable over the combination of Joha and Santoni.



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***Conclusion***

All rejections having been addressed, Applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same.

If the Examiner believes that a telephone conference or an interview will be useful to advance the prosecution of this application and/or to place the application in condition for allowance, she is invited to contact the undersigned attorney.

Respectfully submitted,
BANNER & WITCOFF, LTD.

Dated: March 17, 2010

By: /Jeanne M. Tanner/
Jeanne M. Tanner
Reg. No. 45,156

28 State St., Suite 1800
Boston, MA 02109-1701
617-720-9600



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# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 12032995 |
| **Filing Date:** | 18-Feb-2008 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Attorney Docket Number:** | 005127.01133 |

Filed as Large Entity

## Utility under 35 USC 111(a) Filing Fees

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |
| Extension - 1 month with $0 paid | 1251 | 1 | 130 | 130 |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **130** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 7229186 |
| **Application Number:** | 12032995 |
| **International Application Number:** | |
| **Confirmation Number:** | 5554 |
| **Title of Invention:** | ARTICLE OF FOOTWEAR HAVING A TEXTILE UPPER |
| **First Named Inventor/Applicant Name:** | Bhupesh Dua |
| **Customer Number:** | 22909 |
| **Filer:** | Jeanne Marian Tanner/Cassandra Meyer |
| **Filer Authorized By:** | Jeanne Marian Tanner |
| **Attorney Docket Number:** | 005127.01133 |
| **Receipt Date:** | 17-MAR-2010 |
| **Filing Date:** | 18-FEB-2008 |
| **Time Stamp:** | 16:11:14 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Deposit Account |
| Payment was successfully received in RAM | $130 |
| RAM confirmation Number | 2761 |
| Deposit Account | 190733 |
| Authorized User | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | | 005127-01133_Response-to-Final-OA.pdf | 128749<br>da11d5cf2fd408f19797a136be25ce7644e0a4a9 | yes | 8 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Amendment After Final | 1 | 1 |
| | Claims | 2 | 4 |
| | Applicant Arguments/Remarks Made in an Amendment | 5 | 8 |

**Warnings:**

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| | | | | | |
|---|---|---|---|---|---|
| 2 | Fee Worksheet (PTO-875) | fee-info.pdf | 30533<br>5dd7fc082932114e6d3b2943a5f9bbf563508968 | no | 2 |

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**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**