(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
04 April 2024 (04.04.2024)

WIPO | PCT

(10) International Publication Number
WO 2024/069372 A4

(51) International Patent Classification:
A43B 3/00 (2022.01) *A43B 13/12* (2006.01)
A43B 3/24 (2006.01) *A43B 13/36* (2006.01)
A43B 13/02 (2022.01) *A43B 13/18* (2006.01)

(21) International Application Number:
PCT/IB2023/059470

(22) International Filing Date:
25 September 2023 (25.09.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/409,950 26 September 2022 (26.09.2022) US

(71) Applicant: **PUMA SE** [DE/DE]; Puma Way 1, 91074 Herzogenaurach (DE).

(72) Inventor: **NARRIMAN, Neil Jafar**; Am Rahmberg 1, 91074 Herzogenaurach (DE).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, 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.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:
— *with international search report (Art. 21(3))*
— *with amended claims and statement (Art. 19(1))*
— *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*

(54) Title: ARTICLE OF FOOTWEAR HAVING A MODULAR PLATE SYSTEM

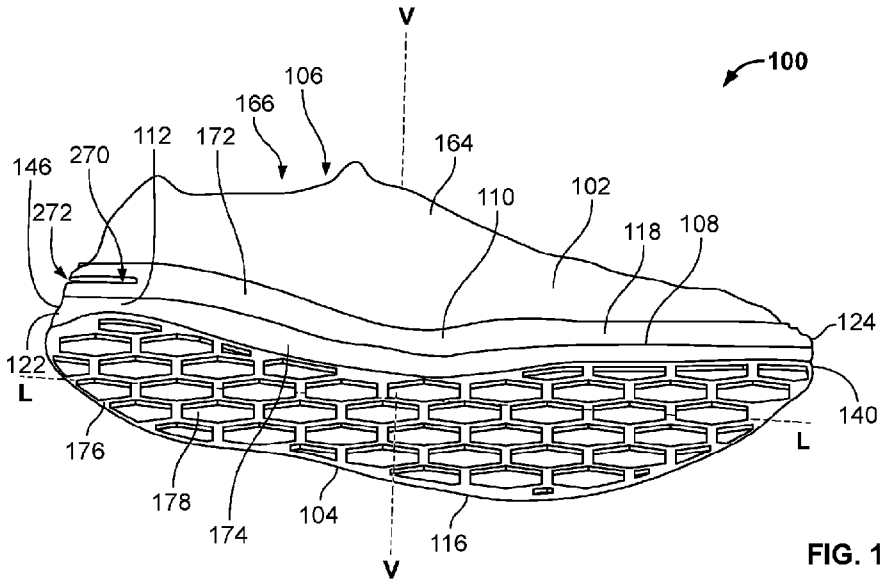

FIG. 1

(57) Abstract: An article of footwear that has an upper attached to a sole structure. The sole structure includes a midsole that is positioned between an insole and an outsole. The article of footwear also includes a plate that is removably received within a cavity formed within the midsole. The insole is configured to cover the plate within the cavity. The plate includes a reinforcing member that comprises carbon fiber.

WO 2024/069372 A4

[Continued on next page]

WO 2024/069372 A4

Date of publication of the amended claims and statement:
10 May 2024 (10.05.2024)

AMENDED CLAIMS
received by the International Bureau on 22 March 2024 (22.03.2024)

We claim:

1. An article of footwear, comprising:

an upper attached to a sole structure, wherein the sole structure includes a midsole that is positioned between an insole and an outsole; and

a plate that is removably received within a cavity formed within the midsole, wherein the insole is configured to cover the plate within the cavity, wherein a slot is formed in a side of the midsole and configured for insertion and removal of the plate through the sole structure, and wherein the plate includes a reinforcing member comprising carbon fiber.

2. The article of footwear of claim 1, wherein the slot is in communication with the cavity.

3. The article of footwear of claim 2, wherein the slot is positioned in a heel region of the article of footwear.

4. The article of footwear of claim 2, wherein the slot is positioned in a forefoot region of the article of footwear.

5. The article of footwear of claim 1, wherein the cavity comprises a cavity wall, and

wherein a plurality of fingers extend from the cavity wall and into the cavity.

6. The article of footwear of claim 5, wherein the plurality of fingers are configured to engage a portion of the plate disposed within the cavity.

7. An article of footwear, comprising:

an upper attached to a sole structure; and

a plate that extends from a heel region to a forefoot region of the article of footwear, wherein the plate is configured to be removably received within a cavity formed within the sole structure, wherein an insole is configured to cover the plate within the cavity, and wherein a slot is in communication with the cavity and configured for insertion and removal of the plate through a toe end of the sole structure.

8. The article of footwear of claim 7, wherein the slot extends within the heel region of the article of footwear.

9. The article of footwear of claim 8, wherein the slot extends along a lateral side or a medial side of the article of footwear.

10. The article of footwear of claim 7, wherein the article of footwear further comprises a flap.

11. (Original) The article of footwear of claim 10, wherein the flap comprises a notch on an interior surface of the flap.

12. The article of footwear of claim 11, wherein the flap is configured to receive a portion of the plate within the notch in a closed state.

13. The article of footwear of claim 10, wherein the flap is integral with the sole structure.

14. A system for an article of footwear, comprising:

an upper attached to a sole structure, wherein a cavity is formed within the sole structure and positioned between an insole and an outsole of the article of footwear;

a first plate having a first indicator and a first stiffness value, wherein the first indicator is configured to indicate the first stiffness value; and

a second plate having a second indicator and a second stiffness value, wherein the second indicator is configured to indicate the second stiffness value,

wherein the first plate and the second plate are configured to be interchangeably received within the cavity of the article of footwear.

15. The system for the article of footwear of claim 14, wherein the first plate and the second plate are configured to be interchangeably received within the cavity of the article of footwear via a slot, and

wherein the slot is positioned in a heel region of the article of footwear.

16. The system for the article of footwear of claim 14, wherein the first indicator or the second indicator indicates a depleted condition.

17. The system for the article of footwear of claim 14, wherein the article of footwear comprises one or more markings that are machine-readable identifiers.

18. The system for the article of footwear of claim 17, wherein the one or more markings connect a user to a digital platform when scanned by a user device.

19. The system for the article of footwear of claim 14, wherein the first indicator or the second indicator is a machine-readable identifier.

20. The system for the article of footwear of claim 19, wherein the first indicator or the second indicator connect a user to a digital platform when scanned by a user device.

21. A method of using a modular plate system, comprising:

providing an article of footwear having an upper attached to a sole structure, wherein a cavity is formed within the sole structure of the article of footwear and positioned between an insole and an outsole of the article of footwear;

providing a first plate having a first indicator;

providing a second plate having a second indicator;

positioning the first plate within the cavity of the article of footwear;

cycling the first plate until the first indicator indicates a depleted condition; and

replacing the first plate with the second plate within the cavity of the article of footwear.

22. The method of using the modular plate system of claim 21, the method of using the modular plate system further comprising:

cycling the second plate until the second indicator indicates a depleted condition; and

replacing the second plate with a third plate within the cavity of the article of footwear.

23. The method of using the modular plate system of claim 21, wherein the first indicator or the second indicator is a machine-readable identifier.

STATEMENT UNDER ARTICLE 19 (1)

In the Written Opinion of 23 January 2024, claim 1 was rejected under PCT Article 33(2) for lacking novelty over D1 (US 2022/104584 A1), and claims 1-4 were rejected under PCT Article 33(3) for lacking an inventive step over D1 and D2 (EP 1854370 A1). However, claims 5 and 6 were indicated as being novel and inventive over D1 and D2, and further in view of Category X reference D3 (US 2018055143 A1) and Category A reference D4 (US 2021052037 A1). No opinion was provided with regard to novelty, inventive step, and industrial applicability of claims 7-23, which were indicated as allegedly lacking unity of invention and, thus, were not searched in the International Search Report of 23 January 2024.

Applicant notes that none of D1-D4 teach or suggest a slot formed in a side of the midsole and configured for insertion and removal of the plate through the sole structure, as recited in amended claim 1. Claim 2 has been amended solely for antecedent reference to the sole based on the amendment to claim 1. Therefore, none of the cited references, alone or in combination, teach or suggest each and every element of amended independent claim 1, and claims 2-6 dependent thereon.