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G. PASTOR

3,086,301

SHOE CONSTRUCTION

Filed March 19, 1962

FIG. 1

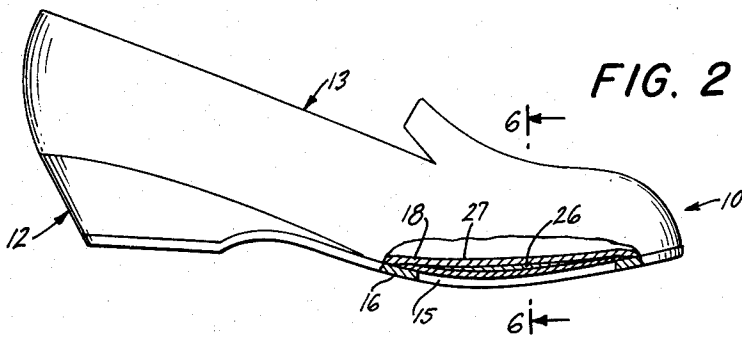
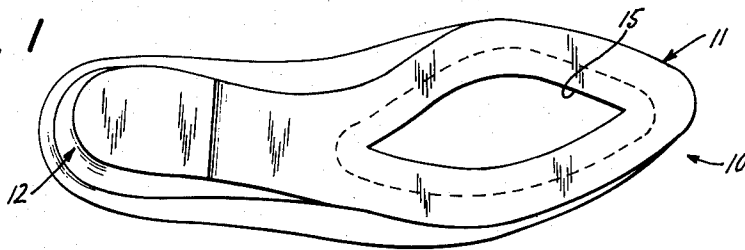


FIG. 2

FIG. 3

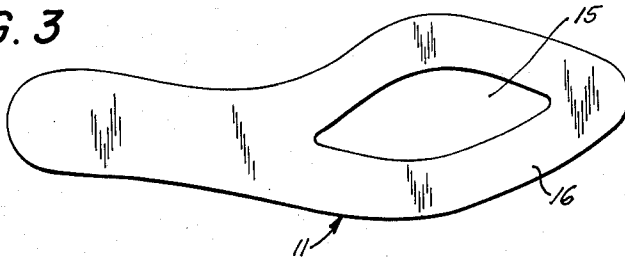


FIG. 4

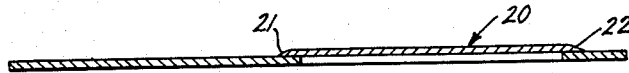
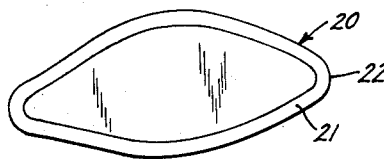
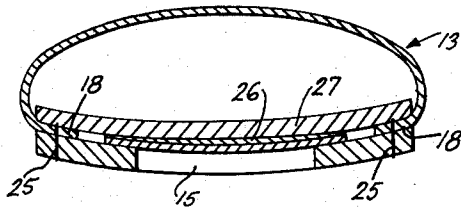


FIG. 5

FIG. 6



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3,086,301

SHOE CONSTRUCTION

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This invention relates generally to footwear or shoes, and is especially concerned with improvements in the sole construction of shoes.

As is well known, foot comfort may be enhanced by softness of the sole, and many sole constructions have been proposed toward this end. Also, it is well known that flexibility of the sole enhances foot comfort, and constructions have been proposed to simultaneously increase both flexibility and softness. However, prior sole constructions of this type have not been entirely satisfactory, especially by reason of cost, appearance, wearing qualities, and the like.

Accordingly, it is an important object of the present invention to provide a sole construction for shoes which overcomes the above mentioned difficulties, is extremely comfortable to the wearer, affording increased softness or yieldability and flexure, and which is relatively inexpensive to manufacture, and extremely durable in use.

It is a more particular object of the present invention to provide a unique outsole construction having the advantageous characteristics mentioned in the preceding paragraph, and which is readily adapted for use in women's shoes.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings, which form a material part of this disclosure.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts, which will be exemplified in the construction hereinafter described, and of which the scope will be indicated by the appended claims.

In the drawings:

FIG. 1 is a bottom plan view showing a shoe constructed in accordance with the teachings of the present invention.

FIG. 2 is a side elevational view showing the shoe of FIG. 1, partly broken away to illustrate the outsole construction.

FIG. 3 is a plan view showing an outsole of the present invention apart from a shoe.

FIG. 4 is a plan view showing a cover piece for attachment to the outsole of FIG. 3, but apart therefrom.

FIG. 5 is a longitudinal sectional view showing the outsole and cover piece of FIGS. 3 and 4 in assembled relation.

FIG. 6 is a transverse sectional view taken substantially along the line 6-6 of FIG. 2.

Referring now more particularly to the drawings, and specifically to FIGS. 1 and 2 thereof, a shoe is there generally designated 10, and is shown for purposes of illustration and without limiting intent as a lady's shoe. The shoe 10 includes an outsole 11, a heel 12, and an upper 13. The illustrated shoe 10 is of the wedgie type, wherein the heel 12 extends forward beneath the arch region, and the outsole 11 extends rearward beneath the heel. However, the instant invention is capable of employment in many varied types and styles of shoes, all of which are intended to be comprehended herein.

The outsole 11 may be fabricated of any suitable outsole material, such as leather, and is formed in its forward region with a through opening 15. The opening 15, as best seen in FIGS. 1 and 3, may be of generally ovaloid or elongate configuration, and may generally

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conform to the shape of the forward sole portion. However, it is essential that the through opening 15 be substantially spaced at all points appreciably inward from the bounding edge of the outsole 11, so that the outsole defines a bounding margin 16 of substantial width extending about the opening 15.

The upper 13 has its marginal edges 18 secured or connected by any suitable means, such as stitching, to the outsole 11 along the peripheral edge of the latter, see FIG. 6.

However, prior to assembly of the upper 13 with the outsole 11, a cover 20, see FIG. 4, is secured to the outsole in covering relation with respect to the outsole opening 15. In particular, the cover is advantageously fabricated of relatively flexible sheet material, such as upper leather, and may be of a configuration similar to that of opening 15, but slightly larger. Also, the cover 20 may have its peripheral margin 21 skived or beveled to a relatively thin edge 22, see FIGS. 4 and 5. The cover 20 is superposed on the upper or inner surface of the outsole 11 bridging and completely covering the opening 15. By any suitable securing means, such as stitching, cement, or the like, the cover 20 is secured in completely covering relation with the outsole opening 15, the peripheral margin of the covering having its undersurface seating on the upper surface of the outsole margin about the opening 15.

In the assembled shoe 10, the upper 13 is secured along the peripheral edge of the outsole 11, as by stitching 25, or in any suitable conventional manner. A layer of felt or other filler 26 may rest on the upper surface of the cover 20, and an insole 27 may be engaged over the inner or upper side of the outsole 11 and suitably secured therein, as by adhesive, stitching or otherwise. The insole may be of any suitable material, such as sponge, leather or the like, and may extend over the turned, secured edges of the upper 13 to completely cover the lower inside surface of the shoe 10. Also, the insole 27 overlies the filler 26, the latter being sandwiched between the insole and cover 20.

As the cover 20 is secured relatively taut across the opening 15, the cover may be considered as a diaphragm closing the opening. Further, the cover 20 being secured to the upper surface of the outsole 11, is thereby spaced from the undersurface of the outsole or a supporting ground surface by an airspace equal to the thickness of the outsole. In this way, engagement of the ground by the cover 20, when the shoes are in use, is effectively prevented. That is, only the outsole 11 engages the ground, so that the wearer's foot portion over the opening 15 and cover 20 is relatively softly supported by the diaphragm action of the cover 20.

Further, the opening 15 reduces the effective transverse cross section of the outsole 11, so that flexibility thereof is increased, to provide a shoe construction of increased comfort both in bending of the sole and in sustaining the central ball region of the foot spaced above the ground by an interposed airspace within the opening 15. This creates a uniquely comfortable sensation in both standing and walking, wherein the foot is supported by the outsole marginal portions 16 along the side regions of the foot, while the laterally medial foot region is suspended above the ground by the diaphragm or cover 20. Also, the configuration of the opening 15, its conformance to the forward portion of the outsole 11, effectively enhances flexibility of the entire forward region of the outsole.

From the foregoing, it is seen that the present invention provides an entirely unique and highly advantageous outsole construction for shoes, which fully accomplishes its intended objects and is well adapted to meet practical conditions of manufacture and use.

What is claimed is:

- 1. A shoe construction comprising a ground-engageable outsole, an upper connected to said outsole along the margin thereof, said outsole having a generally central through opening, and a flexible diaphragm extending across said outsole opening spaced above the lower surface of said outsole for supporting a wearer's foot, whereby said diaphragm is adapted to support a wearer's foot over an airspace between said diaphragm and the ground.
- 2. A shoe construction according to claim 1, said outsole opening being of generally ovaloid configuration extending longitudinally of said outsole and spaced inward from the edge margins thereof, whereby the central ball region of a wearer's foot is supported over said airspace.
- 3. A shoe constructoin according to claim 1, said diaphragm having its edge regions secured to the upper side of said outsole, whereby said diaphragm is spaced from the ground a distance approximately equal to the thickness of said outsole.
- 4. A shoe construction according to claim 1, said diaphragm being of relatively flexible material for flexure into said opening without engaging the ground to afford increased comfort to the wearer.
- 5. A shoe construction comprising a ground-engageable outsole, an upper connected to said outsole along the edges thereof, said outsole being formed in its forward region with a through opening spaced inward from the

outsole edges to leave a substantial width of outsole bounding said opening, and a cover of relatively flexible sheet material extending across said opening spaced above the lower surface of said outsole, whereby said outsole serves to support only the side regions of a wearer's foot while the central foot region is conformably sustained by said cover, for enhanced foot comfort.

6. A shoe construction according to claim 5, said cover having its edge regions secured to the upper side of said outsole, whereby said cover is spaced from the ground a distance approximately equal to the thickness of said outsole.

7. A shce construction according to claim 6, in combination with an insole superposed over said cover and extending substantially to said upper.

8. A shoe construction according to claim 7, in combination with a soft filler material interposed between said cover and insole.

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