

(19)



(11)

EP 2 814 351 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:
29.05.2019 Bulletin 2019/22

(51) Int Cl.:
A43B 7/26 (2006.01) A43B 7/06 (2006.01)

(21) Application number: **12847936.7**

(86) International application number:
PCT/US2012/035799

(22) Date of filing: **30.04.2012**

(87) International publication number:
WO 2013/070276 (16.05.2013 Gazette 2013/20)

(54) **THREE TOED FOOTWEAR**

SCHUHWERK MIT DREI ZEHEN

CHAUSSURE À TROIS BOUTS

(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

(72) Inventor: **CHENCINER, John M. Sanibel, FL 33957 (US)**

(30) Priority: **13.02.2012 US 201213372414**

(74) Representative: **Kador & Partner PartG mbB Corneliusstraße 15 80469 München (DE)**

(43) Date of publication of application:
24.12.2014 Bulletin 2014/52

(56) References cited:
WO-A1-2005/074737 US-A1- 2003 172 555
US-A1- 2005 166 427 US-A1- 2008 263 893
US-A1- 2011 005 105 US-A1- 2011 005 105
US-B2- 7 805 860 US-B2- 7 805 860
US-S- D 639 535

(73) Proprietor: **Surf 9, LLC Fort Myers, FL 33908 (US)**

EP 2 814 351 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

I. TECHNICAL FIELD

[0001] An article of footwear having an upper secured to an outsole in combination having three toe pockets, the first toe pocket having a configuration to separately receive within a big toe of a wearer, and the second toe pocket having a configuration to separately receive within a second toe of the wearer, and the third toe pocket having a configuration to receive within the remaining third toe, fourth toe and fifth toe of the wearer.

II. BACKGROUND

[0002] Typically, footwear having an upper and an outsole in combination providing a toe cap having a structure which receives the five toes of the foot as a group. However, footwear having a toe cap has the disadvantage of requiring all five toes of the foot to move as a group within the footwear even though the big toe is anatomically structured to move independent of the four other toes. This disadvantage has been addressed by a variety of different forms of footwear.

[0003] As a first illustrative example, footwear having five toe pockets each having a configuration to correspondingly receive one each of five toes allows independent articulation of each toe within a corresponding toe pocket as described in United States Patent No. 7,805,860. However, footwear having five toe pockets may have the disadvantage of forcing the toes to move independently of each other, even though the four most lateral toes of the human foot share common musculature and tendons and generally move together as one group.

[0004] As a second illustrative example, footwear having four toe pockets with the most medial three toe pockets correspondingly structured to receive one each of the big toe and the adjacent two toes and the most lateral of the four toe pockets structured to receive the most lateral two toes of the human as one group is shown in United States Design Patent No. D639,535; however, this structure may not advantage movement of the three most lateral toes of the human foot as one group consistent with the shared musculature and tendons.

[0005] As a third illustrative example, footwear having two toe pockets with the most medial first toe pocket correspondingly structured to be received the big toe and the second toe pocket correspondingly structured to receive the remaining four toes of the human foot as group is shown by United States Patent 7,971,374. However, the four toes of the human foot located within one toe pocket may be disadvantaged by a loss of prehensility, or loss of grasp between the big toe and the second toe.

[0006] Additionally, document WO 2005/074737 A1 discloses an article of footwear (10) for sand sports that includes an outsole (24) and an upper (22) secured to the outsole. The upper has a first toe pocket (32) config-

ured to receive a big toe of a user and a second toe pocket (34) configured to receive at least some of the remaining toes of the user. A wrap extends (38) around a midfoot portion of the outsole and the upper, and around a heel portion of the upper. A plurality of cleats (60) may be secured to a lower surface of the outsole.

[0007] Furthermore, document US 2011/005105 A1 relates to five toe shoes for protecting feet while working or taking part in leisure activities on land or water and in the mountains. In particular, a five toe shoe comprises: an upper which is made out of a moisture-permeable fiber material and has a toe area to encase each toe separately according to the shape; an insole which is made out of a porous material; a midsole which is placed underneath the insole and has a metal mesh to allow water in the shoe to exit therethrough; and an outsole which has a drain formed in coincidence with the metal mesh of the midsole and a toe area for each toe separately according to the shape, being connected to the toe area of the upper in a one-to-one correspondence therewith. Thus, five toe shoes may contribute greatly to foot health of wearers by improving breathability as water from the inside of the shoes drains naturally by gravity via the insole, midsole and outsole and evaporates quickly through the upper at the same time, and offer more convenience in activities with the toe area encasing each toe separately according to the shape.

[0008] Accordingly, there would be an advantage in footwear structured to allow independent articulation of the big toe and the adjacent second toe while maintaining common movement among the remaining three toes.

III. DISCLOSURE OF THE INVENTION

[0009] The invention relates to an article of footwear as specified in appended independent claim 1. Preferred embodiments of the invention are disclosed in the dependent claims.

IV. BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

Figure 1 is a top front perspective view of a particular embodiment of the inventive three toe pocket shoe having inserted within the foot of a wearer (shown in broken line) showing that the first toe inserts into a first toe pocket, the second toe inserts into a second toe pocket, and the third toe, fourth toe and fifth toe all insert into a third pocket.

Figure 2 is a top view a particular embodiment of the inventive three toe pocket shoe having inserted within the foot of a wearer (shown in broken line) showing that the first toe inserts into a first toe pocket, the second toe inserts into a second toe pocket, and the third toe, fourth toe and fifth toe all insert into a third pocket.

Figure 3 is a top view of a particular embodiment of the inventive three toe pocket shoe having a portion of the vamp or upper part removed to show the drainage system which provides apertures that fluidly couple the internal surface of the insole with the external surface of the outsole to allow passage of fluid from inside the shoe to outside the shoe.

Figure 4 is a bottom view of a particular embodiment of the inventive three toe pocket shoe which shows the external surface of the outsole and apertures that fluidly couple the external surface of the outsole to the internal surface of the insole to allow passage of fluid from inside the shoe to outside the shoe.

Figure 5 is an enlarged view of cross section 5-5 shown in Figure 3.

V. MODE(S) FOR CARRYING OUT THE INVENTION

[0011] Generally, an article of footwear (1) as shown in Figures 1 through 5 having an upper (2) secured to an outsole (3), which in combination, defines three general portions of the footwear (1): a forefoot portion (4) configured to receive inside the forefoot (5) of the human foot (6), a midfoot portion (7) configured to receive inside the portion of the human foot (6) between the forefoot (5) and the heel (11) of the human foot (6), and a heel portion (8) configured to receive the heel (11) of the human foot (6) (as shown in the example of Figure 2) (for clarity leader lines indicating a part of the human foot (6) are shown in broken line). The footwear (1) has a medial side (9) (the inner side) and a lateral side (10) (or outer side). The portions (4)(7)(8) are not intended to demarcate precise areas of the footwear (1), but are intended to represent general areas of the footwear (1) that provide reference for the following description. The footwear (1) as shown in Figure 1 is disposed substantially horizontally with the lateral side (10) in the foreground, as it would be positioned on a horizontal support surface (not shown) when worn by a wearer (81). However, it is to be appreciated that the footwear (1) need not be limited to such an orientation. The human foot (6) is shown in Figure 1 and Figure 2 by broken line inside of the footwear (1) and parts thereof identified by the use of numerical indicators at the end of leader lines rendered in broken line.

[0012] Now referring primarily to Figures 1 and 2, the footwear (1) includes an upper (2). The upper (2) refers to the part or parts of the footwear (1) that cover the toes (12), the top of the foot (13), the sides of the foot (14), and the back of the heel (15). Depending on the embodiment of the footwear (1) the upper (2) can be cut from a single piece, or a plurality of pieces of material. The heel portion (8) of the upper (2) terminates in a top line (16) which can surround the ankle (17) of the (81) (as shown in the example of Figure 1) or may extend further up the leg (18) of the wearer (81) depending upon the embodiment. A collar (19) can be joined to the top line (16) of

the upper (2). The collar (19) can be made of a stretchable material which conforms to the wearer's (81) foot (6), ankle (17) or leg (18). As to other embodiments, the collar (19) can be releasably adjustable to allow the amount of open area (20) defined by the periphery of the collar (19) (as shown in the example of Figure 2) to be altered or adjusted by the wearer (81). As shown by the examples of Figures 1 and 2, the collar (19) can have a passage (21) configured to receive a cord (22) or drawstring. The drawstring (22) can have adjustable length such that amount of open area (20) defined by the collar (19) can be selected by the wearer (81) by adjusting and fixing the length of the drawstring (22). The length of the drawstring (22) can be fixed by a drawstring fastener (23) which can take any of a wide variety of forms including for example, tied ends of the drawstring (22), or a sliding spring loaded cord clamp (24) (as shown in the examples of Figures 1 and 2).

[0013] Now referring primarily to Figures 1, 2, and 4, the upper (2) can be secured by the periphery to an outsole (3). The outsole (3) (or sole) refers to the part of the footwear (1) that comes into contact with the support surface during normal use. The outsole (3) can be made from one piece from a plurality of pieces. As to certain embodiments the heel portion (8) of outsole (3) may be made of a different material than the midfoot portion (7) or forefoot portion (5). The outsole (3) can be secured to the upper (2) by an adhesive, stitching, or other suitable securement means. The outsole (3) can be made from natural materials such as leather or natural rubber, or from synthetic materials such as styrene butadiene rubber, nitrile-butdiene rubber, polyvinyl chloride, polyurethane, neoprene, polyether, polyester, or the like, or combinations thereof, whether as a solid material or as a foam, thermofoam, closed cell foam, or layers or combinations thereof.

[0014] Now referring primarily to Figure 4, a raised tread pattern (25) demarcated by tread grooves (26) can extend over substantially the whole of the bottom of the outsole (3). While the invention is not limited to any particular raised tread pattern (25) and particular embodiments may be without any raised tread pattern (25), the raised tread pattern (25) can take the form of a crosshatch (27) (as shown in the example of Figure 4). The outsole (3) can further provide one or more flex groove(s) (28) which can extend partially across or extend substantially across the entire width of the outsole (3) between the medial side (9) and lateral side (10) of the footwear (1). As shown by the example of Figure 4, the flex groove (28) can be generally aligned with the joint line (29) of the medial metatarsal phalanges of the foot (6) (as shown in the example of Figure 1) to enhance flexibility of the outsole (3) at a location which aids in natural foot motion.

[0015] Again referring primarily to Figures 1 and 2, the upper (1) secured to the outsole (3) in combination can have three toe pockets (29)(30)(31). The first toe pocket (29) has a configuration to separately receive inside a first toe (32) of the wearer (81). The first toe (32) being

the most medial toe of the foot (6) (also referred to as the "big toe" or "hallux"). The second toe pocket (30) has a configuration to separately receive inside a second toe (33) of the wearer (81). The second toe (33) being the located next to the first toe (32) (also referred to as the "long toe"). The third toe pocket (31) has a configuration to receive inside the remaining third toe (34), fourth toe (35) and fifth toe (36) (also referred to as the "little toe" and being most distal from the first toe (32)).

[0016] There can be an advantage in providing three toe pockets (29)(30)(31) as above-described. First, the big toe (31) is primarily flexed by the flexor hallucis longus muscle, located in the deep posterior of the lower leg (18), via the flexor hallucis longus tendon. Additional flexion control is provided by the flexor hallucis brevis. It is extended by the abductor hallucis muscle and the adductor hallucis muscle. The big toe (31) can be moved independently of the remaining or other toes (33)(34)(35)(36). Therefore, a separate first toe pocket (29) allows the first toe (32) (the "big toe") to be separately received within the footwear (1) to maintain movement in a toe which naturally moves independently of the other toes (33)(34)(35)(36). As to the second toe (33), third toe (34), fourth toe (35) and fifth toe (36) the flexor digitorum brevis muscle and the extensor digitorum brevis muscle and the flexor tendons are shared, making these toes (33)(34)(35)(36) generally move as one unit. However, some prehensibility, or grasping capability, in these toes still exists. Second, providing a separate second toe pocket (30) allows the second toe (33) to be separately received with in the footwear (1) to allow use of prehensibility of the second toe (33) in conjunction with the opposed movement of the first toe (32) separate of the remaining three toes (34)(35)(36). Third, providing a separate third toe pocket (31) allows the third toe (34), fourth toe (35) and fifth toe (26) to be received as a group within one toe pocket to facilitate the movement of these toes (34)(35)(36) as a group inside of the footwear (1), consistent with sharing of the musculature and tendons, as above-described, which is lacking in footwear having individual toe pockets for each toe or may be disadvantaged by footwear having four toe pockets.

[0017] Again referring primarily to Figures 1 and 2, as to particular embodiments, the upper (2) of at least one of the three toe pockets (29)(30)(31) can include a toe top portion (37)(38)(39) in combination with a toe side portion (40)(41)(42). As to these embodiments, the toe side portions (40)(41)(42) can be secured to the outsole (3) and extend upwardly to correspondingly connect to the toe top portions (37)(38)(39). Now referring to the example provided by Figure 1, the first toe pocket (29) can have a first toe top portion (37) configured to generally overlay the top (43) of the first toe (32) received inside of the first toe pocket (29) and a first toe side portion (40) which surrounds the medial side (44), front side (45) and lateral side (46) of the first toe pocket (29). Similarly, the second toe pocket (30) can have a second top toe portion (38) of the upper (2) which generally overlays the top (47)

of the second toe (33) received inside of the second toe pocket (30) and a corresponding second toe side portion (41) that surrounds the medial side (48), front side (49) and lateral side (50) of the second toe pocket (30). Again, similarly, the third toe pocket (31) can have a third top toe portion (51) of the upper (2) which generally overlays the top (52) of the third toe (34), fourth toe (35), and fifth toe (36) received inside of the third toe pocket (31) and a corresponding third toe side portion (42) that surrounds the medial side (53), front side (54) and lateral side (55) of the third toe pocket (31).

[0018] Providing one or more of the tree toe pockets (29)(30)(31) having the form of a toe top portion (37)(38)(39) and toe side portion (40)(41)(42) provides certain advantages. First, the outsole (3) does not need to extend substantially upward and does not need to overlay any one of the toes (32)(33)(34)(35)(36). The outsole (3) can extend upward at the front well below or reside at about the midline of each of the toes (32)(33)(34)(35)(36) with the toe side portions (40)(41)(42) of the upper (2) extending upward to join the corresponding toe top portions (37)(38)(39). This structure allows each of toes (32)(33)(34)(35)(36) to move forward in the footwear (11) without the toe end (56) being forcibly urged against the inside of the outsole (3). Rather, the corresponding side toe portion (40)(41)(42) when made from a flexible textile material can stretchably engage one or more toe ends (56) reducing force applied to the toe end (56) without substantial loss of force of the toe downwardly against the outsole (3). This structure can avoid or reduce injury to the toe end(s) (56) or the corresponding toe nail(s) (57).

[0019] Again referring primarily to Figures 1 and 2, one or more of the three toe pockets (29)(30)(31) can further include one or more flex elements (58) disposed in the flexible textile material of one or more of the top toe portions (37)(38)(39) of the upper (2) which can extend partially across or extend substantially across the entire width of the top toe portion (37)(38)(39) between the medial side and lateral side of the each corresponding toe pockets (29)(30)(31). The one or more flex elements (58) allows the top toe portion (37)(38)(39) of the upper (2) to flex more readily upon flexure of the outsole (3).

[0020] Again referring primarily to Figures 1 and 2, embodiments of the footwear (1) can further include a releasably securable strap (59) extending over the upper (2), a first end (60) of the strap (59) being secured to a medial side (9) of the upper (2) and a second end (61) of the strap (59) releasably secures to a lateral side (10) of the upper (2). Releasable securement of the strap (59) can be in the form of mated halves of a strap fastener (62) whether mechanical or by the matable surfaces of a hook material (63) with a loop material (64) (as shown in the example of Figure 1). As to other embodiments, the releasably secured strap (59) can include a first portion (65) having a first end (66) and a second end (67) with the first end (66) secured to the medial side (9) of the upper (2). A ring (68) (whether elongate as shown in

the example of Figure 2 or other configuration such as a d-ring or circular ring) can be coupled to the second end (67) of said first portion (65). A second portion (69) can have a medial portion (70) disposed between a first end (71) and a second end (72) with the first end (71) being secured to the lateral side (10) of the upper (2). The second portion (69) can extend through the ring (68) and the second end (72) can releasably secured to the medial portion (70) of the second portion (69). Understandably, other forms of a releasably securable strap (59) can be utilized with embodiments of the footwear (11).

[0021] Now referring primarily to Figures 3, 4 and 5, the footwear (1) includes an insole (73) secured to the outsole (3) in combination having at least one aperture (74) which fluidly communicates between inside of said footwear (1) and the outside of the footwear (11). As shown in Figures 3 and 4, the at least one aperture (74) can be a plurality of apertures (74) generally located in the midfoot portion (7) of the footwear (1). While the invention is not so limited, one or more or all of the plurality of apertures (74) can generally be in the form of a parallelogram (75), each parallelogram (75) having a first pair of opposed angles (76) and a second pair of opposed angles (77), the first pair of opposed angles (76) of lesser degree angle (78) than said second pair of opposed angles (77). A mesh material (79) is disposed between the outsole (3) and said insole (73). The mesh material (79) has mesh openings (80) sufficient in area to allow an amount of fluid to pass through one or more of the plurality of apertures (74), but can be sufficiently small in area to exclude the passage of granulated material, such as gravel or sand. As to particular embodiments, the mesh openings (80) can be generally square form having a sieve size in a range of between about 0.5 millimeters and about 1.0 millimeters. The term "fluid" means any substance whether solid or gas flowable through one or more of the apertures. For example, the term "fluid" encompasses, without limitation to the broad scope of the definition: atmospheric gases, water, particles sufficiently fine to pass through the mesh openings (80).

[0022] Now referring primarily to Figures 1 and 2, which show a method of using embodiments of the inventive footwear (1), a wearer (81) can insert a foot (6) inside of an upper (2) secured to an outsole (3), in combination having three toe pockets (29)(30)(31). The wearer (81) can locate a first toe (32) separately in the first toe pocket (29) and locate the second toe (33) separately in a second toe pocket (30). The wearer (81) can locate the remaining three toes (34)(35)(36) (third toe, fourth toe and fifth toe) in the third toe pocket (31). As to particular embodiments, at least one of the three toe pockets (29)(30)(31) can have the upper (2) including a top toe portion (37)(38)(39) and a corresponding side toe portion (40)(41)(42) and the wearer (11) can locate the toes (32)(33)(34)(35)(36) in the corresponding one of the three toe pockets (29)(30)(31) such that the corresponding top toe portions (37)(38)(39) generally overlay a top (43)(47) of each toe (12) and the toe side portions

(40)(42)(43) generally surrounds the toe (12) or toes received inside of toe pocket (29)(30)(31).

[0023] As to certain embodiments the footwear (1) can be secured about the wearer's (81) foot (6). For example, the wearer (81) can releasably secure a strap (59) extending over the upper (2). The first end (60) of the strap (59) being secured to a medial side (9) of the upper (2) and the second end (61) of the strap (59) being releasably secured by the wearer (11) to a lateral side (10) of the upper (2) by a strap fastener (62). As to certain embodiments, the wearer (11) can engage the matable portions of a loop material (64) coupled to the lateral side (10) of the upper (2) to a hook material (63) coupled proximate the second end (67) of the strap (59); however, it is appreciated that the strap fastener (62) can take many different forms.

[0024] As to other embodiments, the wearer (81) can releasably secure an embodiment of the strap (59) which includes a first portion (65) secured by a first end (66) to the medial side (9) of the footwear (1). The ring (68) as above described can be secured to second end (67) of the first portion (65). A second portion (69) having a medial portion (70) disposed between a first end (71) and a second end (72) can have the first end (71) secured to the lateral side (10) of the upper (2). The wearer (11) can pass the second end (72) through the ring (68) and releasably secure the second end (72) to the medial portion (70) of said second portion (69) by mated engagement of the parts of the strap fastener (62), which as to certain embodiments can be mated hook an loop materials (63)(64).

[0025] As to other embodiments, the wearer (81) locate the collar (19) coupled to the top line (16) of the upper (3) to surround the leg (18), which as to certain embodiments can be below the ankle (17), at the ankle (17) or above the ankle (17). As to those embodiments of the collar (19) which are elastically stretchable, the collar (19) can elastically engage the portion of the leg (18) and re-conform to the leg (18) as it moves. As to other embodiments, as shown in the example of Figure 1, the wearer (11) can adjust the amount of open area (20) defined by the collar (19) joined to the top line (16) of the upper (2) by adjusting the length of a drawstring (22) located inside of a passage (21) within the collar (19).

[0026] The method of using the footwear (1) can further include transfer of an amount of fluid from inside the footwear (1) to outside of the footwear (1) through at least one aperture (74) fluidly communicating between surfaces of the insole (73) secured in combination to the outsole (3).

[0027] As can be easily understood from the foregoing, the basic concepts of the present invention may be embodied in a variety of ways. The invention involves numerous and varied embodiments of an inventive article of footwear.

[0028] As such, the particular embodiments or elements of the invention disclosed by the description or shown in the figures or tables accompanying this appli-

cation are not intended to be limiting, but rather exemplary of the numerous and varied embodiments generically encompassed by the invention or equivalents encompassed with respect to any particular element thereof. In addition, the specific description of a single embodiment or element of the invention may not explicitly describe all embodiments or elements possible; many alternatives are implicitly disclosed by the description and figures.

[0029] It should be understood that each element of an apparatus or each step of a method may be described by an apparatus term or method term. Such terms can be substituted where desired to make explicit the implicitly broad coverage to which this invention is entitled. As but one example, it should be understood that all steps of a method may be disclosed as an action, a means for taking that action, or as an element which causes that action. Similarly, each element of an apparatus may be disclosed as the physical element or the action which that physical element facilitates. As but one example, the disclosure of a "flex element" should be understood to encompass disclosure of the act of "flexing" -- whether explicitly discussed or not -- and, conversely, were there effectively disclosure of the act of "flexing", such a disclosure should be understood to encompass disclosure of a "flex element" and even a "means for flexing." Such alternative terms for each element or step are to be understood to be explicitly included in the description.

[0030] All numeric values herein are assumed to be modified by the term "about", whether or not explicitly indicated. For the purposes of the present invention, ranges may be expressed as from "about" one particular value to "about" another particular value. When such a range is expressed, another embodiment includes from the one particular value to the other particular value. The recitation of numerical ranges by endpoints includes all the numeric values subsumed within that range. A numerical range of one to five includes for example the numeric values 1, 1.5, 2, 2.75, 3, 3.80, 4, 5, and so forth. It will be further understood that the endpoints of each of the ranges are significant both in relation to the other endpoint, and independently of the other endpoint. When a value is expressed as an approximation by use of the antecedent "about," it will be understood that the particular value forms another embodiment. The term "about" generally refers to a range of numeric values that one of skill in the art would consider equivalent to the recited numeric value or having the same function or result. Similarly, the antecedent "substantially" means largely, but not wholly, the same form, manner or degree and the particular element will have a range of configurations as a person of ordinary skill in the art would consider as having the same function or result. When a particular element is expressed as an approximation by use of the antecedent "substantially," it will be understood that the particular element forms another embodiment.

[0031] Moreover, for the purposes of the present invention, the term "a" or "an" entity refers to one or more

of that entity unless otherwise limited. As such, the terms "a" or "an", "one or more" and "at least one" can be used interchangeably herein.

5

Claims

1. An article of footwear (1), comprising an upper secured to an outsole (3) in combination having three toe pockets (29)(30)(31), wherein a first toe pocket (29) has a configuration to separately receive within a big toe (32) of a wearer (81), and wherein a second toe pocket (30) has a configuration to separately receive within a second toe (33) of said wearer (81), and wherein a third toe pocket (31) has a configuration to receive within the remaining third toe (34), fourth toe (35) and fifth toe (36) of said wearer (81); an insole (73) secured to said outsole (3) in combination having at least one aperture (74) which fluidly communicates between inside of and outside of said article of footwear (1); and a mesh material (79) disposed between said outsole (3) and said insole (73), said mesh material (79) having mesh openings (80) sufficient in area to allow an amount of fluid to pass through said at least one aperture (74).
2. The article of footwear (1) of claim 1, wherein said upper (2) of at least one of said three toe pockets (29)(30)(31) includes a toe top portion (37)(38)(39) and a toe side portion (40)(41)(42), said toe side portion (40)(41)(42) secured to said outsole (3) and extending upwardly to connect to said toe top portion (37)(38)(39).
3. The article of footwear (1) of claim 2, wherein said toe side portion (40)(41)(42) extends upwardly from said outsole (3) about the medial side (44)(48)(53), front side (45)(49)(54) and lateral side (46)(50)(55) of said at least one of said three toe pockets (29)(30)(31).
4. The article of footwear (1) of claim 2, wherein said toe side portion (40)(41)(42) extends upwardly from said outsole (3) about the medial side (44)(48)(53), front side (45)(49)(54) and lateral side (46)(50)(55) of at least two of said three toe pockets (29)(30)(31).
5. The article of footwear (1) of claim 2, wherein said toe side portion (40)(41)(42) extends upwardly from said outsole (3) about the medial side (44)(48)(53), front side (45)(49)(54) and lateral side (46)(50)(55) of each of said three toe pockets (29)(30)(31).
6. The article of footwear (1) of claim 2, wherein said toe top portion (37)(38)(39) and said toe side portion (40)(41)(42) comprise a flexible textile material.

7. The article of footwear (1) of claim 6, wherein said flexible textile material of said top toe portion (37)(38)(39) further comprises one or more flex elements (58) along which said flexible textile flexes upon flexure of said outsole (3).
8. The article of footwear (1) of claim 1, further comprising a releasable strap (59) extending over the upper (2), a first end (60) of said strap (59) being secured to a medial side (9) of said upper (2) and a second end (61) of the strap (59) releasably secures to a lateral side (10) of said upper 2).
9. The article of footwear (1) of claim 1, wherein said releasable strap (59) comprises:
- a first portion (65) having a first end (66) and a second end (67), said first end (66) secured to a medial side (9) of said upper (2);
 - a ring (68) coupled to said second end (67) of said first portion (65); and
 - a second portion (69) having a medial portion (70) disposed between a first end (71) and a second end (72), said first end (71) being secured to said lateral side (10) of said upper (2), said second portion (69) extending through the ring (68) and said second end (72) releasably securable to said medial portion (70) of said second portion (69).
10. The article of footwear (1) of claim 1, further comprising a collar (19) joined to a top line (16) of said upper (2), said collar (19) releasably adjustable to alter an amount of open area (20) defined by said collar (19).
11. The article of footwear (1) of claim 10, wherein said collar (19) has a passage (21) configured to receive a drawstring (22), said drawstring (22) having adjustable length to alter said amount of open area (20) defined by said collar (19).
12. The article of footwear (1) of claim 1, wherein said at least one aperture (74) comprises a plurality of apertures (74).
13. The article of footwear (1) of claim 12, wherein said plurality of apertures (74) have a location generally within the instep of said outsole (3).
14. The article of footwear (1) of claim 13, wherein said mesh openings (80) have a generally square form having a sieve size in a range of between about 0.5 millimeters and about 1.0 millimeters.
15. The article of footwear (1) of claim 14, wherein said plurality of apertures (74) each generally have the form of a parallelogram (75), each parallelogram

having a first pair of opposed angles (76) and a second pair of opposed angles (77), said first pair of opposed angles (76) of lesser degree angle than said second pair of opposed angles (77).

5

Patentansprüche

1. Schuhwerkartikel (1), umfassend ein Obermaterial, das an einer Außensohle (3) befestigt ist, und die in Kombination drei Zehentaschen (29)(30)(31) aufweisen, wobei eine erste Zehentasche (29) eine Konfiguration aufweist, um darin getrennt einen großen Zehen (29) eines Trägers (81) aufzunehmen, und wobei eine zweite Zehentasche (30) eine Konfiguration aufweist, um darin getrennt einen zweiten Zehen (33) des Trägers (81) aufzunehmen, und wobei eine dritte Zehentasche (31) eine Konfiguration aufweist, um darin den verbleibenden dritten Zehen (34), vierten Zehen (35) und fünften Zehen (36) des Trägers (81) aufzunehmen;
- eine Innensohle (73), die an der Außensohle (3) befestigt ist, und die in Kombination mindestens eine Öffnung (74) aufweisen, die flüide zwischen der Innenseite und der Außenseite des Schuhwerkartikels (1) kommuniziert; und
- ein Netzmaterial (79), das zwischen der Außensohle (3) und der Innensohle (73) angeordnet ist, wobei das Netzmaterial (79) Netzöffnungen (80) aufweist, die von der Fläche ausreichend sind, um es einer Fluidmenge zu gestatten, durch die mindestens eine Öffnung (74) hindurchzutreten.
2. Schuhwerkartikel (1) nach Anspruch 1, wobei das Obermaterial (2) von mindestens einer der drei Zehentaschen (29)(30)(31) einen Zehenseitenteil (37)(38)(39) und einen Zehenseitenteil (40)(41)(42) umfasst, wobei der Zehenseitenteil (40)(41)(42) an der Außensohle (3) befestigt ist und sich nach oben erstreckt, um sich mit dem Zehenseitenteil (37)(38)(39) zu verbinden.
3. Schuhwerkartikel (1) nach Anspruch 2, wobei sich der Zehenseitenteil (40)(41)(42) von der Außensohle (3) um die mediale Seite (44)(48)(53), die vordere Seite (45)(49)(54) und die laterale Seite (46)(50)(55) von der mindestens einen der drei Zehentaschen (29)(30)(31) nach oben erstreckt.
4. Schuhwerkartikel (1) nach Anspruch 2, wobei sich der Zehenseitenteil (40)(41)(42) von der Außensohle (3) um die mediale Seite (44)(48)(53), die vordere Seite (45)(49)(54) und die laterale Seite (46)(50)(55) von mindestens zwei der drei Zehentaschen (29)(30)(31) nach oben erstreckt.
5. Schuhwerkartikel (1) nach Anspruch 2, wobei sich der Zehenseitenteil (40)(41)(42) von der Außensoh-

- le (3) um die mediale Seite (44)(48)(53), die vordere Seite (45)(49)(54) und die laterale Seite (46)(50)(55) von jeder der drei Zehentaschen (29)(30)(31) nach oben erstreckt.
6. Schuhwerkartikel (1) nach Anspruch 2, wobei der Zehenoberteil (37)(38)(39) und der Zehenseitenteil (40)(41)(42) ein biegsames Textilmaterial umfassen.
7. Schuhwerkartikel (1) nach Anspruch 6, wobei das biegsame Textilmaterial des Zehenoberteils (37)(38)(39) ferner eines oder mehrere Biegeelemente (58) umfasst, entlang derer sich das biegsame Textil infolge einer Biegung der Außensohle (3) verbiegt.
8. Schuhwerkartikel (1) nach Anspruch 1, ferner umfassend einen lösbaren Riemen (59), der sich über das Obermaterial (2) erstreckt, wobei ein erstes Ende (60) des Riemens (59) an einer medialen Seite (9) des Obermaterials (2) befestigt ist und ein zweites Ende (61) des Riemens (59) lösbar eine laterale Seite (10) des Obermaterials (2) befestigt.
9. Schuhwerkartikel (1) nach Anspruch 1, wobei der lösbare Riemen (59) das Folgende umfasst:
- a) einen ersten Teil (65), der ein erstes Ende (66) und ein zweites Ende (67) aufweist, wobei das erste Ende (66) an einer medialen Seite (9) des Obermaterials (2) befestigt ist;
 - b) einen Ring (68), der mit dem zweiten Ende (67) des ersten Teils (65) verbunden ist; und
 - c) einen zweiten Teil (69), der einen medialen Teil (70) aufweist, angeordnet zwischen einem ersten Ende (71) und einem zweiten Ende (72), wobei das erste Ende (71) an der lateralen Seite (10) des Obermaterials (2) befestigt ist, sich der zweite Teil (69) durch den Ring (68) erstreckt und das zweite Ende (72) an dem medialen Teil (70) des zweiten Teils (69) lösbar befestigbar ist.
10. Schuhwerkartikel (1) nach Anspruch 1, umfassend einen Kragen (19), der mit einer oberen Grenze (16) des Obermaterials (2) verbunden ist, wobei der Kragen (19) lösbar einstellbar ist, um eine offene Bereichsmenge (20), die durch den Kragen (19) definiert ist, zu verändern.
11. Schuhwerkartikel (1) nach Anspruch 10, wobei der Kragen (19) einen Durchgang (21) aufweist, der konfiguriert ist, um eine Zugschnur (22) aufzunehmen, wobei die Zugschnur (22) eine einstellbare Länge aufweist, um die offene Bereichsmenge (20), die durch den Kragen (19) definiert ist, zu verändern.
12. Schuhwerkartikel (1) nach Anspruch 1, wobei die
- mindestens eine Öffnung (74) eine Vielzahl von Öffnungen (74) umfasst.
13. Schuhwerkartikel (1) nach Anspruch 12, wobei die Vielzahl von Öffnungen (74) einen Ort aufweist, der im Allgemeinen innerhalb des Spanns der Außensohle (3) liegt.
14. Schuhwerkartikel (1) nach Anspruch 13, wobei die Netzöffnungen (80) eine im Allgemeinen viereckige Form aufweisen, die eine Siebgröße in einem Bereich zwischen etwa 0,5 Millimetern und etwa 1,0 Millimetern aufweist.
15. Schuhwerkartikel (1) nach Anspruch 14, wobei die Vielzahl von Öffnungen (74) jeweils im Allgemeinen die Form eines Parallelogramm (75) aufweist, wobei jedes Parallelogramm ein erstes Paar gegenüberliegender Winkel (76) und ein zweites Paar gegenüberliegender Winkel (77) aufweist, wobei das erste Paar gegenüberliegender Winkel (76) einen Winkel mit kleinerer Gradzahl als das zweite Paar gegenüberliegender Winkel (77) aufweist.

Revendications

1. Chaussure (1), comprenant une tige fixée sur une semelle extérieure (3) en combinaison, ayant trois sections d'orteils (29)(30)(31), dans laquelle une première section d'orteil (29) est configurée de sorte à recevoir séparément un gros orteil (32) d'une personne (81), dans laquelle une seconde section d'orteil (30) est configurée de sorte à recevoir séparément un second orteil (33) de ladite personne (81), et dans laquelle une troisième section d'orteil (31) est configurée de sorte à recevoir le troisième orteil (34), le quatrième orteil (35) et le cinquième orteil (36) restants de ladite personne (81) ;
- une semelle intérieure (73) fixée sur ladite semelle extérieure (3) en combinaison, ayant au moins une ouverture (74) qui communique de manière fluide entre l'intérieur et l'extérieur de ladite chaussure (1) ;
- et
- un matériau maillé (79) disposé entre ladite semelle extérieure (3) et ladite semelle intérieure (73), ledit matériau maillé (79) ayant des ouvertures de maillage (80) d'une surface suffisante pour permettre à une quantité de fluide de passer par ladite au moins une ouverture (74).
2. Chaussure (1) selon la revendication 1, dans laquelle ladite tige (2) d'au moins l'une desdites trois sections d'orteils (29)(30)(31) comprend une partie supérieure d'orteil (37)(38)(39) et une partie latérale d'orteil (40)(41)(42), ladite partie latérale d'orteil (40)(41)(42) étant fixée sur ladite semelle extérieure (3) et s'étendant vers le haut afin d'être reliée à ladite

partie supérieure d'orteil (37)(38)(39).

3. Chaussure (1) selon la revendication 2, dans laquelle ladite partie latérale d'orteil (40)(41)(42) s'étend vers le haut depuis ladite semelle extérieure (3) autour du côté médial (44)(48)(53), du côté avant (45)(49)(54) et du côté latéral (46)(50)(55) de ladite au moins une desdites trois sections d'orteils (29)(30)(31). 5
4. Chaussure (1) selon la revendication 2, dans laquelle ladite section latérale d'orteil (40)(41)(42) s'étend vers le haut depuis ladite semelle extérieure (3) autour du côté médial (44)(48)(53), du côté avant (45)(49)(54) et du côté latéral (46)(50)(55) d'au moins deux desdites trois sections d'orteils (29)(30)(31). 10
5. Chaussure (1) selon la revendication 2, dans laquelle ladite partie latérale d'orteil (40)(41)(42) s'étend vers le haut depuis ladite semelle extérieure (3) autour du côté médial (44)(48)(53), du côté avant (45)(49)(54) et du côté latéral (46)(50)(55) de chacune desdites trois sections d'orteils (29)(30)(31). 20
6. Chaussure (1) selon la revendication 2, dans laquelle ladite partie supérieure d'orteil (37)(38)(39) et ladite partie latérale d'orteil (40)(41)(42) comprennent un matériau textile flexible. 25
7. Chaussure (1) selon la revendication 6, dans laquelle ledit matériau textile flexible de ladite partie supérieure d'orteil (37)(38)(39) comprend en outre un ou plusieurs éléments flexibles (58) le long desquels ledit textile flexible se courbe lors de la flexion de ladite semelle extérieure (3). 30
8. Chaussure (1) selon la revendication 1, comprenant en outre une bande amovible (59) qui s'étend par-dessus la tige (2), une première extrémité (60) de ladite bande (59) étant fixée sur un côté médial (9) de ladite tige (2), et une seconde extrémité (61) de la bande (59) étant fixée de manière amovible sur un côté latéral (10) de ladite tige (2). 35
9. Chaussure (1) selon la revendication 1, dans laquelle ladite bande amovible (59) comprend : 40
- a) une première partie (65) ayant une première extrémité (66) et une seconde extrémité (67), ladite première extrémité (66) étant fixée sur un côté médial (9) de ladite tige (2) ; 50
 - b) une bague (68) reliée à ladite seconde extrémité (67) de ladite première partie (65) ; et
 - c) une seconde partie (69) ayant une partie médiale (70) disposée entre une première extrémité (71) et une seconde extrémité (72), ladite première extrémité (71) étant fixée sur ledit côté 55
- latéral (10) de ladite tige (2), ladite seconde partie (69) s'étendant dans la bague (68), et ladite seconde extrémité (72) pouvant être fixée de manière amovible sur ladite partie médiale (70) de ladite seconde partie (69).
10. Chaussure (1) selon la revendication 1, comprenant en outre un bracelet (19) joint à une ligne supérieure (16) de ladite tige (2), ledit bracelet (19) pouvant être réglé de manière amovible afin de modifier une quantité d'ouverture (20) définie par ledit bracelet (19).
11. Chaussure (1) selon la revendication 10, dans laquelle ledit bracelet (19) possède un passage (21) configuré pour recevoir un lacet (22), ledit lacet (22) ayant une longueur réglable afin de modifier ladite quantité d'ouverture (20) définie par ledit bracelet (19).
12. Chaussure (1) selon la revendication 1, dans laquelle ladite au moins une ouverture (74) comprend une pluralité d'ouvertures (74).
13. Chaussure (1) selon la revendication 12, dans laquelle ladite pluralité d'ouvertures (74) possède un emplacement généralement à l'intérieur du cou-de-pied de ladite semelle extérieure (3).
14. Chaussure (1) selon la revendication 13, dans laquelle lesdites ouvertures maillées (80) possèdent une forme généralement carrée ayant une taille de mailles comprise entre environ 0,5 millimètre et environ 1 millimètre.
15. Chaussure (1) selon la revendication 14, dans laquelle lesdites ouvertures (74) possèdent généralement la forme d'un parallélogramme (75), chaque parallélogramme ayant une première paire d'angles opposés (76) et une seconde paire d'angles opposés (77), ladite première paire d'angles opposés (76) ayant un degré inférieur à celui de ladite seconde paire d'angles opposés (77).

FIG. 2

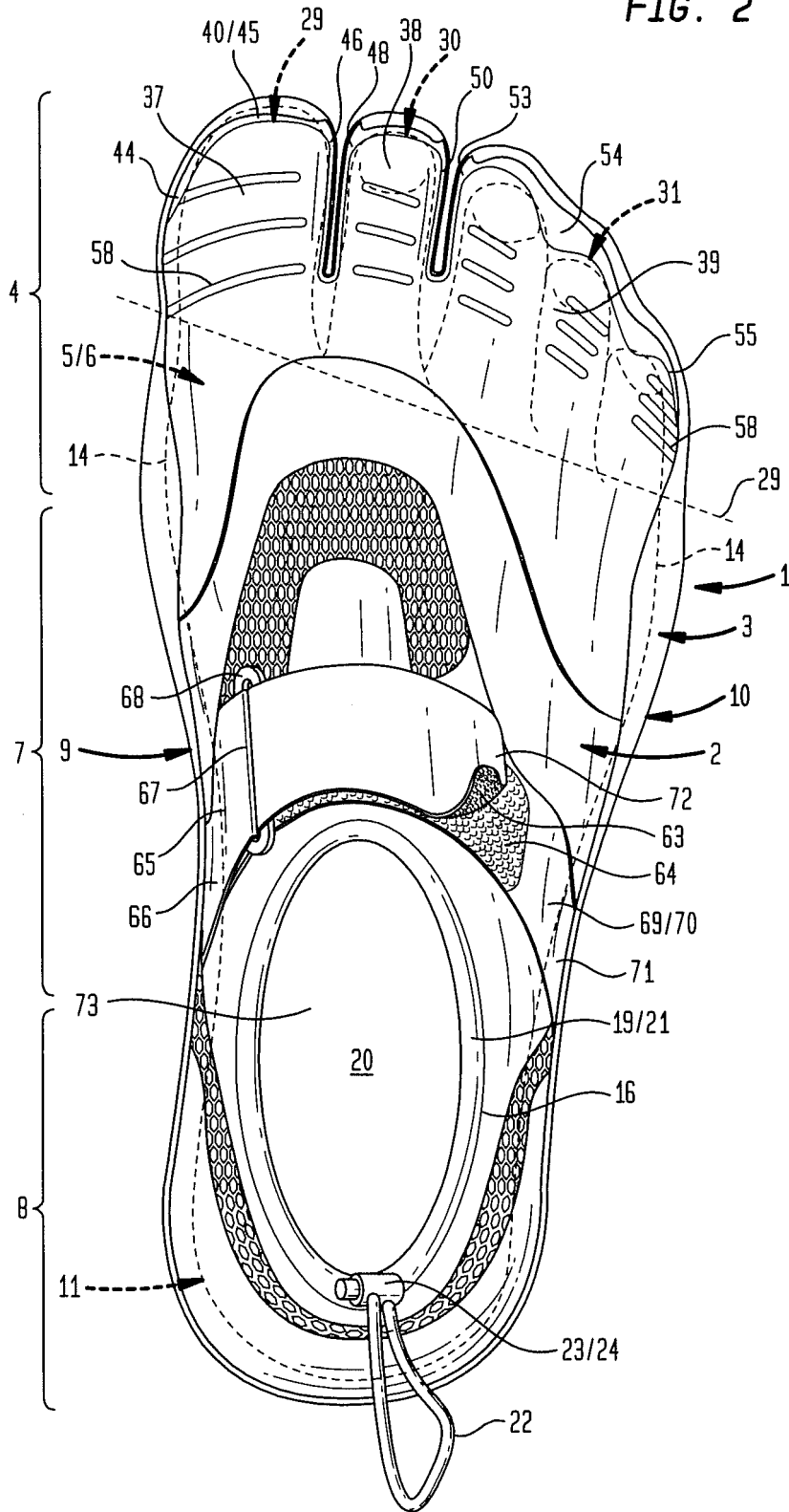
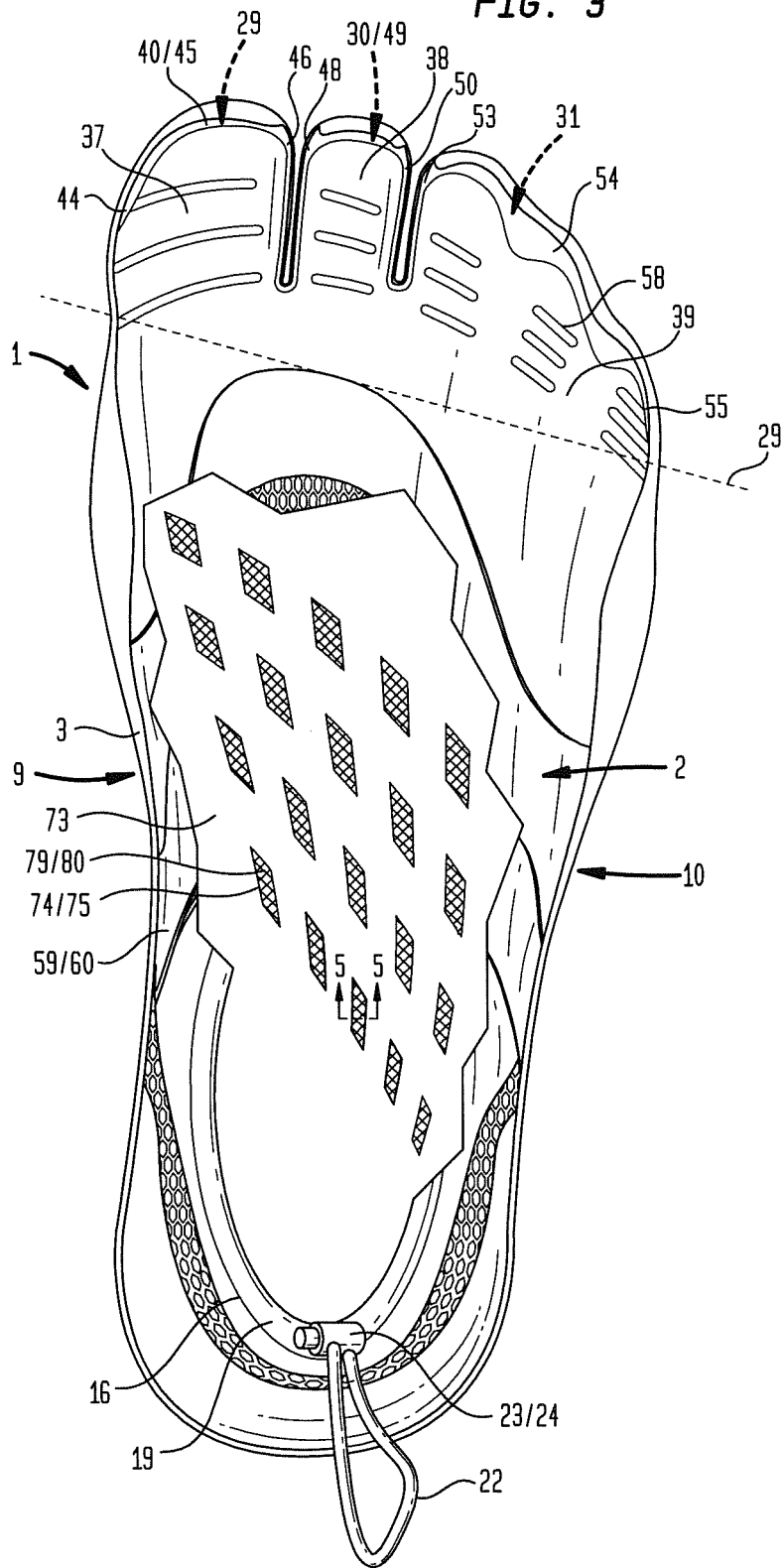


FIG. 3



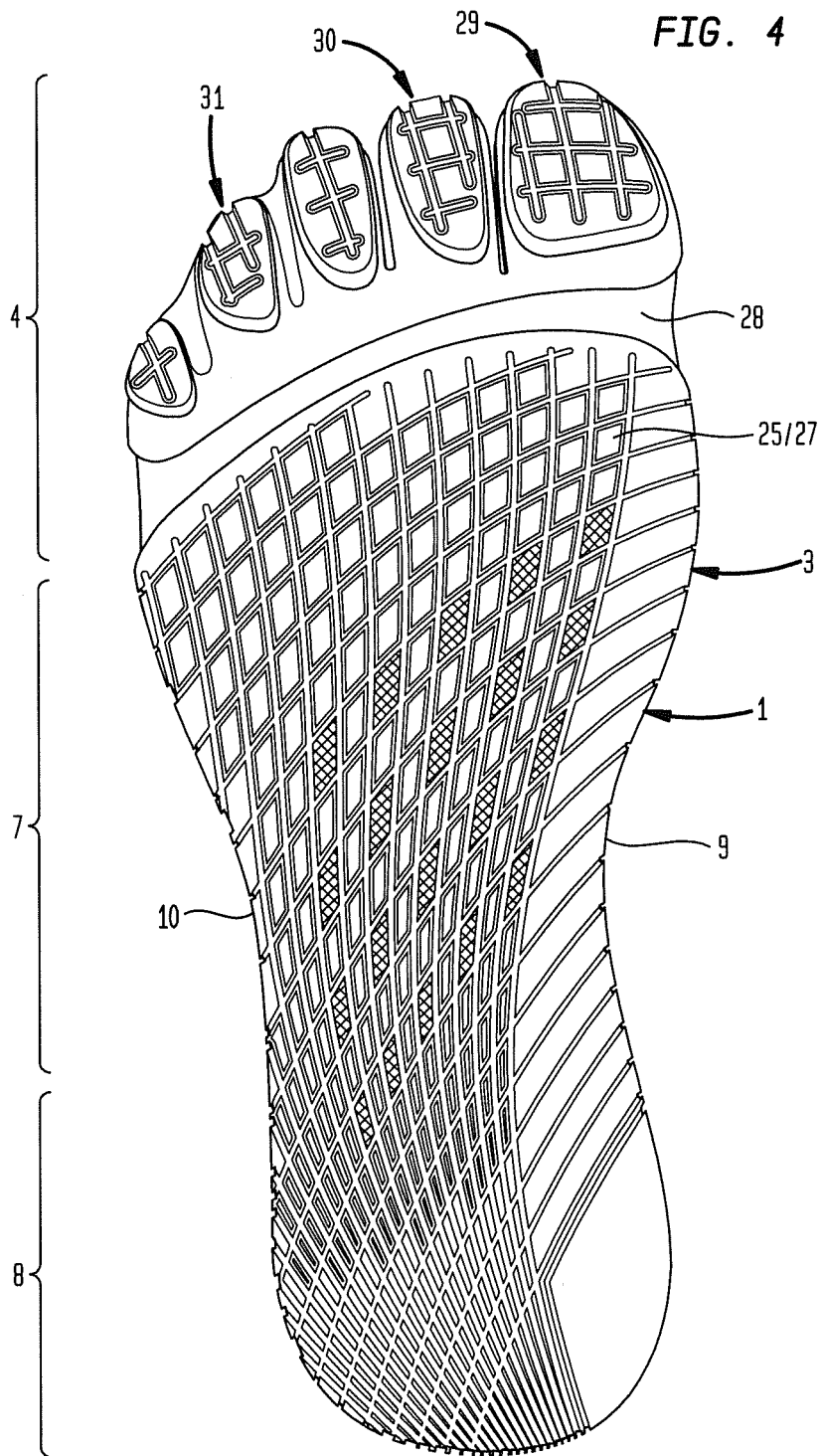
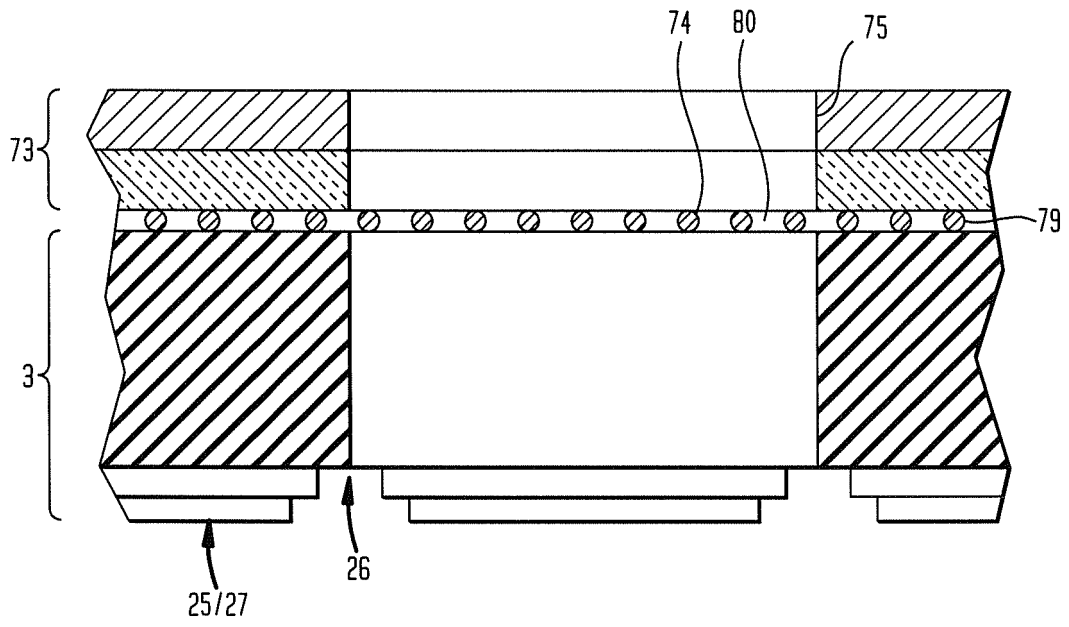


FIG. 5



REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 7805860 B [0003]
- US 639535 D [0004]
- US 7971374 B [0005]
- WO 2005074737 A1 [0006]
- US 2011005105 A1 [0007]