Oct. 3, 1961 M. D. NEILSON 3,002,297

FOOTWEAR

Filed Feb. 19, 1960

FIG. 2

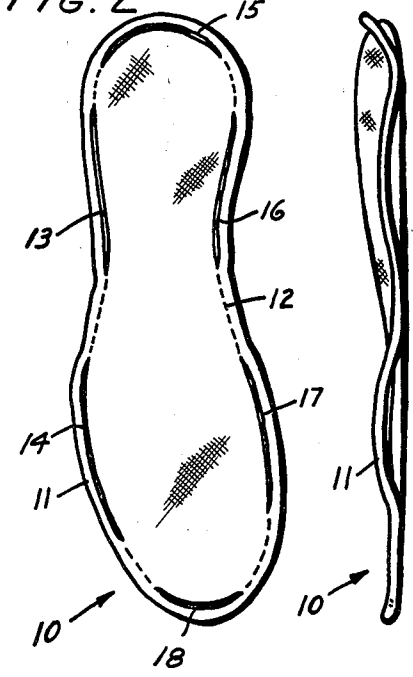


FIG. 3

FIG. 4

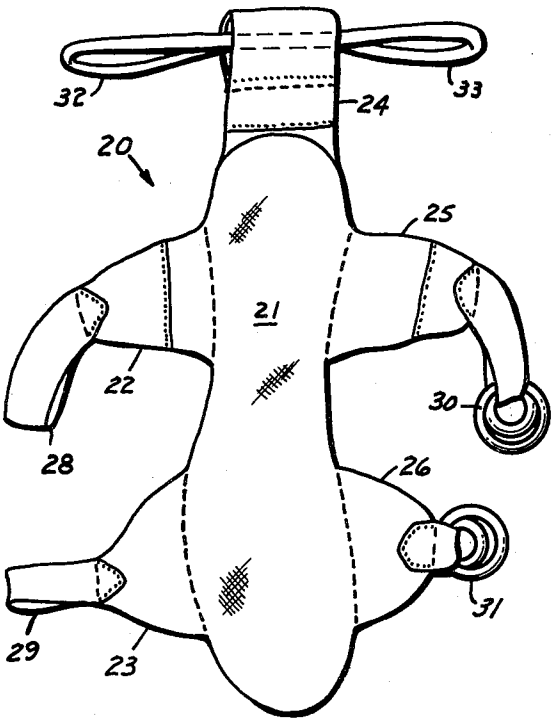


FIG. 1

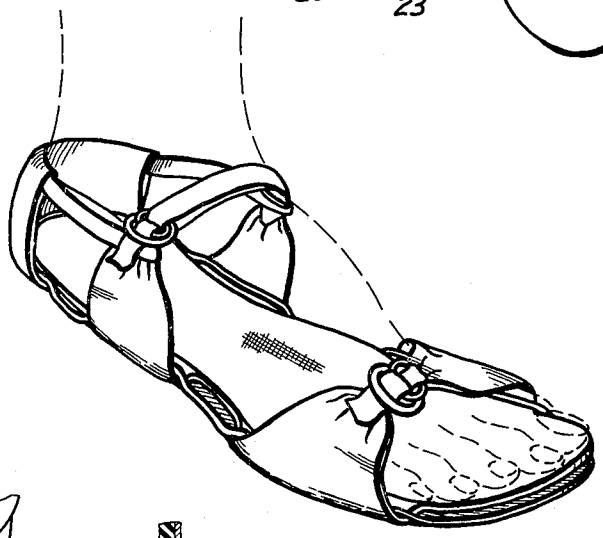
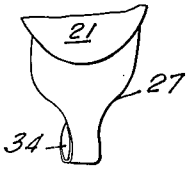


FIG. 5



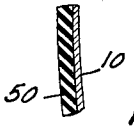


FIG. 6

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FOOTWEAR

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This invention relates to an article of footwear, which is particularly suited for casual wear.

It is an object of this invention to provide an article of footwear, which is simple, very flexible, inexpensive to manufacture, and comfortable. It is another object of this invention to provide an article of footwear which gives a heightened sense of protection, while at the same time gives the sensation of a remarkable feeling of freedom for the foot.

An article of footwear according to this invention comprises a top sole and a bottom sole which are completely free from each other, except at a plurality of spaced-apart points of attachment around their peripheries which extend for less than the total periphery of the foot. According to the preferred construction of the invention, the bottom sole is provided with extended openings, there being a plurality of them on each side thereof, and the top sole is provided with an equal number of attachment means in the form of straps which are adapted to be passed downward through the loops and brought up and over the foot. The top sole is thereby held snugly to the foot of the user, while the bottom sole is freely suspended from the top sole by the loops.

According to preferred but optical features of the invention, loops and straps may also be provided at either or both of the toe and heel ends of the shoe to provide protection to those ends of the feet.

The above and other features of this invention will be fully understood from the following detailed description and the accompanying drawings, in which:

FIG. 1 is a perspective view of the presently preferred embodiment of the invention shown on the foot of the wearer;

FIG. 2 is a plan view of the bottom sole of FIG. 1;

FIG. 3 is a side view of FIG. 2;

FIG. 4 is a plan view of the top sole of the article of footwear;

FIG. 5 is a plan view of another article of footwear according to the invention; and FIG. 6 is a fragmentary cross-section of an optional embodiment of sole for this footwear.

FIG. 2 illustrates the bottom sole **10** of the article of footwear according to the invention. This sole has a shape and area suitable for the size of foot to which it is to be fitted. As shown in FIG. 3, it may, if desired, be provided with a built-up contour. This contour can be formed by interior padding to provide a heel lift, if one is desired. A cord **11** is sewed or otherwise integrally fastened around the periphery of the bottom sole. It is fastened at only a part of the periphery, as shown by stitches **12**. The unstitched portion, where the cord is not attached directly to the sole, forms right side loops **13, 14**, heel loop **15**, left side loops **16, 17**, and toe loop **18**. These loops form openings of substantial length for passing without bunching attachment means to be described, which themselves are of substantial width.

The loops extend for less than the total periphery of the bottom sole and are sometimes herein called "joinder means."

Top sole **20** is illustrated in FIG. 4. It is provided with a central area **21** of suitable area and shape for the foot to which it is to be fitted. It should have about the same central area as the bottom sole. The top sole is provided with attachment means in the form of flexible right side straps **22, 23** integral with the right-hand side

of the sole, heelstrap **24** at the heel of the sole, left side straps **25, 26** at the left-hand side of the sole, and toe strap **27** at the toe of the sole. Toe strap **27** is optional, and may be omitted if an open toe construction is preferred. Then toe loop **18** will also be omitted.

The side attachment means are also provided with fastener means so that they may be fastened over the foot. A convenient form of fastener means is illustrated. Straps **22** and **23** carry tab ends **28, 29**, and straps **25, 26** carry double-ring fasteners **30, 31**. Straps **22** and **25**, and **23** and **26** are opposite to each other across the top sole so they can be fastened together by the fasteners to form a continuous strap across the foot.

The heel strap extends from the heel end of the top sole, and has laterally projecting therefrom an additional fastener means comprising a pair of loops **32, 33**. These loops can conveniently be stitch-tacked to the heel tab. If desired, a toe tab **27** can be attached to the front end of the top sole. Such a toe tab is shown in FIG. 5 extending around a substantial portion of the periphery of the top sole at the toe end, and has a loop **34** at its free end. The toe tab is optional.

The assembly and wearing of this shoe are shown in FIG. 1. To assemble the shoe, the top sole is placed atop the bottom sole and the straps which are used are passed downwardly through their respective openings at the loops in the bottom sole. The foot is then placed atop the top sole and the front side straps **23, 26** are brought up around the loops, over the foot, and fastened. If the toe strap is used, one of straps **23** or **26** is passed through loop **34** on the toe strap before the fastener joins the straps so that this strap is brought up over the toes to cover the same and hold there.

Next, the heel strap and its two loops **32** and **33** are brought forward, straps **22** and **25** being passed through them, respectively. Then the fastener on these straps is fastened. It will be seen then that loops **32** and **33** form with the rearmost attachment members a continuous embracing encirclement of the heel. Also, the rear straps and the heel strap rise from the sole to hold the heel in place on the top of the sole.

The toe strap is optional, and is used only if protection for the toes is desired. When it is used, the forwardmost side straps and the toe straps make a structure in the nature of a cap to cover and hold the front of the foot. When the toe strap is not used, the forwardmost side straps by themselves still serve as adequate means for holding the soles to the foot because they are adequate to prevent the top sole from moving much from side to side, and the heel strap and side straps locate the sole sufficiently relative to frontward and backward movement. In fact, the heelstrap need not always be provided, because for some uses, such as for a "scuffy" type slipper, the heel-embracing heel strap **24** and its loops may not be desirable.

Thus this invention contemplates as its minimum structure a pair of straps of sufficient width to give the desired side support, together with a plurality of points of attachment of the top and bottom soles at both sides thereof. It appears that it is the free suspension of the bottom sole from a plurality of spaced-apart side locations which makes this article so comfortable, although "free" suspension should not be taken to infer a sloppiness of fit. There may or may not be a spacing between the top and bottom soles when the foot is lifted off the floor, but the top sole does not restrain the bottom sole in the manner of the common shoe; that is, the shape of the two soles are independent of each other, so that the foot-embracing upper sole structure is free to conform to the movements of the foot without substantial opposition from the lower sole.

The article of footwear illustrated gives the wearer a

remarkable sensation of protection and freedom of movement. With or without the toe strap, there is a firm fit of the top sole with the foot. The foot is embraced by the attachment means, that is, the various straps which hold a fairly conforming flexible top sole **20** into a good fit with it. This gives a feeling rather like having a snug stocking on. Along with the comfortable feeling provided by the top sole, a feeling of freedom and ease in walking is provided by virtue of the suspended bottom sole. This is for the reason that the bottom sole may hang just a little beneath the top sole, and there is complete flexibility of movement of the foot relative to it. This hanging feature of the bottom sole could not be attained by a bottom sole stitched all the way around the periphery of the top sole. The bottom sole makes initial contact with the floor, and becomes flat on its bottom surface. This initial contact and change of shape is not entirely transmitted to the foot through the upper sole, because of the free suspension. Instead, the upper sole can make its contact with the lower sole independently of the contour assumed by the bottom sole. The contact which is felt by the foot is a cushioned contact between the bottom of the top sole and the top of the bottom sole. The bottom sole is usually well padded, so that the wearer receives a sensation of walking on a padded surface with feet that are free but snugly protected.

The device is easily made, and can be manufactured out of any suitable materials. Preferably, both soles ought to be quite flexible, and in fact, the preferred materials to date have been quilted fabrics. However, other conventional and well-known materials may be used as well, such as for example, but not of limitation, foam rubbers, polyethylene foams, and the various other commonly known materials of shoe constructions. The bottom of the bottom sole may conveniently be provided with a non-skid surface, such as by a sprayed-on coating of rubbery material. Such an arrangement is shown in FIG. 6 where bottom sole **10** is shown with a non-skid layer **50** attached thereto.

This invention is not to be limited by the embodiment shown in the drawings and described in the description, which is given by way of example and not of limitation, but only in accordance with the scope of the appended claims.

I claim:

1. An article of footwear comprising: a flexible bottom sole; a flexible top sole atop the bottom sole, said soles being completely separate from one another and substantially coextensive in shape and area; joinder means at the periphery of the bottom sole providing a plurality of openings; attachment means integral with and extending from the periphery of the upper sole, said attachment means being adapted to pass through said openings so that the bottom sole is suspended from the upper sole by the attachment means, said attachment means being adapted to be fastened around the foot; the joinder means joining the soles at a plurality of locations spaced around their periphery and around less than the entire periphery of either sole, whereby the bottom sole is suspended free of the upper sole except at the joinder means.

2. An article of footwear according to claim 1 in which the joinder means comprise loops at the edge of the bottom sole to form said openings, and the attachment means comprise flexible straps, respective straps being passed through respective openings so that a portion of each loop lies atop its respective strap to suspend the bottom sole.

3. An article of footwear according to claim 2 in which the openings are of substantial length and the straps are of substantial width, whereby a strap can be passed through its respective opening without bunching, and be of sufficient width to cover and embrace a substantial portion of the foot.

4. An article of footwear comprising: a flexible bottom sole; a flexible top sole atop the bottom sole, said soles being completely separate from one another and substantially coextensive in shape and area; a plurality of loops on each side of the bottom sole providing a plurality of openings of substantial length; a plurality of attachment means integral with and extending from each side of the periphery of the upper sole, said attachment means comprising flexible straps of substantial width adapted to be passed through the openings formed by said loops so as to suspend the bottom sole from the top sole through the attachment means, whereby at least two pairs of opposed straps are provided which are adapted to be fastened over the foot to hold the top sole against the foot and to hold the bottom sole suspended from the straps, said loops and straps extending for less than the entire periphery of either sole, the bottom sole being suspended free of the upper sole except through the loops.

5. An article of footwear according to claim 4 in which a loop is provided at the toe end of the bottom sole, and in which a toe strap is provided at the toe end of the upper sole, said toe strap being flexible to cover at least some of the toes when brought back over the top of the same, there being a loop in said toe strap to fit over and thereby be attached to the forewardmost pair of attachment means on the upper sole.

6. An article of footwear according to claim 4 in which the bottom sole is provided with a bottom non-skid surface.

7. An article of footwear according to claim 4 in which the bottom sole is provided with an additional loop at the heel end of the bottom sole, and in which the top sole is provided with a heel strap at the heel end of the top sole adapted to pass through the said loop at the heel end of the upper sole, and in which said heel strap is adapted to rise behind and embrace the heel, additional means being provided for joining the heel strap to the rearmost pair of attachment means at the side of the top sole, whereby the rearmost of the attachment means and the heel strap embrace and substantially enclose the heel.

8. An article of footwear according to claim 7 in which the additional means comprises a pair of loops extending laterally from the heel strap and adapted to fit over the rearmost attachment means.

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CERTIFICATE OF CORRECTION

Patent No. 3,002,297 October 3, 1961

Mary D. Neilson

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, lines 53, 55 and 61, column 4, lines 16, 26, 30, 34 and 43, for "upper", each occurrence, read -- top --.

Signed and sealed this 21st day of January 1964.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWIN L. REYNOLDS
Acting Commissioner of Patents