

ARTICLE OF FOOTWEAR WHICH INCLUDES A SOLE BODY HAVING A SUPPORT
PLATE ADAPTED TO SUPPORT A FOOT ARCH CORRECTION DEVICE

5 The invention relates to an article of footwear, more particularly to an article of footwear that is waterproof, wear-resistant, and lightweight.

10 A foot arch correction device is usually placed in shoes having a solid and thick sole that can provide a stable supporting force, such as casual shoes and leather shoes. However, casual and leather shoes are not suitable for use in wet or muddy places, such as in kitchens, bathrooms, outdoor vegetable gardens or farms, etc. Slippers are often used for such areas because they are light and waterproof, and are
15 conveniently slipped on and off. To allow an article of footwear to be wearable in different kinds of settings and work requirements, the applicant has installed the foot arch correction device in conventional footwear that is waterproof and lightweight, such as the locally known "Bush shoes" which
20 are made of soft plastic foamed material. However, the applicant found that because the material of such conventional footwear is soft, the foot arch correction device is not well supported, so that the correction function of the foot arch correction device cannot be utilized. Hence, conventional waterproof and
25 lightweight footwear cannot be directly installed with the foot arch correction device. If the foot arch correction device is to be directly installed

into conventional footwear, because it occupies a substantial space, a space for insertion of the user's foot is minimized. As
5 a result, it becomes uncomfortable to wear such conventional footwear.

Therefore, embodiments of the present invention seek to provide an article of footwear that is waterproof and wear-resistant, that is lightweight, and that can be suitably
10 installed with a foot arch correction device.

According to an aspect of this invention, there is provided an article of footwear, comprising: a sole body made of a lightweight, wear-resistant, and waterproof material, having a front region, a heel region, and a middle region between said
15 front and heel regions, characterized by said sole body including a support plate that is made of a material harder than said sole body, that is disposed in said sole body, and that is adapted to support a foot arch correction device; an upper integrally connected as one piece with said sole body, and
20 including a vamp part connected to and extending above said front region and having a rear edge, a rear wall extending upwardly from said heel region, and left and right sidewalls extending upwardly and respectively from left and right ends of said sole body and having front ends connected to said rear edge
25 of said vamp part, and rear ends connected to said rear wall; and an instep strap including an instep abutment strap section extending convexedly from one of said left and right sidewalls toward the other one of said left and right sidewalls and having a first end integrally connected as one piece with one of said
30 left and right sidewalls, and a second end opposite to said first end, said instep abutment strap section being spaced apart from said rear edge of said vamp part; said instep strap further

including an extension strap section connected to said second end of said instep abutment strap section, and a buckle
5 connected to the other one of said left and right sidewalls, said extension strap section extending through said buckle and being folded back over said instep abutment strap section.

According to one embodiment of this invention, an article of footwear includes a sole body having a support plate adapted to
10 support a foot arch correction device, and an upper integrally connected as one piece with the sole body and including a vamp part having a rear edge, a rear wall extending upwardly from a heel region of the sole body, and left and right sidewalls extending upwardly and respectively from left and right ends of
15 the sole body and having front ends connected to the rear edge, and rear ends connected to the rear wall. An instep strap includes an instep abutment strap section extending convexedly from one sidewall toward the other sidewall, spaced apart from the rear edge, and having first and second ends. One of the
20 first and second ends is integrally connected as one piece with one of the left and right sidewalls.

According to another embodiment of this invention, an article of footwear includes a sole body having a support plate adapted to support a foot arch correction device,

and an upper integrally connected as one piece with the sole body and including a vamp part having a rear edge, a rear wall extending upwardly from a heel region of the sole body, and left and right sidewalls extending upwardly and respectively from left and right ends of the sole body and having front ends connected to the rear edge, and rear ends connected to the rear wall. An instep strap includes an instep abutment strap section extending convexedly from one sidewall toward the other sidewall, spaced apart from the rear edge, and having first and second ends. One of the first and second ends is integrally connected as one piece with one of the left and right sidewalls. A foot arch correction device is supported by the support plate.

Other features and advantages of the present invention will become apparent in the following detailed description of the preferred embodiments with reference to the accompanying drawings, of which:

Fig. 1 is a perspective view of an article of footwear according to the first preferred embodiment of the present invention;

Fig. 2 is a sectional side view of the first preferred embodiment;

Fig. 3 is a sectional rear view of the first preferred embodiment;

Fig. 4 is a sectional top view of the first preferred embodiment; and

Fig. 5 is a sectional top view of an article of footwear according to the second preferred embodiment of the present invention.

Before the present invention is described in greater detail, it should be noted that like elements are denoted by the same reference numerals throughout the disclosure.

Referring to Figs. 1 to 4, an article of footwear according to the first preferred embodiment of the present invention is shown to comprise a sole body 2, an upper 3, an instep strap 4, a heel strap 5, and a foot arch correction device 6.

The sole body 2 is shaped to correspond to that of a user's foot 1 (see Fig. 2), and is made of a lightweight, wear-resistant, and waterproof material. In this embodiment, the sole body 2 is made of an ethylene-vinyl-acetate (EVA) foam material. The sole body 2 has a front region (FR), a heel region (HR), a middle region (MR) between the front and heel regions (FR, HR), and a mounting groove 211 formed in a top surface thereof at the middle region (MR). The mounting groove 211 has a groove bottom wall 213 formed with a retaining groove 212 at the center thereof. The sole body 2 includes a support plate 22, a filling pad 23, and front and rear tread members 24, 24'. The support plate 22 is embedded in the retaining groove 212, extends in a front-to-rear direction, has a raised central portion 221 adapted to

match the shape of a foot arch of the user's foot 1, and is made of a material harder than that of the sole body 2. In this embodiment, the support plate 22 is made of metal, and can provide a hard support function. The
5 filling pad 23 is embedded in the mounting groove 211, covers the support plate 22, and is made of an ethylene-vinyl-acetate (EVA) foam material. The front and rear tread members 24, 24' are attached respectively to front and rear bottom faces of the sole body 2. Each
10 of the front and rear tread members 24, 24' may be made of polyvinyl chloride (PVC) or a rubber material which has a good anti-slip characteristic.

The upper 3 is integrally connected as one piece with the sole body 2, is made of an ethylene-vinyl-acetate
15 (EVA) foam material, and includes a vamp part 31 connected to and extending above the front region (FR) and having a rear edge 312, a rear wall 34 extending upwardly from the heel region (HR), and left and right sidewalls 32, 33 that extend upwardly and respectively
20 from left and right ends of the sole body 2, that are located respectively on two opposite sides of the user's foot 1, and that respectively have front ends connected to the rear edge 312 of the vamp part 31, and rear ends connected to the rear wall 34. The vamp part 31 and the
25 sole body 2 cooperatively define a foot-receiving opening 311. The vamp part 31 is not limited to that illustrated in the drawings. The vamp part 31 may be

designed differently according to one's desire. For example, the vamp part 31 may be provided with a hole (not shown) that communicates spatially with the foot-receiving opening 311, or a plurality of decorative pieces (not shown) may be adhered to an outer surface of the vamp part 31. The sidewalls 32, 33 further have upwardly extending protrusions 321, 331 projecting upwardly and respectively therefrom

The instep strap 4, as shown in Figs. 1 and 3, includes an instep abutment strap section 41, an extension strap section 43, and a buckle 42. The instep abutment strap section 41 extends convexedly from the left sidewall 32 toward the right sidewall 33, is spaced apart from the rear edge 312 of the vamp part 31, and has a plurality of loop fasteners 44 provided on an outer surface thereof, a first end 411 connected integrally as one piece with the left sidewall 32 at the protrusion 321, and a second end 412 opposite to the first end 411. In this embodiment, the extension strap section 43 is connected integrally as one piece with the second end 412 of the instep abutment strap section 41, and has a plurality of hook fasteners 45 to engage releasably the loop fasteners 44. A soft pad 46 is mounted to an inner surface of the instep abutment strap section 41. The buckle 42 is connected to the protrusion 331. The extension strap section 43 extends through the buckle 42, and is folded back over the instep abutment strap section 41 so as to

inter-engage the hook and loop fasteners 45, 44.

Since the instep abutment strap section 41, the upper 3, and the sole body 2 are made integrally as a one-piece body, the manufacture thereof is easy. Further, when
5 the user's foot 1 is in contact with the instep abutment strap section 41, the presence of the soft pad 46 on the inner surface of the instep abutment strap section 41 provides a protective cushion to the user's foot 1. In this embodiment, the extension strap section 43 is
10 connected integrally as one piece with the second end 412 of the instep abutment strap section 41. However, in an alternative embodiment, the extension strap section 43 may be a separate single strap that is connected to the second end 412 of the instep abutment
15 strap section 41.

In use, the extension strap section 43 is passed through the buckle 42, and is folded back over the instep abutment strap section 41 to lock the instep strap 4 to a selected adjustment length and to position the
20 user's foot 1 in the foot-receiving opening 311. At this time, the instep abutment strap section 41 abuts and surrounds the cuneiform bone 11 of the user's foot 1 in proximity to the rear edge 312 of the vamp part 31.

The heel strap 5 extends above the rear wall 34, and
25 includes a heel abutment strap section 51 and an extension strap section 52. The heel abutment strap section 51 has a plurality of loop fasteners 53, a first

end 511 fixed to a buckle 42' provided on the protrusion 321, and a second end 512 opposite to the first end 511. The extension strap section 52 is connected integrally as one piece with the second end 512 of the heel abutment strap section 51, and is provided with a plurality of hook fasteners 54. A soft pad 55 is mounted to an inner surface of the heel abutment strap section 51. The extension strap section 52 extends through the buckle 42', and is folded back over the heel abutment strap section 51 so as to inter-engage the hook and loop fasteners 54, 53, thereby locking the heel strap 5 to a selected adjustment length.

The foot arch correction device 6 is supported by the support plate 22, and is connected detachably to the sole body 2 through hook and loop fasteners 25, 62 provided respectively on the top surface of the sole body 2 at the heel region (HR) and a bottom surface of the foot arch correction device 6. In an alternative embodiment, the article of footwear of the present invention can be used without the foot arch correction device 6. Further, the foot arch correction device 6 can be made and sold separately from the other components of the article of footwear of the present invention.

In use, when the user's foot 1 is inserted into the foot-receiving opening 311, and steps on the foot arch correction device 6, the instep strap 4 is adjusted so that the instep abutment strap section 41 abuts and

surrounds the cuneiform bone 11 of the user's foot 1, and the heel strap 5 is adjusted so that the heel abutment strap section 51 abuts and surrounds the heel portion of the user's foot 1, as best shown in Fig. 2, thereby
5 positioning the user's foot 1 on the article of footwear of the present invention. Through the rigidity of the support plate 22 to support the foot arch correction device 6, when the user steps on the ground, the correction function of the foot arch correction device
10 6 can be effectively utilized.

With reference to Fig. 5, an article of footwear according to the second preferred embodiment of the present invention is similar to the first preferred embodiment. The difference between the first and second
15 preferred embodiments resides in the configuration of the support plate 22. In this embodiment, the support plate 22 includes a longitudinal strip 221, and a plurality of transverse parts 222 projecting transversely and respectively from left and right sides
20 of the longitudinal strip 221. The number of the transverse parts 222 may be increased or decreased according to the requirement. Through the presence of the transverse parts 222, the rigidity of the sole body 2 can be further enhanced.

25 From the aforementioned description, it is apparent that the article of footwear of the present invention has the support plate 22 embedded within the sole body

2 so as to increase the longitudinal rigidity of the sole body 2 at the center thereof, after which the filling pad 23 covers the support plate 22. The foot arch correction device 6 can then be connected detachably
5 to the sole body 2, and is supported by the support plate 22, so that the correction function thereof can be effectively utilized. Hence, the foot arch correction device 6 can be mounted suitably to the article of footwear of the present invention. Further, the article
10 of footwear of the present invention is provided with the adjustable instep strap 4 to suit the feet of different users, and the instep strap 4 is provided with the soft pad 46 on the inner surface thereof to thereby provide comfort during wear of the article of footwear
15 of the present invention.

CLAIMS:

1. An article of footwear, comprising:

a sole body made of a lightweight, wear-resistant, and waterproof material, having a front region, a heel region, and a middle region between said front and heel regions,

characterized by

said sole body including a support plate that is made of a material harder than said sole body, that is disposed in said sole body, and that is adapted to support a foot arch correction device;

an upper integrally connected as one piece with said sole body, and including a vamp part connected to and extending above said front region and having a rear edge, a rear wall extending upwardly from said heel region, and left and right sidewalls extending upwardly and respectively from left and right ends of said sole body and having front ends connected to said rear edge of said vamp part, and rear ends connected to said rear wall; and

an instep strap including an instep abutment strap section extending convexedly from one of said left and right sidewalls toward the other one of said left and right sidewalls and having a first end integrally connected as one piece with one of said left and right sidewalls, and a second end opposite to said first end, said instep abutment strap section being spaced

apart from said rear edge of said vamp part;

said instep strap further including an extension strap section connected to said second end of said instep abutment strap section, and a buckle connected to the other one of said left and right sidewalls, said extension strap section extending through said buckle and being folded back over said instep abutment strap section.

- 10 2. The article of footwear of Claim 1, characterized in that said sole body further includes a filling pad disposed in said sole body and covering said support plate.
- 15 3. The article of footwear of Claim 2, characterized in that said sole body further has a mounting groove formed in a top surface thereof and having a groove bottom wall, and a retaining groove formed in said groove bottom wall, said support plate being disposed in said retaining groove, said filling pad being disposed in said mounting groove.
- 20 4. The article of footwear of Claim 1, characterized in that said sole body further includes front and rear tread members respectively attached to front and rear bottom faces of said sole body.
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5. The article of footwear of Claim 1, further characterized by a heel strap connected adjustably to said left and right sidewalls and extending above said rear wall.

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6. The article of footwear of Claim 1, characterized in that said support plate extends in a front-to-rear direction, and is disposed in said middle region of said sole body.

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7. The article of footwear of Claim 6, characterized in that said support plate has a raised central portion adapted to match the shape of a foot arch of the user's foot.

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8. The article of footwear of Claim 6, characterized in that said support plate includes a longitudinal strip, and a plurality of transverse parts projecting transversely and respectively from left and right sides of said longitudinal strip.

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ABSTRACT

ARTICLE OF FOOTWEAR WHICH INCLUDES A SOLE BODY
HAVING A SUPPORT PLATE ADAPTED TO SUPPORT A FOOT
ARCH CORRECTION DEVICE

5 An article of footwear includes a sole body
 (2) having a support plate (22) adapted to
 support a foot arch correction device (6), and
 an upper (3) integrally connected as one piece
 with the sole body (2) and including a vamp part
10 (31) having a rear edge (312), a rear wall (34)
 extending upwardly from a heel region (HR) of
 the sole body (2), and left and right sidewalls
 (32, 33) extending upwardly and respectively
 from left and right ends of the sole body (2)
15 and having front ends connected to the rear edge
 (312), and rear ends connected to the rear wall
 (34). An instep strap (4) includes an instep
 abutment strap section (41) extending convexedly
 from one sidewall (32, 33) toward the other
20 sidewall (32, 33), spaced apart from the rear
 edge (312), and having first and second ends
 (411, 412). One of the first and second ends
 (411, 412) is integrally connected as one piece
 with one of the left and right sidewalls (32,
25 33).

Figure 1 is suggested for publication.