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HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

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(54) Title: RAPID-ENTRY FOOTWEAR HAVING A SPLIT BACK

(57) Abstract: A rapid-entry shoe having a heel counter to prevent inward deflection of a rear portion of the upper, but the heel counter having a vertical slit to permit downward deflection of the rear portion of the upper, so as to expand a perimeter of an opening of the shoe to receive a foot and thereby facilitate donning and doffing of the rapid-entry shoe.

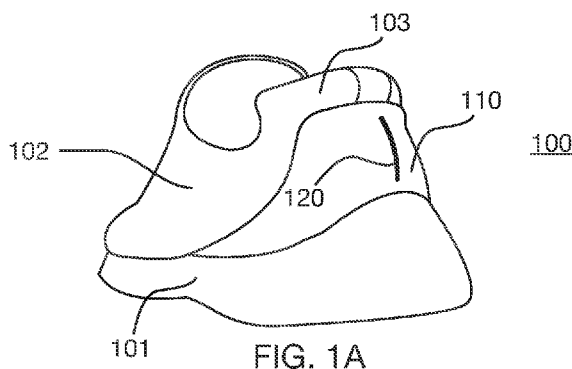


FIG. 1A



TITLE: RAPID-ENTRY FOOTWEAR HAVING A SPLIT BACK

INVENTORS: CRAIG CHENEY, BRADLEY JOHNSON

5 FIELD

[0001] The present disclosure relates to footwear, and more particularly to rapid-entry footwear having a split back.

BACKGROUND

10 [0002] Whether due to inconvenience or inability, donning and doffing of shoes, including tying or otherwise securing the same, may be undesirable and/or present difficulties to some individuals. The present disclosure addresses this need.

15 SUMMARY

[0003] A rapid-entry shoe in accordance with the present disclosure comprises a sole portion, an upper, and a heel counter coupled to the upper. The heel counter can be configured to prevent inward deflection of a rear portion of the upper.

20 [0004] In example embodiments, the heel counter comprises a vertical slit configured to permit downward deflection of the rear portion of the upper.

[0005] In example embodiments, the rapid-entry shoe has an uncollapsed configuration. In example embodiments, in the uncollapsed configuration, the vertical slit is substantially closed.

25 [0006] In example embodiments, the rapid-entry shoe has a collapsed configuration to facilitate donning and doffing of the rapid-entry shoe. In example embodiments, in the collapsed configuration, the vertical slit is open to create an aperture and expand a perimeter of the heel counter.

30 [0007] In example embodiments, the rapid-entry shoe is biased by the heel counter toward the uncollapsed configuration.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The accompanying drawings may provide a further understanding of example embodiments of the present disclosure and are incorporated in, and

constitute a part of, this specification. In the accompanying drawings, only one rapid-entry shoe (either a left shoe or a right shoe) may be illustrated, however, it should be understood that in such instances, the illustrated shoe may be mirror-imaged so as to be the other shoe. The use of like reference numerals throughout the accompanying drawings is for convenience only, and should not be construed as implying that any of the illustrated embodiments are equivalent. The accompanying drawings are for purposes of illustration and not of limitation.

[0009] FIGS. 1A-1C progressively illustrate an example embodiment of a rapid-entry shoe moving from an uncollapsed configuration to a collapsed configuration;

[0010] FIGS. 2A and 2B illustrate an example embodiment of another rapid-entry shoe having a slit in closed and open configurations, respectively; and

[0011] FIGS. 3A and 3B illustrate an example embodiment of a rapid-entry shoe having a plurality of slits in closed and open configurations, respectively.

DETAILED DESCRIPTION

[0012] Example embodiments of the present disclosure are described in sufficient detail in this detailed description to enable persons having ordinary skill in the relevant art to practice the present disclosure, however, it should be understood that other embodiments may be realized and that mechanical and chemical changes may be made without departing from the spirit or scope of the present disclosure. Thus, this detailed description is for purposes of illustration and not of limitation.

[0013] For example, unless the context dictates otherwise, example embodiments described herein may be combined with other embodiments described herein. Similarly, references to "example embodiment," "example embodiments" and the like indicate that the embodiment(s) described may comprise a particular feature, structure, or characteristic, but every embodiment may not necessarily comprise the particular feature, structure, or characteristic. Moreover, such references may not necessarily refer to the same embodiment(s). Any reference to singular includes plural embodiments, and any reference to plural includes singular embodiments.

[0014] Any reference to coupled, connected, attached or the like may be temporary or permanent, removeable or not, non-integral or integral, partial or full, and may be facilitated by one or more of adhesives, stitches, hook and loop fasteners, buttons, clips, grommets, zippers and other means known in the art or hereinafter developed.

[0015] As used herein, the transitional term “comprising”, which is synonymous with “including,” “containing,” or “characterized by,” is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. The transitional phrase “consisting of” excludes any element, step, or ingredient not specified in the claim. The transitional phrase “consisting essentially of” limits the scope of a claim to the specified materials or steps “and those that do not materially affect the basic and novel characteristic(s)” of the claimed invention.

[0016] No claim limitation is intended to invoke 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph or the like unless it explicitly uses the term “means” and includes functional language.

[0017] In describing example embodiments of the rapid-entry footwear, certain directional terms may be used. By way of example, terms such as “right,” “left,” “medial,” “lateral,” “front,” “back,” “forward,” “backward,” “rearward,” “top,” “bottom,” “upper,” “lower,” “up,” “down,” and the like may be used to describe example embodiments of the rapid-entry footwear. These terms should be given meaning according to the manner in which the rapid-entry footwear is most typically designed for use, with the rapid-entry footwear on a user’s foot and with the user’s shod foot disposed on or ready for placement on an underlying surface. Thus, these directions may be understood relative to the rapid-entry footwear in such use. Similarly, as the rapid-entry footwear is intended primarily for use as footwear, terms such as “inner,” “inward,” “outer,” “outward,” “innermost,” “outermost,” “inside,” “outside,” and the like should be understood in reference to the rapid-entry footwear’s intended use, such that inner, inward, innermost, inside, and the like signify relatively closer to the user’s foot, and outer, outward, outermost, outside, and the like signify relatively farther from the user’s foot when the rapid-entry footwear is being used for its intended purpose. Notwithstanding the foregoing, if the foregoing definitional guidance is contradicted by an individual use herein

of any of the foregoing terms, the term should be understood and read according to the definition that gives life and meaning to the particular instance of the term.

[0018] As used herein, unless the context dictates otherwise, a “rapid-entry shoe” refers to an athleisure shoe, a casual shoe, a formal shoe, a dress shoe, a heel, a sports/athletic shoe (e.g., a tennis shoe, a golf shoe, a bowling shoe, a running shoe, a basketball shoe, a soccer shoe, a ballet shoe, etc.), a walking shoe, a sandal, a boot, or other suitable type of shoe. Additionally, a rapid-entry shoe can be sized and configured to be worn by men, women, or children.

[0019] As used herein, unless the context dictates otherwise, a “sole portion” of a rapid-entry shoe refers to an outsole or portions thereof, a midsole or portions thereof, an insole or portions thereof, a wedge or portions thereof, or other suitable structure disposed between and/or adjacent to the foregoing parts of a rapid-entry shoe, for example, an insole or an internal cushion.

[0020] As used herein, unless the context dictates otherwise, a “rear portion of an upper” refers to any rear portion of an upper, for example, a heel portion or backstrap, including a topline thereof.

[0021] With reference to Figures 1A-1C, a rapid-entry shoe 100 in accordance with the present disclosure comprises a sole portion 101 and an upper 102.

[0022] A rapid-entry shoe 100 in accordance with the present disclosure further comprises a heel counter 110 coupled to the upper 102, the heel counter 110 configured to prevent inward deflection of a rear portion 103 of the upper 102. In example embodiments, the heel counter 110 is coupled to the upper 102 at an edge or other lateral portion of the heel counter 110 (i.e., but not at a middle or other medial portion of the heel counter 110).

[0023] In accordance with example embodiments, the heel counter 110 is sandwiched within the upper 102, while in other example embodiments, the heel counter 110 is coupled to a single side of the upper 102 (e.g., an outer surface, as illustrated, or an inner surface of the upper 102).

[0024] In accordance with example embodiments of the present disclosure, the heel counter 110 is one or more of semi rigid, resiliently deformable, elastically deformable, and comprised of a shape memory material.

[0025] In accordance with example embodiments of the present disclosure, return of the shoe 100 to the uncollapsed configuration (discussed below) is assisted by a secondary system, for example, a deformable element or a compressible lattice structure.

5 [0026] In accordance with an example embodiment of the present disclosure, the heel counter 110 comprises a slit 120 (e.g., a vertical slit), or a plurality of slits, configured to permit downward deflection of the rear portion 103 of the upper 102 of the shoe 100 toward the sole portion 101.

10 [0027] As used herein, unless the context dictates otherwise, a “slit” refers to a split, cut or other opening passing through or extending completely from one side to another (e.g., to expose or reveal an ornamental feature on underlying the upper 102), or a material or portion thereof weaker or thinner (e.g., scored or perforated) than an adjacent material or portion thereof. Additionally, while a slit can be linear, a slit can also be non-linear (e.g., be y-shaped or be comprised of one or more zig-zags, curves, waves or the like). A
15 slit 120 can also be at an angle (i.e., not vertical, as illustrated). A slit 120 can be formed with a mechanical implement (e.g., a blade), a heat implement (e.g., a laser), or otherwise.

20 [0028] In example embodiments, an upper end of the slit 120 does not extend to an outer edge of the heel counter 110. In other example embodiments, a lower end of the slit 120 does not extend to an outer edge of the heel counter 110. In still other example embodiments, neither end of the slit 120 extends to an outer edge of the heel counter 110.

25 [0029] In accordance with example embodiments, a slit 120 can be reinforced, for example, with a spot weld or a stitch at one or both ends of the slit 120. In accordance with example embodiments, a slit 120 can comprise an enlarged portion (e.g., circular or y-shaped) at one or both ends of the slit 120 to accommodate lateral edges of the vertical slit 120 being bowed (discussed below).

30 [0030] In accordance with another example embodiment of the present disclosure, and with momentary reference to Figures 2A and 2B, the heel counter 110 of a rapid-entry shoe 100 comprises a vertical slit 120 and an intersecting horizontal slit 130, together configured to permit downward deflection of the rear portion 103 of the upper 102 of the shoe 100 toward the

sole portion 101. In combination, vertical slit 120 and horizontal slit 130 form a contiguous t-shaped slit.

[0031] FIGS. 3A and 3B illustrate an example embodiment of a rapid-entry shoe 100 having a plurality of vertical and parallel slits 120 that work together to permit downward deflection of the rear portion 103 of the upper 102 of the shoe 100 toward the sole portion 101.

[0032] Optionally, and in connection with any of the foregoing embodiments, a rapid-entry shoe 100 in accordance with the present disclosure can further comprise a rear stabilizer coupled to the rear portion 103, the rear stabilizer configured to prevent inward deflection of the rear portion 103.

[0033] In general, the rear stabilizer can be configured to direct a rear portion of an upper to compress downward and/or lean rearward (and prevent a rear portion of an upper from deflecting inward, which would reduce the perimeter of the opening of rapid-entry shoe 100). In this regard, in example embodiments, the rear stabilizer is configured to prevent inward deflection of the rear portion 103 when the rapid entry shoe is deformed to the collapsed configuration.

[0034] In some embodiments, the rear stabilizer is v-shaped, u-shaped, horse-shoe-shaped (with consistent or inconsistent curvature as it rounds a rear portion of an upper), or otherwise has an elongated shape, and thus extends around a rear portion of an upper. The rear stabilizer can be coupled to an inside or outside surface of rear portion 103, or be embedded within rear portion 103.

[0035] In example embodiments, the rear stabilizer comprises a mechanical property different from that of an adjacent rear portion 103, the mechanical property being one or more of material, cross-section, thickness, geometry, twisting and density. For instance, the rear stabilizer can comprise a reinforced section of rear portion 103. In example embodiments, the rear stabilizer is more rigid than adjacent rear portion 103.

[0036] Without limiting the foregoing, in some embodiments the rear stabilizer can be comprised of a thicker or more dense section of the same material of which rear portion 103 is comprised, but geometrically adjusted to provide stability to rear portion 103.

[0037] Optionally, a rapid-entry shoe 100 in accordance with the present disclosure can further comprise a flare coupled to the rear portion 103, the flare extending rearward and acting as a shoehorn (e.g., to direct a foot into the foot opening during entry).

5 [0038] In accordance with example embodiments of the present disclosure, the rapid-entry shoe 100 has an uncollapsed configuration (Figure 1A). In accordance with example embodiments of the present disclosure, the rapid-entry shoe 100 has a collapsed configuration (Figure 1C) to facilitate donning and doffing of the rapid-entry shoe 100. In accordance with example
10 embodiments of the present disclosure, the rapid-entry shoe 100 is biased by the heel counter 110 toward the uncollapsed configuration (Figure 1A).

[0039] In accordance with example embodiments of the present disclosure, in the uncollapsed configuration (Figure 1A), the vertical slit 120 is substantially closed (i.e., lateral edges of the vertical slit 120 are parallel or otherwise
15 adjacent to one another).

[0040] In accordance with example embodiments of the present disclosure, in the collapsed configuration (Figure 1C), opposing ends of the vertical slit 120 are moved toward one another such that lateral edges of the vertical slit 120 are bowed outward (e.g., laterally), not parallel or otherwise moved away from
20 one another to thereby create an aperture 122 defined by lateral edges of the vertical slit 120, or otherwise open the vertical slit 120, and thereby expand a perimeter of the heel counter 110 (and in turn, expand a perimeter of an opening of the shoe to receive a foot). In example embodiments, in the collapsed configuration, a portion of the upper 102 is bowed away from (e.g., forwardly
25 relative to, or rearwardly relative to as illustrated) a middle or other medial portion of the heel counter 110 (e.g., which can be bowed away in a generally opposing direction).

[0041] In example embodiments, in the uncollapsed configuration (Figure 1A), the distance between lateral edges of the vertical slit 120 is less than the
30 distance between opposing ends of the vertical slit 120.

[0042] In example embodiments, in the collapsed configuration (Figure 1C), the distance between lateral edges of the vertical slit 120 is the same as or greater than the distance between opposing ends of the vertical slit 120.

[0043] In this regard, in some embodiments, in the collapsed configuration, a bowed portion 124 of the heel counter 110 is folded over a lower portion 126 of the heel counter 110 toward the sole portion 101. In some embodiments, in the collapsed configuration, a bowed portion 124 of the heel counter 110 is folded further, over a portion of the sole portion 101 (Figure 1C). In other embodiments, in the collapsed configuration, the bowed portion 124 of the heel counter 110 is folded under the lower portion 126 of the heel counter 110 toward the sole portion 101.

[0044] In example embodiments, a resilient element is coupled between lateral edges of the vertical slit 120, and the resilient element is elongated in the collapsed configuration as lateral edges of the vertical slit 120 are bowed outward, not parallel or otherwise moved away from one another, so as to further bias the rapid-entry shoe 100 toward the uncollapsed configuration.

[0045] In example embodiments, the aperture 122 (i.e., when the shoe is in a partially collapsed or a collapsed configuration) has a marquis, football, pear, teardrop or other elongated elliptical shape with pointed ends.

[0046] In example embodiments, opening of the aperture 122 exposes or reveals an ornamental feature on the upper 102 (e.g., a different color, a design feature, a logo, or a portion of any of the foregoing, e.g., to combine with a corresponding portion on the heel counter 110).

[0047] In example embodiments, the aperture 122 is covered (e.g., on an inner surface and/or an outer surface) by a film to as to prevent dirt or debris from entering the aperture or otherwise provide an ornamental feature to the rapid-entry shoe 100.

[0048] It will be apparent to those skilled in the art that various modifications and variations can be made in the present disclosure without departing from the spirit or scope of the disclosure. Thus, it is intended that the embodiments described herein cover the modifications and variations of this disclosure provided they come within the scope of the appended claims and their equivalents.

[0049] Numerous characteristics and advantages have been set forth in the preceding description, including various alternatives together with details of the structure and function of the devices and/or methods. The disclosure is intended as illustrative only and as such is not intended to be exhaustive. It will

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be evident to those skilled in the art that various modifications can be made, especially in matters of structure, materials, elements, components, shape, size and arrangement of parts including combinations within the principles of the invention, to the full extent indicated by the broad, general meaning of the terms in which the appended claims are expressed. To the extent that these various modifications do not depart from the spirit and scope of the appended claims, they are intended to be encompassed therein.

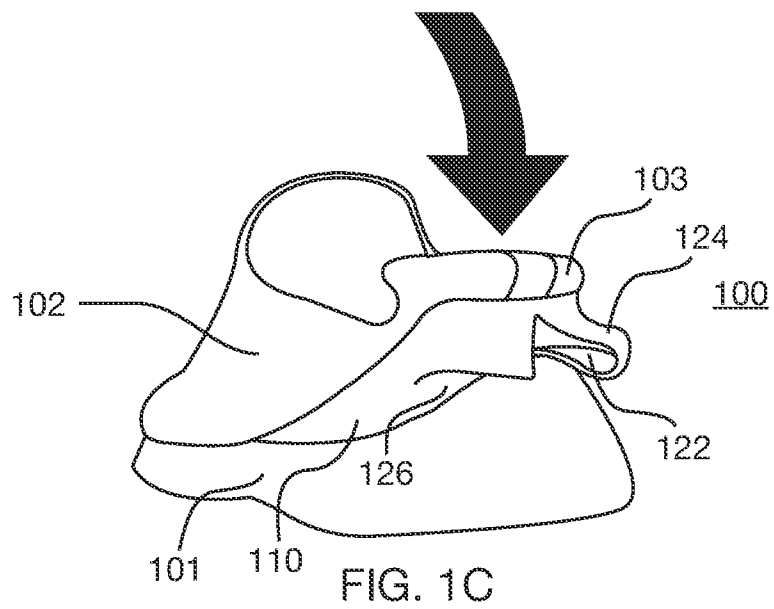
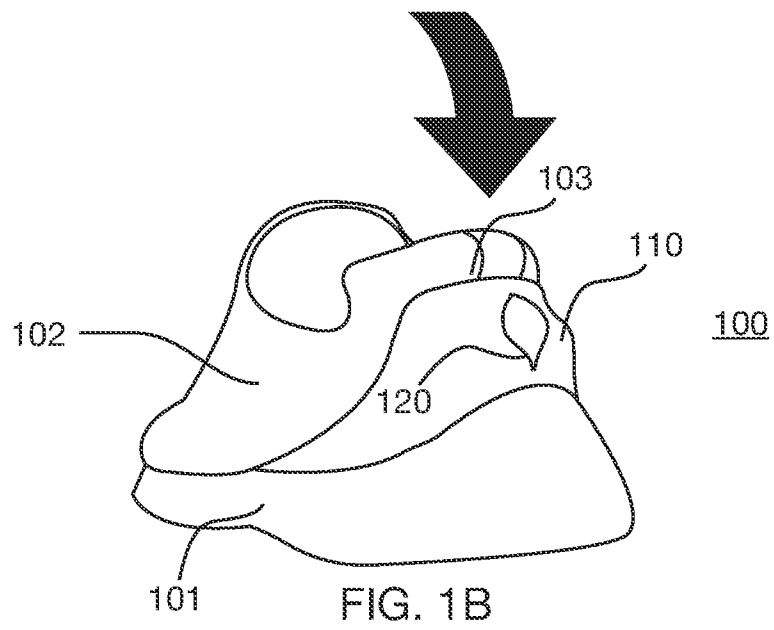
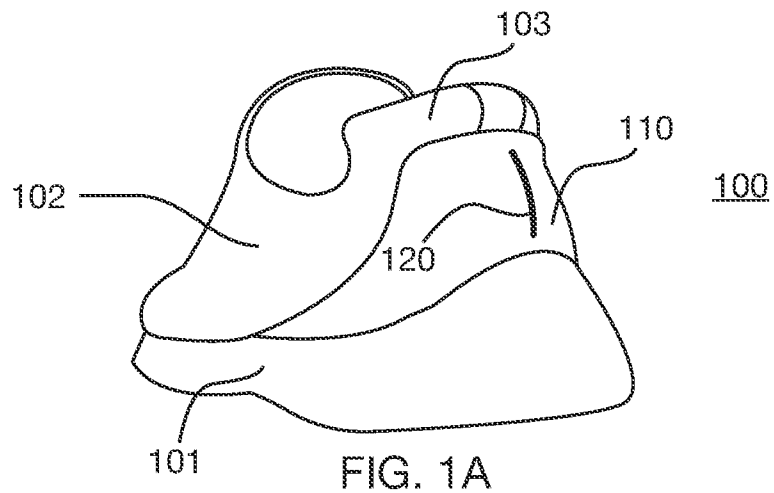
CLAIMS

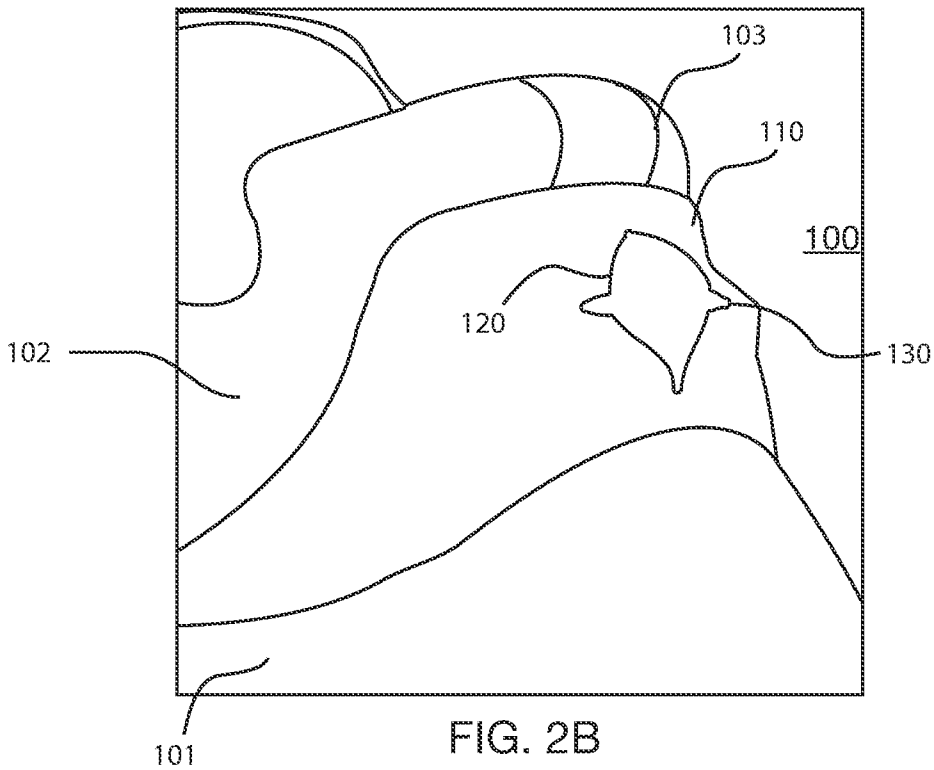
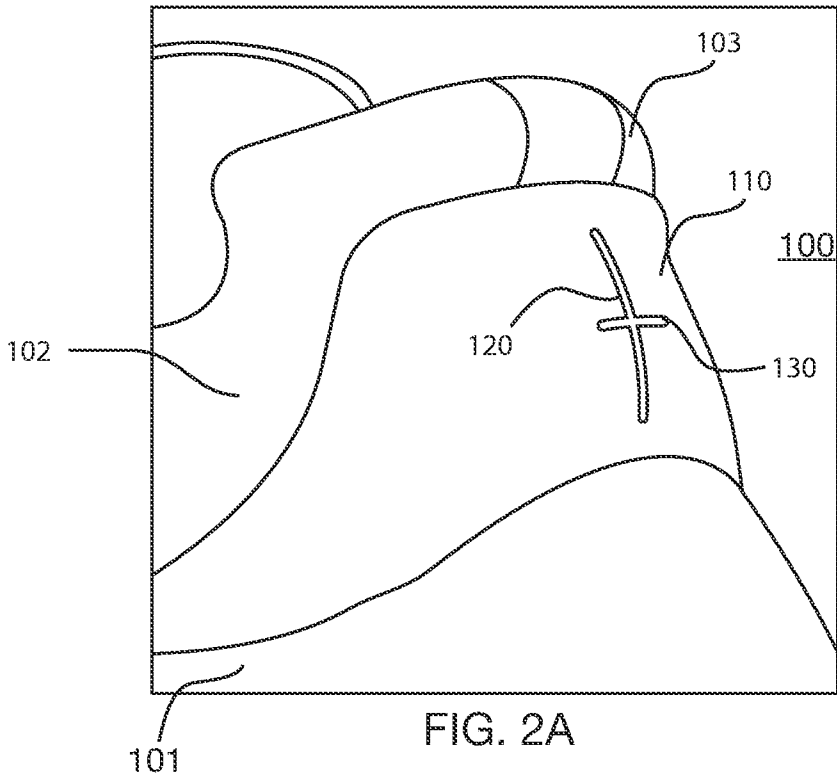
We claim:

1. A rapid-entry shoe comprising:
a sole portion;
an upper; and
a heel counter coupled to the upper, the heel counter configured to prevent inward deflection of a rear portion of the upper;
wherein the heel counter comprises a vertical slit configured to permit downward deflection of the rear portion of the upper;
wherein the rapid-entry shoe has an uncollapsed configuration;
wherein the rapid-entry shoe has a collapsed configuration to facilitate donning and doffing of the rapid-entry shoe;
wherein, in the uncollapsed configuration, the vertical slit is substantially closed;
wherein, in the collapsed configuration, the vertical slit is open to create an aperture and expand a perimeter of the heel counter;
wherein the rapid-entry shoe is biased by the heel counter toward the uncollapsed configuration.
2. The rapid-entry shoe of claim 1, wherein the heel counter is not coupled to the upper at a middle or other medial portion of the heel counter.
3. The rapid-entry shoe of claim 1, wherein the heel counter is coupled to an outer surface of the upper.
4. The rapid-entry shoe of claim 1 comprising a plurality of vertical slits, each of the plurality of vertical slits being parallel with each other.
5. The rapid-entry shoe of claim 1, wherein the slit comprises a y-shape or a t-shape.
6. The rapid-entry shoe of claim 1, wherein in the collapsed configuration opposing ends of the vertical slit are moved toward one another and lateral edges of the vertical slit are moved away from one another.
7. The rapid-entry shoe of claim 1, wherein in the collapsed configuration a bowed portion of the heel counter is folded over a lower portion of the heel counter toward the sole portion.
8. The rapid-entry shoe of claim 1, wherein the aperture exposes or reveals an ornamental feature on the upper.

9. The rapid-entry shoe of claim 1, further comprising a rear stabilizer coupled to the rear portion, the rear stabilizer configured to prevent inward deflection of the rear portion when the rapid-entry shoe is in the collapsed configuration.

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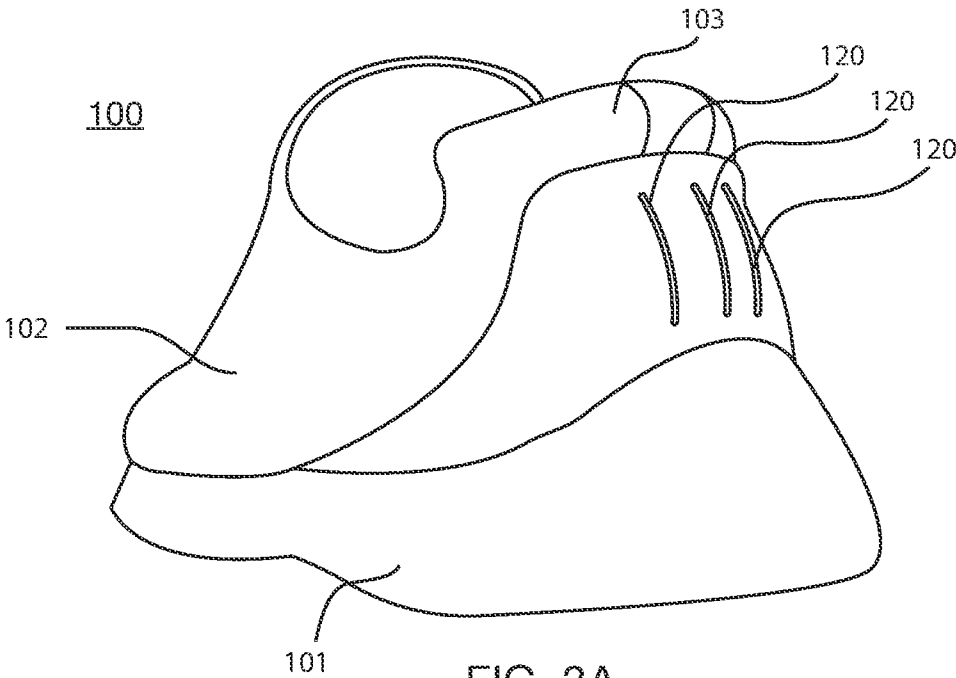


FIG. 3A

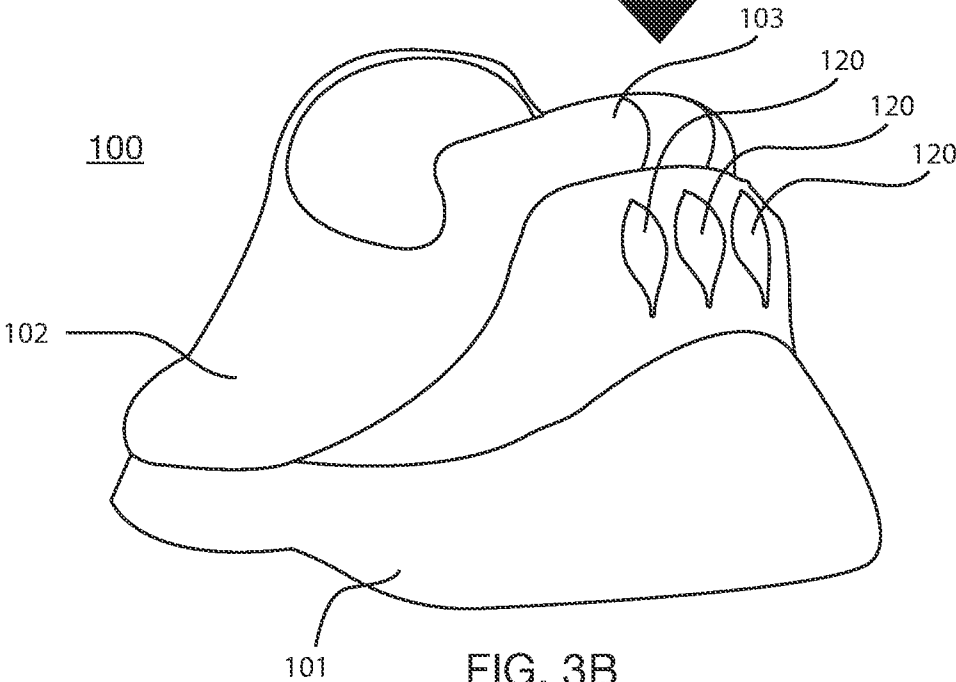
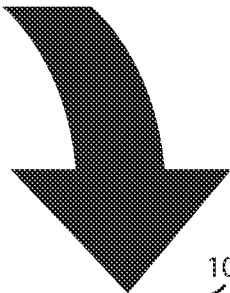


FIG. 3B

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P-05616		FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2021/059496	International filing date (day/month/year) 16 November 2021	(Earliest) Priority Date (day/month/year) 20 November 2020	
Applicant FAST IP, LLC			

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 2 sheets.

☐ 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.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ 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 No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

- ☒ 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**,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2, 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. 1A
☐ 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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2021/059496

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A43B 21/24; A43B 1/00; A43B 1/04; A43B 3/16; A43B 5/00; A43B 5/10; A43B 5/18 (2022.01)

CPC - A43B 21/24; A43B 1/00; A43B 1/04; A43B 3/16; A43B 5/00; A43B 5/10; A43B 5/18; A43B 7/14; A43B 13/14; A43B 13/18; A43B 17/00; A43B 21/32; A43B 23/02; A43B 23/08; A43B 23/16; A43B 23/28 (2022.01)

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)

see Search History document

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

see Search History document

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

see Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2,693,039 A (BALUT) 02 November 1954 (02.11.1954) entire document	1, 2, 8 --- 3-5, 7, 9
Y	US 10,555,578 B2 (FAST IP LLC) 11 February 2020 (11.02.2020) entire document	3, 7, 9
Y	US 8,333,021 B2 (JOHNSON) 18 December 2012 (18.12.2012) entire document	4
Y	— KR 10-0936510 B1 (CHOI) 13 January 2010 (13.01.2010) see machine translation	5
A	US 10,660,401 B1 (FAST IP LLC) 26 May 2020 (26.05.2020) entire document	1-9

☐ 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

"D" document cited by the applicant in the international application

"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

06 January 2022

Date of mailing of the international search report

JAN 31 2022

Name and mailing address of the ISA/US

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Authorized officer

Harry Kim

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