

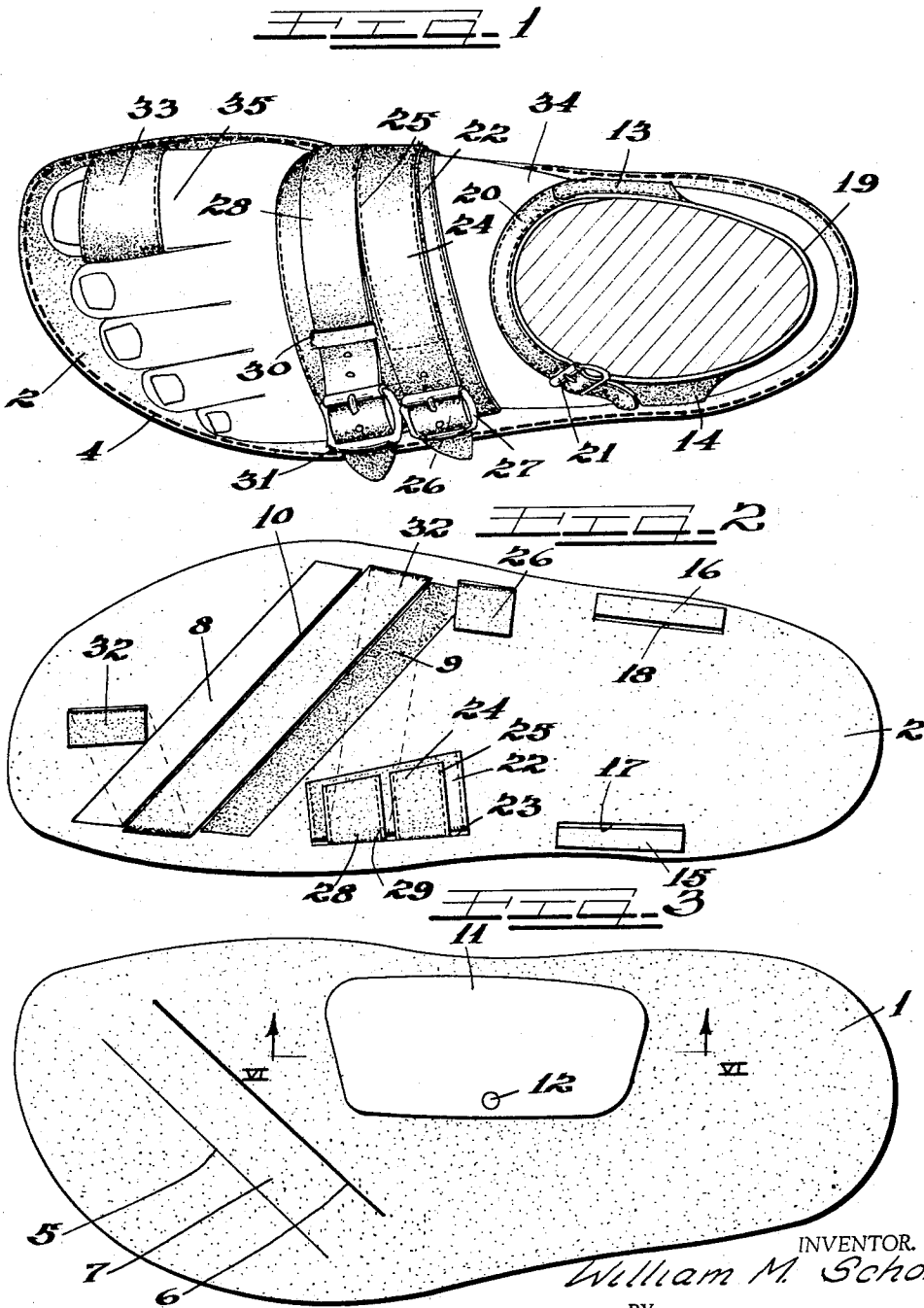
Sept. 27, 1966

W. M. SCHOLL  
CORRECTIVE SANDAL

3,275,002

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2 Sheets-Sheet 1



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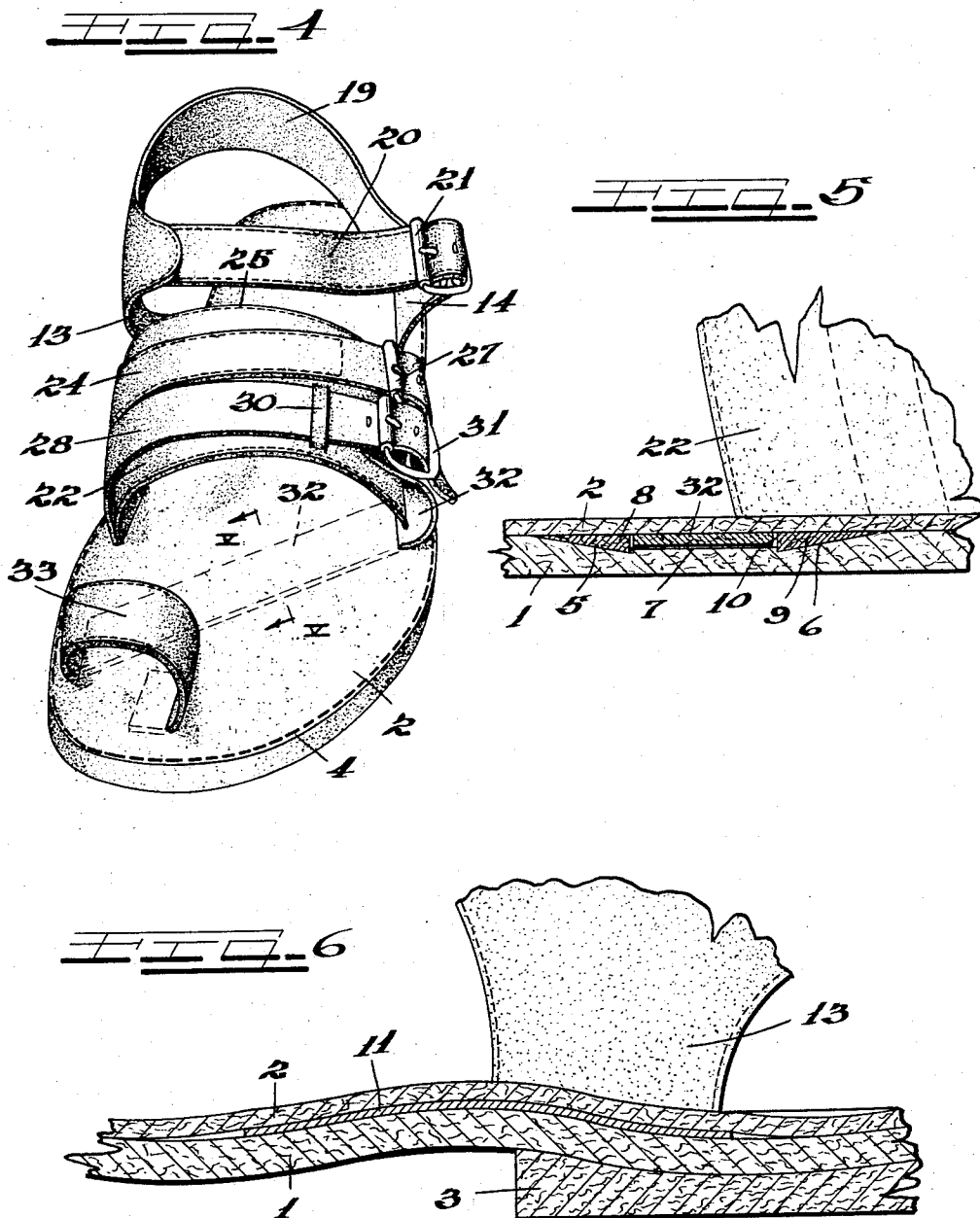
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**CORRECTIVE SANDAL**

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3 Claims. (Cl. 128—581)

This invention relates to improvements in a corrective sandal or similar article of footwear, the invention being highly desirable for providing corrective aid to a great toe deviated from its normal anatomical straight line, such as in cases of hallux valgus, and also to provide relief to related conditions, although the invention will have other uses and purposes as will be apparent to one skilled in the art.

Heretofore various types of devices for aiding conditions of hallux valgus and associated afflictions have been developed, and such devices range from toe spreaders for lesser conditions of toe deviation to what is commonly termed bunion springs, a device actually in the form of a brace, for severe conditions, which device could not be worn in an article of footwear but was only used during the night time. In most cases any form of device for treating hallux valgus and associated conditions that is worn inside a shoe or the like is uncomfortable to the user due to the necessary crowded condition within the shoe, unless an oversized shoe is purchased. Some devices in the form of thong sandals have heretofore been developed which might be of some aid to a deviated great toe and which would not exert any pressure upon a bunion adjacent the first metatarsal head but actually leave it free. Such devices heretofore developed, however, were of little actual aid in maintaining the great toe in the desired straight normal position, because of the fact that the thong embracing the distal phalanx of the great toe could not be adjusted or because that thong was a portion of the same strap that embraced another part of the foot for sandal retention and therefore was subject to undue flexibility because of movement of another part of the foot.

With the foregoing in mind, it is an important object of the instant invention to provide a corrective sandal or similar type of footwear so constructed as to positively retain the great toe substantially in its normal anatomically correct position even during standing, walking, or resting.

It is also an important object of this invention to provide a corrective sandal or similar article of footwear having adjustable thong for embracing the distal phalanx of the great toe and so hold the toe in a straight position with means separate from the thong for embracing the instep of the foot and stabilizing the foot whereby the thong will remain in the desired position of adjustment regardless of movement of other parts of the foot and the effect thereof upon retaining means engaging those other parts.

A further feature of the instant invention resides in the provision of a corrective sandal or similar device provided with an adjustable thong to embrace the great toe and hold it in substantially correct position, which thong is adjustable and which when adjusted has a pull toward the inside of the foot, with separate means for embracing the instep of the foot to stabilize the same, which means when adjusted have a pull toward the outside of the foot.

A further feature of this invention is the provision of a corrective sandal or the like having separate means for engaging the ankle and heel region of the foot, means for engaging and embracing the instep of the foot to stabilize the same, and an adjustable toe loop or thong to maintain the great toe in substantially its normal straight position.

While some of the more salient features, characteris-

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tics and advantages of the instant invention have been above pointed out, others will become apparent from the following disclosures, taken in conjunction with the accompanying drawings, in which:

5 FIGURE 1 is a fragmentary top plan view of an article of footwear embodying principles of the instant invention shown in operative position upon a human foot;

10 FIGURE 2 is a bottom plan view of the insole of the structure of FIGURE 1 with the foot embracing strap means associated therewith;

FIGURE 3 is a top plan view of the outer sole and arch support alone;

FIGURE 4 is a plan perspective view of a completed sandal or similar article of footwear off the foot;

15 FIGURE 5 is a greatly enlarged fragmentary vertical sectional view taken substantially as indicated by the line V—V of FIGURE 4, looking in the direction of the arrows; and

20 FIGURE 6 is a greatly enlarged fragmentary longitudinal vertical sectional view taken substantially as indicated by the line VI—VI of FIGURE 3, but through the completed structure.

As shown on the drawings:

25 The illustrated embodiment of the instant invention is an article of footwear in the form of a sandal. The sandal includes a composite sole comprising an outer sole 1 and an inner sole 2. As seen in FIGURE 6, an orthopedic heel 3 is preferably utilized beneath the heel end of the outer sole 1. The inner and outer soles are preferably cemented together throughout their confronting faces and also joined by a line of stitching as diagrammatically indicated at 4 in FIGURES 1 and 4. Preferably both 30 the inner sole and outer sole are molded over the same last, so that the upper face of the inner sole is provided with a contour in keeping with the plantar surface of a human foot. While various materials may be utilized as is known to those skilled in the art, the composite sole as well as the strap means to be later described are preferably made of leather because of its durability and shape-retaining properties.

40 With reference more particularly to FIGURES 3 and 5, it will be seen that in the forward portion thereof the inside face of the outer sole 1 is ground out as seen in FIGURES 3 and 5 obliquely on each side of a central elevated bed or platform 7 which extends diagonally across the outer sole. From the showing in FIGURE 5 it is apparent that the face of the bed 7 is below the normal thickness of the outer sole. In the sloping faces or notches 5 and 6 spacer guides 8 and 9 respectively 50 are positioned. As indicated in FIGURE 2, these spacer guides which are wedge shaped in cross section are preferably first cemented to the underface of the inner sole 2 and ultimately cemented also to the upper face of the outer sole 1 in the notches 5 and 6 as seen in FIGURE 5. The guides 8 and 9 are disposed sufficiently far apart and are of sufficient height above the bed 7 as to provide a track 10 between the inner and outer soles for the free movement of a strap to be later described. Also disposed between the inner and outer soles is a shank stiffener 11 shaped to support the longitudinal arch of the foot and which is provided with an aperture 12 through which the stiffener may be riveted to the inner sole. This stiffener, seen in FIGURES 3 and 6 is preferably made of stainless steel for strength and resistance 65 to moisture.

70 The sandal is retained upon the foot of the wearer by suitable bindings in the form of several straps. At the rear of a sandal there is a strap having upstanding opposed portions 13 and 14, the respective lower ends 15 and 16 of which are turned outwardly as seen in FIGURE 2 after passing through slots 16 and 17 respectively in the insole. Consequently the end portions of this

strap arrangement are held in position both by the aforesaid stitching 4 and also by the cementing of the inner and outer soles together. The upstanding portions 13 and 14 merge into a foot encircling strap 19 which goes around the foot above the heel, and to the front end of which is attached a strap 20 having a free end associated with a securing buckle 21 carried by the portion 14. With this strap arrangement, the rear part of the foot may be firmly held in position relatively to the sandal.

Another strap arrangement is disposed to embrace the middle of the foot around the instep and firmly hold that portion of the foot in a stabilized position. This strap arrangement embodies a wide strap band 22 having a free end toward the outside of the foot, while the other end extends through a slot 23 in the insole and is turned under for securement between the inner and outer soles as seen in FIGURE 2. A narrower strap 24 is firmly secured to the strap band 22 adjacent one side thereof by means of stitching 25. One end of this strap 24 is turned under the insole 2 along with the end of the band 22 as seen in FIGURE 2. The other end of the strap 24 is free for engagement with a short strap portion 26 by means of a buckle 27. One end of the strap 26 extends through a suitable slot in the insole and is secured between the inner and outer sole as those previously described. Another narrower strap 28 extends over the band 22 adjacent the other side thereof, and this strap 28 has an end portion only secured to the band by stitching 29, that end portion being turned under the insole along with the band end. This strap 28 extends freely over the band 22, a loop 30 integral with the band maintaining it in position. The strap 28 on the free end thereof may be associated with a buckle 31 carried by another strap 32. This strap 32 extends through suitable slots in the insole and through the aforesaid channel or track 10 diagonally across the insole where it emanates from beneath the insole through another suitable slot to form a toe loop 33, after which the strap again returns through a slot in the insole and its terminal is underturned and secured between the two sole members as seen in FIGURE 2.

With the arrangement just described, the toe loop is adjustable as to size. It may be enlarged by pulling upon the loop portion so that the strap 32 is drawn through the insole slot nearest the inside of the sandal, and it may be reduced in size by pulling upon the exposed portion of the strap 32 which carries the buckle 31. In FIGURE 1 I have illustrated the sandal upon a human foot 34, with the toe loop 33 embracing the great toe, and particularly the distal phalanx of the great toe.

It will be noted that the buckles 27 and 31 are at the outside of the foot so when the straps associated with these buckles are tightened the strap band 22 stabilizes the middle portion of the foot and tends to hold that portion toward the outer side of the foot. Tightening of the strap 28, of course, results in a pull on the strap 32 which results in holding the great toe towards the inner side of the foot, any pull on the toe by movement of the strap 32 being directed toward the inner side of the foot. Thus, with the heel held by the first described strap arrangement, the middle of the foot held and stabilized, and the great toe pulled and held toward the inner side of the foot, the foot is in a normal condition with the great toe lying substantially in its normal straight position. Adjustments of the toe loop may be made at any time desired as the deviation of the great toe improves. The ability to adjust the toe loop also enables proper fitting of various sizes of toes.

The sandal is moreover extremely comfortable particularly since the foot is maintained in proper position by the strap arrangements and also because the foot rests upon a surface contoured in keeping with the plantar surface of the foot, including a concave heel seat, a lift

at the arch, and a comfortably shaped floor portion to underlie the toes. The sandal may be worn as long as a time as desired, is extremely durable, and will clearly aid a condition of hallux valgus and assist in the correction of a deviated great toe.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. In a corrective sandal, an outer sole, an inner sole secured to said outer sole and having slots at predetermined locations therein, a strap for engaging the foot adjacent the heel, a strap for engaging the foot over the instep, a separate strap having a portion extending in and out of certain of said slots to define a toe loop, each of said straps having terminal end portions extending through certain of said slots and anchored between said soles, and means defining a track between said soles for free movement of said toe loop strap portion which extends in such direction that when tightened the large toe is urged toward the inside of the foot.
2. In a corrective sandal, an outer sole, an inner sole secured to said outer sole, an oblique platform on the forward part of said outer sole below the level of the upper face of the outer sole, spacer guides on either side of said platform and extending thereabove, said insole having a plurality of slots therethrough there being one adjacent each end of said platform, a strap having a terminal end extending through one of said slots and anchored between said soles at a point inward of the adjacent end of said platform, a toe loop formed by said strap which passes freely through slots and over said platform to render the toe loop adjustable, and means to adjustably secure the other end of said strap to the foot of the user.
3. In a corrective sandal, an outer sole, an inner sole secured to said outer sole, an oblique platform on the forward part of said outer sole below the level of the upper face of the outer sole, spacer guides on either side of said platform and extending thereabove, said insole having a plurality of slots therethrough there being one adjacent each end of said platform, a strap having a terminal end extending through one of said slots and anchored between said soles inwardly of the adjacent platform end, a toe loop formed by said strap which passes freely through slots and over said platform to render the toe loop adjustable, means to adjustably secure the other end of said strap to the foot of the user, and separate strap means anchored to said soles to embrace and stabilize the intermediate part of the foot.

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