



(11) **EP 3 603 428 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
05.02.2020 Bulletin 2020/06

(51) Int Cl.:
A41B 11/00 (2006.01)

(21) Application number: **17903120.8**

(86) International application number:
PCT/JP2017/024437

(22) Date of filing: **04.07.2017**

(87) International publication number:
WO 2018/179467 (04.10.2018 Gazette 2018/40)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA MD

(71) Applicant: **Jinno, Kouichi**
Tokoname City, Aichi 479-0803 (JP)

(72) Inventor: **Jinno, Kouichi**
Tokoname City, Aichi 479-0803 (JP)

(74) Representative: **Danubia Patent & Law Office LLC**
Bajcsy-Zsilinszky út 16
1051 Budapest (HU)

(30) Priority: **27.03.2017 JP 2017061977**

(54) **SOCKS HAVING MULTIPLE TOE POUCHES**

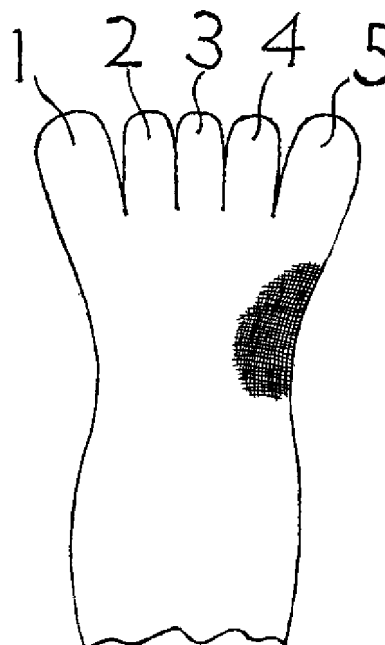
(57) [Problem]

To enable socks each having multiple toe pouches to be used for a long period of time by delaying generation of abrasion holes caused by use.

[Solution]

In socks having pouches corresponding to five toes, first-toe pouches and fifth-toe pouches are knitted to substantially the same size. Second-toe pouches and fourth-toe pouches are knitted to substantially the same size. The tips of the toe pouches are disposed at substantially the same position relative to and substantially symmetrically about the axis of a direction in which the socks are worn.

Fig. 1



Description

[Technical Field]

[0001] The present invention relates to socks each having multiple toe pouches, the socks allowing a change in an abrasion position where a toe pouch is abraded by an inner wall of a shoe.

[Background Art]

[0002] A typical five-toe sock has toe pouches designated to first to fifth toes of the foot wearing the sock. Hence, in a case where an abrasion position where a toe pouch is abraded by an inner wall of a shoe is to be changed, for example, the sock worn on the right foot is inverted to switch the top face and the bottom face and then worn on the left foot, thereby vertically changing the abrasion position.

[Summary of the Invention]

[Technical Problem]

[0003] An abrasion position where a toe pouch is abraded by an inner wall of a shoe is allowed to be changed in various ways, to evenly spread out the abraded regions, thereby extending the service life of the sock.

[Solution to Problem]

[0004] The configuration will now be described that allows a change in an abrasion position in various ways. A sock having five toe pouches includes a first-toe pouch and a fifth-toe pouch knitted to have substantially the same size, and a second-toe pouch and a fourth-toe pouch knitted to have substantially the same size. The toe pouches are knitted to have flat shapes such that the sock can be readily worn while the top face is disposed on the top or after the sock is inverted to switch the top face and the bottom face.

[0005] The tips of the toe pouches are disposed substantially symmetrically about and at substantially the same position relative to an axis extending along the direction in which the sock is worn. The portion that protrudes along the heel is knitted to have a large width in the horizontal direction to provide a sufficient margin.

[Advantageous Effects of the Invention]

[0006] A sock can be worn while the top face is disposed on the top. The sock can then be worn after the sock is inverted to switch the top face and the bottom face. The sock can then be worn on the other foot. Finally, the sock worn on the other foot can be inverted. This enables a change in the abrasion position where a toe pouch is abraded by an inner wall of a shoe in a total of four ways. This allows a change in position depending

on the degree of abrasion of the abraded surface of the sock, to delay the formation of a hole, thereby extending the service life of the sock.

[Brief Description of the Drawings]

[0007]

[FIG. 1] FIG. 1 is a plan view of a sock according to a first embodiment. (The sock opening is not illustrated.)

[FIG. 2] FIG. 2 is a plan view of a sock according to a second embodiment. (The sock opening is not illustrated.)

[FIG. 3] FIG. 3 is a plan view of a sock according to a third embodiment. (The sock opening is not illustrated.)

[FIG. 4] FIG. 4 is a plan view of a typical five-toe sock. (The sock opening is not illustrated.)

[Description of the Embodiments]

[0008] A sock having toe pouches includes a first-toe pouch and a fifth-toe pouch knitted to have substantially the same size, and a second-toe pouch and a fourth-toe pouch knitted to have substantially the same size. These pouches are disposed symmetrically about a third-toe pouch.

[First Embodiment]

[0009] FIG. 1 is a plan view of a sock having five toe pouches according to the first embodiment of the present invention. A first-toe pouch 1 and a fifth-toe pouch 5 are knitted to have substantially the same size and disposed symmetrically about a third-toe pouch 3. Furthermore, a second-toe pouch 2 and a fourth-toe pouch 4 are knitted to have substantially the same size and disposed symmetrically about the third-toe pouch 3. The tips of the toe pouches are disposed substantially symmetrically about and at substantially the same position relative to an axis extending along the direction in which the sock is worn. The portion that protrudes along the heel is knitted with a margin provided by a large width in the horizontal direction. The sock having five toe pouches has such a configuration.

[0010] An example will now be described of different wearing positions in which toes are placed in the toe pouches. In a first state, the five-toe sock illustrated in FIG. 1 is worn on the right foot such that the first toe is placed in the first-toe pouch 1, and the fifth toe is placed in the fifth-toe pouch 5. In a second state, the sock is inverted to switch the bottom face and the top face and worn on the same right foot such that the first toe is placed in the fifth-toe pouch 5 and the fifth toe is placed in the first-toe pouch 1.

[0011] In a third state, the sock in the first state is worn on the left foot such that the first toe of the left foot is

placed in the fifth-toe pouch 5 and the fifth toe is placed in the first-toe pouch 1. In a fourth state, the sock in the third state is inverted to switch the bottom face and the top face and worn such that the first toe is placed in the first-toe pouch 1 and the fifth toe is placed in the fifth-toe pouch 5. Through these four states, the abrasion position where a toe pouch is abraded by an inner wall of a shoe can be changed in four ways.

[Second Embodiment]

[0012] FIG. 2 is a plan view of a sock according to a second embodiment of the present invention. The sock includes a pouch 6 having a size large enough to accommodate three toes of the second, third, and fourth toes, and a first-toe pouch 1 and a fifth-toe pouch 5 knitted to have the same size and disposed symmetrically on the left and right sides of the pouch 6. The portion that protrudes along the heel is knitted with a margin provided by a large width in the horizontal direction.

[0013] Since the sock has such a configuration, the first toe is placed in the first-toe pouch 1, the second, third, and fourth toes are placed in the three-toe pouch 6, and the fifth toe is placed in the fifth-toe pouch 5. Similar to the toe pouches in the first embodiment, the first-toe pouch 1 and the fifth-toe pouch 5 have the same size and are disposed symmetrically on the left and right sides of the three-toe pouch 6. Thus, the sock worn on the right foot can be vertically inverted and worn; the inverted sock can be worn on the left foot; and the sock worn on the left foot can be inverted. That is, the abrasion position where a toe pouch is abraded by an inner wall of a shoe can be changed in four ways, as in the first embodiment.

[Third Embodiment]

[0014] FIG. 3 is a plan view of a sock according to a third embodiment of the present invention including a first-toe pouch 1 and a fifth-toe pouch 8 knitted to have substantially the same size. Furthermore, a second-toe pouch 2 and a fourth-toe pouch 7 are knitted to have substantially the same size. The tips of the toe pouches are disposed asymmetrically about the axis extending along the direction in which the sock is worn but instead are arranged such that the third-toe pouch 3, the fourth-toe pouch 7, and the fifth-toe pouch 8 are retracted in this order relative to the first-toe pouch 1 and the second-toe pouch 2. The sock having five toe pouches has such a configuration. The portion that protrudes along the heel is knitted to have a large width in the horizontal direction to provide a sufficient margin.

[0015] The flexibility of the fabric allows the sock having such a configuration to be worn such that the abrasion position is changed in four different ways, as in the first embodiment, even when the third-toe pouch 3, the fourth-toe pouch 7, and the fifth-toe pouch 8 are retracted relative to the first-toe pouch 1 and the second-toe pouch 2.

[Industrial Applicability]

[0016] A sock can be worn while the top face is disposed on the top. The sock can then be worn after the sock is inverted to switch the top face and the bottom face. The sock can then be worn on the other foot. Finally, the sock worn on the other foot can be inverted. In this way, the sock can be worn such that the abrasion position where a toe pouch is abraded by an inner wall of a shoe is changed in four different ways.

[0017] This enables fine adjustment of the position of abrasion on the sock. That is, an abraded surface of the sock is allowed to be changed depending on the degree of abrasion, to delay the formation of a hole, thereby extending the service life of the sock.

[Reference Signs List]

[0018]

- 1 first-toe pouch
- 2 second-toe pouch
- 3 third-toe pouch
- 4 fourth-toe pouch
- 5 fifth-toe pouch
- 6 three-toe pouch
- 7 fourth-toe pouch knitted to have substantially the same size as the second-toe pouch
- 8 fifth-toe pouch knitted to have substantially the same size as the first-toe pouch

Claims

1. A sock comprising:
a plurality of toe pouches including a first-toe pouch and a fifth-toe pouch knitted to have substantially a same size.
2. The sock comprising a plurality of toe pouches according to claim 1, wherein the plurality of toe pouches comprises five toe pouches, and the five toe pouches comprises, in a symmetrical arrangement about a third-toe pouch, a first-toe pouch and a fifth-toe pouch knitted to have substantially a same size and a second-toe pouch and a fourth-toe pouch knitted to have substantially a same size.
3. The sock comprising a plurality of toe pouches according to claim 1, wherein the plurality of toe pouches comprises three toe pouches, and the three toe

pouches comprises a three-toe pouch, a first-toe pouch, and a fifth-toe pouch, the three-toe pouch being knitted in a central position and accommodating a second toe, a third toe, and a fourth toe, the first-toe pouch and the fifth-toe pouch being knitted to have substantially a same size and disposed on left and right sides of the three-toe pouch.

4. The sock comprising a plurality of toe pouches according to claim 1, wherein the plurality of toe pouches comprises five toe pouches, the five toe pouches comprises a first-toe pouch and a fifth-toe pouch are knitted to have substantially a size, and the fifth-toe pouch is retracted further than the first-toe pouch relative to an axis extending along a direction in which the sock is worn.

20

25

30

35

40

45

50

55

Fig. 1

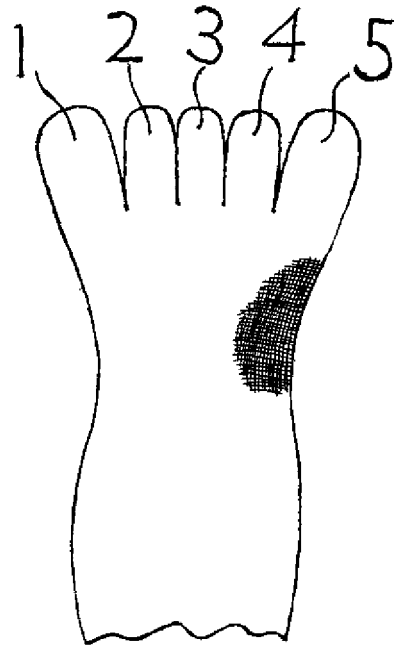


Fig. 2

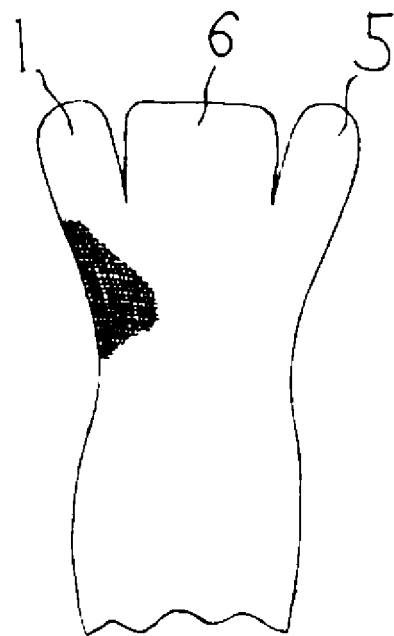
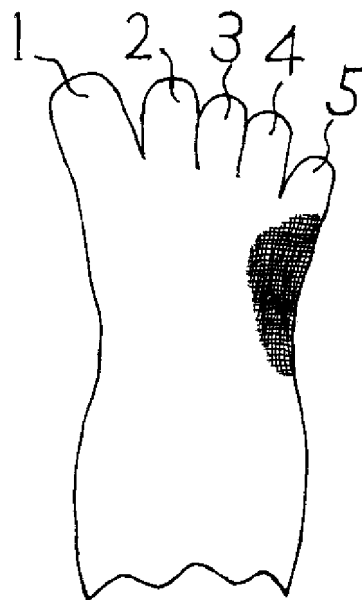


Fig. 3



Fig. 4



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2017/024437

A. CLASSIFICATION OF SUBJECT MATTER

A41B11/00(2006.01)i

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)

A41B11/00-11/14, A61F5/00-5/02, 5/14, 13/06-13/08

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

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2017

Kokai Jitsuyo Shinan Koho 1971-2017 Toroku Jitsuyo Shinan Koho 1994-2017

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 99899/1974 (Laid-open No. 28232/1976) (Norikazu MAEZAWA), 01 March 1976 (01.03.1976), specification, pages 1, 2; fig. 1, 2 (Family: none)	1 2-4
X A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 177781/1983 (Laid-open No. 86508/1985) (Norikazu MAEZAWA), 14 June 1985 (14.06.1985), specification, pages 1 to 4; fig. 1, 2 (Family: none)	1 2-4

☒ Further documents are listed in the continuation of Box C.☐ See patent family 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 application or patent 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
26 September 2017 (26.09.17)Date of mailing of the international search report
10 October 2017 (10.10.17)Name and mailing address of the ISA/
Japan Patent Office
3-4-3, Kasumigaseki, Chiyoda-ku,
Tokyo 100-8915, Japan

Authorized officer

Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2017/024437

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	JP 2010-285732 A (Nobuyuki OKUMA), 24 December 2010 (24.12.2010), claim 1; paragraphs [0004], [0005]; fig. 1 (Family: none)	1 2-4
A	JP 2013-142205 A (Hideyuki NAGAMI), 22 July 2013 (22.07.2013), (Family: none)	1-4
A	JP 2007-23409 A (Revealle Co., Ltd.), 01 February 2007 (01.02.2007), (Family: none)	1-4
A	JP 59-43101 A (Kunio WASHIO), 10 March 1984 (10.03.1984), (Family: none)	1-4

Form PCT/ISA/210 (continuation of second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2017/024437

5

Object to be covered by this search:

10

(i) Referring to claim 3, in the wording "place the three fingers of the index finger, the middle finger, and the little finger in a middle finger pocket", the "little finger" is considered to be an error for "ring finger".

15

(ii) Referring to claim 3, a search has been conducted assuming that the wording "place the three fingers of the index finger, the middle finger, and the little finger in a middle finger pocket" means "place the three fingers of the index finger, the middle finger, and the ring finger in a middle finger pocket".

20

25

30

35

40

45

50

55

Form PCT/ISA/210 (extra sheet) (January 2015)