July 14, 1959 W. M. SCHOLL 2,894,338

STABILIZING AND FOOT SUPPORTING SANDAL

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Fig. 1

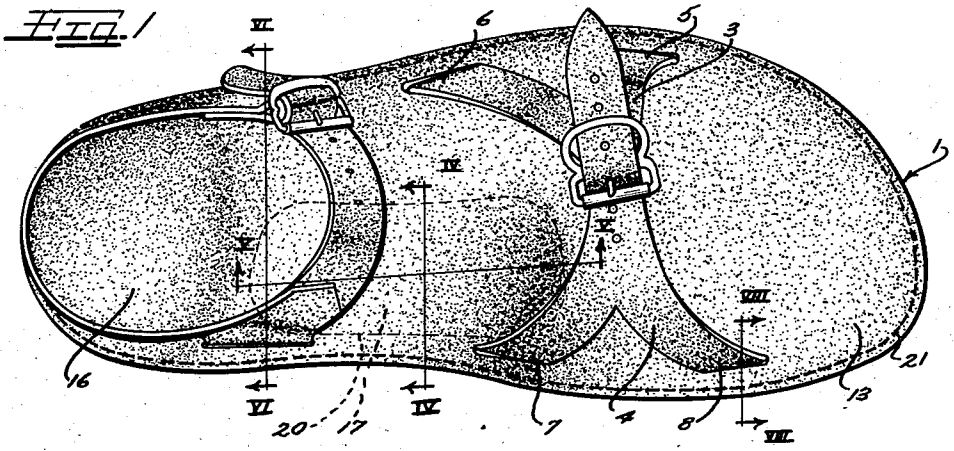


Fig. 2

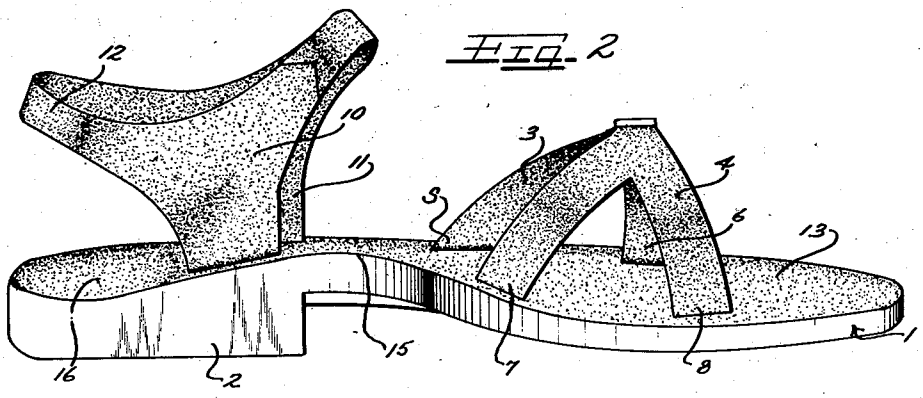


Fig. 3

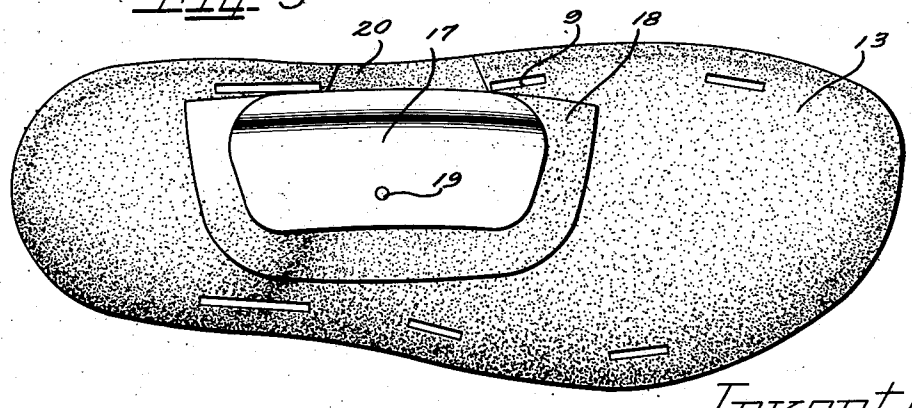


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Fig. 4

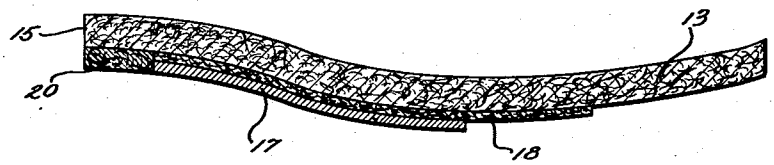



Fig. 5

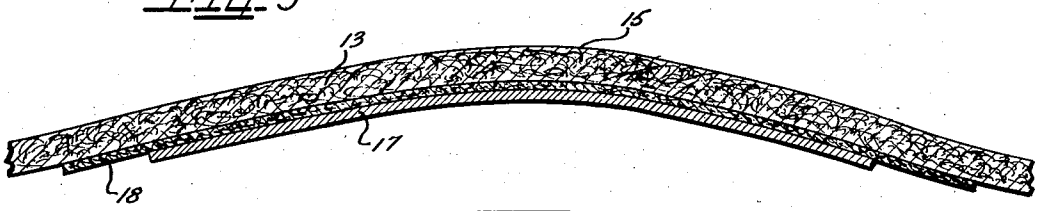



Fig. 6

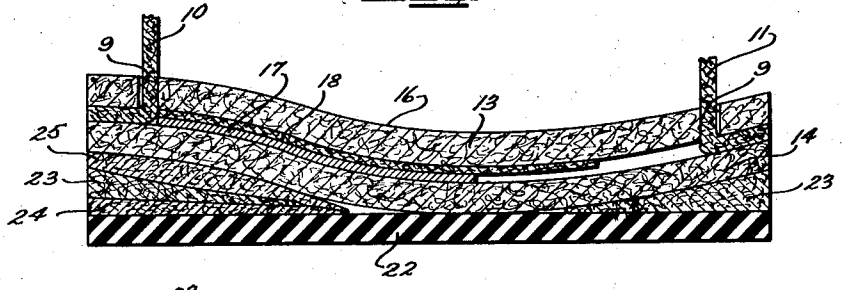



Fig. 7

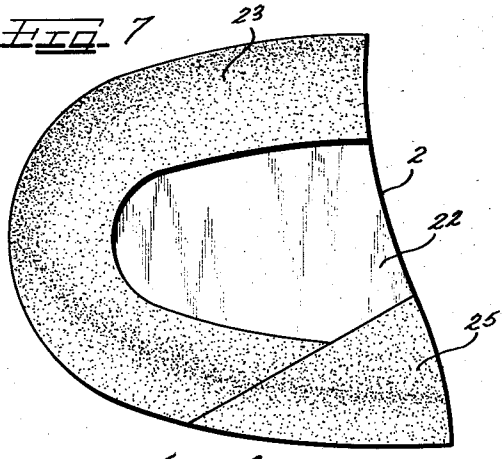
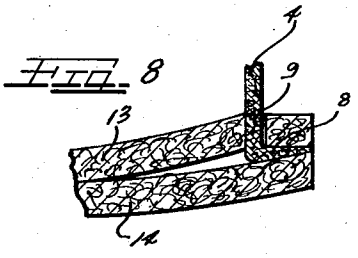



Fig. 8

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# STABILIZING AND FOOT SUPPORTING SANDAL

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Application December 10, 1956, Serial No. 627,198

2 Claims. (Cl. 36—8.5)

This invention relates to improvements in a stabilizing and foot supporting sandal, and more particularly to an article of footwear in the nature of a true sandal having spaced strap members to engage over the foot and hold sandal upon the foot, leaving the major portion of the foot exposed to open air, the sandal being constructed to adequately support and stabilize the human foot whereby the sandal is equally as comfortable to walk upon as a carefully made boot or shoe, and the invention may have other uses and purposes as will be apparent to one skilled in the art.

The instant application is a continuation-in-part of my copending application entitled "Stabilizing and Foot Supporting Sandal," filed May 3, 1955, Serial No. 505,685, and since abandoned.

In the past, many and various types of sandal-like articles of footwear have been made, and wherein spaced strap-like elements or the equivalents were utilized to maintain the device on the foot of the user and yet leave the main portion of the foot exposed to open air. In every instance of which I am aware, however, these formerly known sandals did not fit the human foot, at least the plantar surface of the foot, to a sufficient extent to lend stability to the foot during use of the sandal. It is a common characteristic of sandals that after a relatively short usage, they become somewhat loose fitting, which is not entirely cured by tightening the strap-like element. Sandals heretofore known, both before and after they became somewhat loose fitting provided only a flat sole and heel to the plantar surface of the foot and consequently did not properly support the foot or stabilize it during use. Further, sandals heretofore known in every instance of which I am aware, did not have any true shank portion to underlie the longitudinal arch of the foot, and particularly did not have a properly shaped shank portion strengthened by a rigid insert or member to maintain that shank portion firm and prevent it from falling. Consequently, the use of sandals as made heretofore resulted in discomfort to the foot, quick tiring of the foot, and in many cases actually caused damage to the foot through failure of proper support for the foot.

With the foregoing in mind, it is an important object of the instant invention to provide a sandal having a sole that has been conformed to a proper last and so capable of supporting the plantar surface of the foot in the proper manner.

Another object of the instant invention is the provision of a sandal having a sole conformed to a last, and including a cupped heal seat, an elevated shank to properly underlie the inner longitudinal arch of the foot, and the structure being such that the sole maintains that state throughout the life of the sandal.

A further feature of the instant invention resides in the provision of a sandal having a last conformed sole, and a last conformed or shaped rigid arch stiffener incorporated in the sole in such a manner that the shank of the sandal cannot break down.

Another feature of the instant invention resides in the



provision of a sandal having a last conformed sole, to which a heel is attached, the heel being provided with a concave or cup-shaped heel seat and the heel being higher on the inside corner thereof than elsewhere, so as to better support the shank of the sole.

It is also an object of this invention to provide a sandal having a last conformed sole, a last conformed shank stiffener incorporated in that sole to underlie the inner longitudinal arch of the foot, and a heel having a cup-shaped heel seat on the upper side thereof, which heel extends farther forwardly and is higher on the inside corner than elsewhere so as to underlie the shank of the sole and a portion of the stiffener therein.

Also an object of the invention is the provision of a sandal having a composite sole made up of an outer sole and an inner sole, both of which are conformed to a proper last, strap-like members to hold the sandal on the foot having their ends extending through slots in the inner sole to a position between both soles outward of the slots, and a conformed heel additionally elevated and extending farther forwardly on the inside corner than elsewhere to underlie the shank of the composite sole.

Still a further feature of the instant invention resides in the provision of an arch support having a composite sole made up of an inner sole and an outer sole both conformed to a proper last, and having reinforcing and stiffening means to maintain the proper shape of the inner longitudinal arch or shank portion of the composite sole, and a heel of which the inside corner is additionally elevated and extends beneath the stiffening means incorporated in the shank of the sole to prevent the shank breaking down during long usage.

Still another object of the instant invention resides in the provision of a sandal having a sole portion molded to a proper last of the foot.

While some of the more salient features, characteristics 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

Fig. 1 is a top plan view of a sandal embodying principles of the instant invention;

Fig. 2 is an inner side elevational view of the structure of Fig. 1;

Fig. 3 is a bottom plan view of the inner sole only and the shank stiffening and supporting means;

Fig. 4 is an enlarged transverse vertical sectional view taken substantially as indicated by the lines IV—IV of Fig. 1, looking in the direction of the arrows;

Fig. 5 is a fragmentary enlarged longitudinal sectional view taken substantially as indicated by the lines V—V of Fig. 1, both Figs. 4 and 5 being through the inner sole and shank stiffening means only;

Fig. 6 is an enlarged transverse vertical sectional view taken substantially as indicated by the lines VI—VI of Fig. 1, through the entire composite sole and heel of the sandal;

Fig. 7 is an enlarged top plan view of the heel only prior to application to the sandal sole; and

Fig. 8 is an enlarged fragmentary transverse vertical sectional view taken substantially as indicated by the lines VIII—VIII of Fig. 1.

As shown on the drawings:

The embodiment of the instant invention selected for illustrative purposes is a sandal for the left foot of a user, and it will be understood that a sandal for the right foot will be of a construction allochiral to the structure illustrated. It will also be obvious to those skilled in the art that the strap means for holding the sandal on the foot of a user may be varied as to disposition, widened or narrowed, as may be desired throughout

a substantial range without departing from the spirit or scope of the instant invention.

The illustrated embodiment of the instant invention includes a composite sole, generally indicated by numeral 1, a heel 2, and strap-like members by means of which the device is secured to the foot of a user. As seen in Figs. 1 and 2, in the illustrated instance, there is a pair of substantially Y-straps 3 and 4 for engagement over the forward part of the foot, these straps having end portions 5 and 6 for strap 3, and 7 and 8 for strap 4, which extends through suitable slots 9 in the insole and are locked between the inner sole and outer sole as will more fully be later explained herein. Adjacent the heel 2, there is a pair of upstanding strap portions 10 and 11 merging into a part 12 for encircling the heel of the user. The ends of the strap portions 10 and 11 also pass through slots in the inner sole.

With reference now to Fig. 6, it will be noted that the composite sole 1 is actually formed of an inner sole 13 and an outer sole 14, both of which soles are molded while wet and under pressure over a proper last for the foot. Preferably both the inner sole and the outer sole are molded simultaneously over the same last, although the soles are not at that time secured together. Such molding process, or last conforming process, provides both the inner sole and outer sole with an elevation 15 that will underlie the inner longitudinal arch of the foot, and also with a concave or cupped heel seat 16. Such an upper surface adequately and properly fits the plantar surface of the human foot.

While the strap elements and composite sole may be made of various materials, leather is preferable because of its shape-retaining characteristics and durability.

In order to maintain the desired elevation 15 in the shank portion of the composite sole throughout the life of the sandal, an arch or shank stiffener 17, Figs. 3, 4 and 5, is provided. This shank stiffener 17 is preferably made of metal, and is also molded or conformed to an accurate last of the foot so that the stiffener, as seen best in Fig. 4, has a cross section substantially the shape of an ogee, and as seen best in Fig. 5, the stiffener has a definite upward arch longitudinally thereof. Preferably this stiffener is so disposed as to underlie the inner longitudinal arch of the foot. A cover 18 of thin leather or equivalent material is preferably provided over the stiffener 17, and these two parts may be secured together as by a rivet 19. Preferably, as seen more particularly in Figs. 3 and 4, an elongated piece of leather 20 is disposed on the under face of the insole adjacent the inner edge thereof between adjacent slots 9, just inside the inner edge of the stiffener 17. This piece of leather is preferably of a thickness equal to that of the stiffener and its cover 18, and is of a width to gauge the position of the stiffener 17 properly clear of but close to the adjacent slots 9. This piece of leather prevents an unintentional downward turning of the marginal portion of the insole in that location. Nothwithstanding the fact that the ends of the various strap members pass through the slots 9 in the inner sole and are then turned toward the bounding edge to extend between the inner sole and outer sole, this is the only location where it is highly desirable or necessary to utilize the added piece 20.

In assembling the structure, so far described, the cover 18 of the stiffener 17 is preferably cemented to the under face of the inner sole 13 as is the strengthening piece 20, and then the ends of the straps are disposed through the slots 9 of the insole, turned toward the bounding edge of the insole, and the outer sole is then secured to the insole, preferably by cementing, over the turned strap ends as clearly seen in Fig. 6. A line of stitching 21 may then be run entirely around the composite insole to hold the inner sole and outer sole properly together and augment the action of any cement used for that purpose. Preferably this line of stitching passes through the turned ends of strap members. The ends of the strap members adjacent the supporting insert 20 are preferably left of full thickness, whereas the other strap ends are preferably skived so as not to cause too great a variance at the point where they extend between the inner and outer sole, as will be noticed from the strap end 8 of the Y-strap 4, as shown in Fig. 8.

With reference now more particularly to Figs. 6 and 7, it will be seen that the heel 2 preferably comprises a bottom tap 22 which is of substantially uniform thickness throughout, and on that bottom tap is an additional lift or rand 23 which extends around the marginal portion of the heel, except for the forward edge. This rand 23 as seen best in Fig. 6 decreases in thickness inwardly, and preferably does not cover the central portion of the heel as clearly seen in Fig. 7. This tapering lift, therefore, provides a concave or cupped heel seat in keeping with the shape of the above-described insole and outer sole.

Also, as seen in Fig. 7, it will be noted that the inner corner of the heel projects farther forwardly than the outer corner, and this inner corner is given added height. This is preferably accomplished by the use of a cuneiform lift 24 disposed beneath the horseshoe-shaped rand 23, and another cuneiform lift 25 disposed above the horseshoe-shaped rand 23. All these lifts may be secured together as by cementing or in an equivalent manner. At the opposite side thereof, the heel is provided only with the horseshoe lift 23. The heel is preferably of such size that the forwardly extending inner corner thereof underlies a portion of the shank stiffener 17 and this additional rise in the heel helps prevent the shank portion of the sandal breaking down. If the sole members were flat, as sandals were heretofore made, the additional cuneiform lifts 24 and 25 in the heel would not be necessary. But it is highly important that the shank portion of the sandal maintain its predetermined shape and not break down. In fact, even though the sandal be substantially worn out, the shank portion thereof will remain approximately as firm and upstanding as it was when the sandal was originally made.

In use, the sandal is extremely comfortable, and not only adequately supports the plantar surface of the foot, but also stabilizes the foot in walking. This is accomplished by the fact that the inner portion of the heel is higher than any other part thereof, the shank is given an upwardly arched shape and reinforced to maintain that shape, and a cupped heel seat is provided. Consequently, each time the foot is brought to rest upon the inner sole, the foot is adequately supported and held in firm stable position by the shape of the sandal sole. Heretofore, in the manufacture of sandals in every instance of which I am aware, there was no conforming of the sandal sole to a proper last, and the soles as well as the heels were merely flat. Thus, the support and stabilizing effect of the instant sandal were totally absent in sandals heretofore known.

From the foregoing, it is apparent that I have provided a simple form of sandal having a contoured shape in keeping with the plantar surface of a normal foot, and the heel, as well, is contoured, extended forward on the inner edge, and thereby enables the sandal to maintain its proper shape throughout a long life, and without any depressing or breaking down of the shank. Consequently, the instant invention is exceptionally comfortable and durable even though the strap members may be relatively loosely engaged around the foot of the user. While the sandal herein described is manufactured more costly and carefully than sandals previously known, the net result is a more economic sandal, due to the long life of the instant invention, as well as the comfort and maintenance of the foot properly supported and stabilized.

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 an article of footwear, a sole having a cupped heel seat with a forward elevation adjacent to the inner side thereof to underlie the inner longitudinal arch of the foot, a shank stiffener secured to said sole for permanently maintaining said inner longitudinal arch elevation, a heel underlying said cupped heel seat of the sole and extending forwardly on the inner side of the sole to underlie the rear part of said shank stiffener, a rand interposed between the heel and the sole, and means interposed between the sole and said forwardly extending portion of the heel and underlying the rear portion of said stiffener to give added height relative to said rand.

2. In an article of footwear, a sole assembly including matching outer and inner soles secured together and having a cupped heel seat with a forward elevation adjacent to the inner side thereof to underlie the inner longitudinal arch of the foot, straps for engaging the forward portion of the foot and straps for engaging the heel portion of the foot, said inner sole having adjacent to its inner and outer edges marginal slots through which end portions of the straps extend and turn toward the edges of the sole assembly and are secured fixedly between said inner and outer soles, one of said slots being located adjacent to the heel side of said arch elevation and a second of said slots being located on the opposite and forward side



of said arch elevation, a shank stiffener secured to said sole assembly for permanently maintaining said inner longitudinal arch elevation, a gauging and filler piece interposed between the inner edge of the sole assembly and said stiffener and between said one slot and said second slot, a heel underlying said cupped heel seat of the sole assembly and extending forwardly on the inner side of the sole assembly to underlie the rear part of said shank stiffener, a rand interposed between the heel and the sole assembly, and means interposed between the sole assembly and said forwardly extending portion of the heel and underlying the rear portion of said stiffener to give added height relative to said rand.

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