March 22, 1932. G. E. MUSEBECK 1,850,977

FOOTWEAR

Filed March 1, 1930

FIG. 1

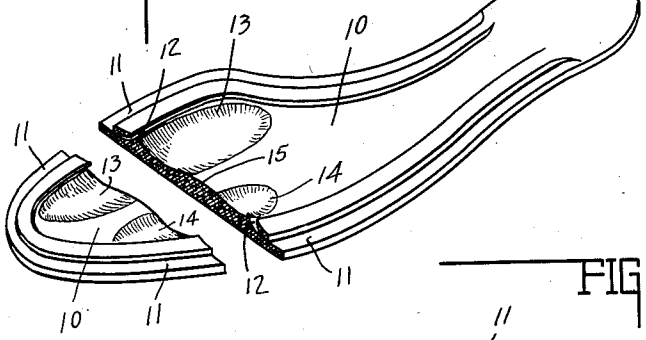


FIG. 2

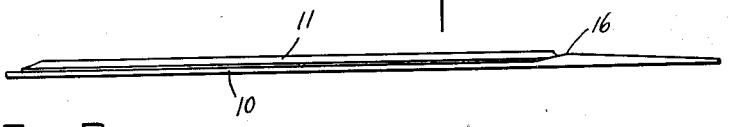


FIG. 3

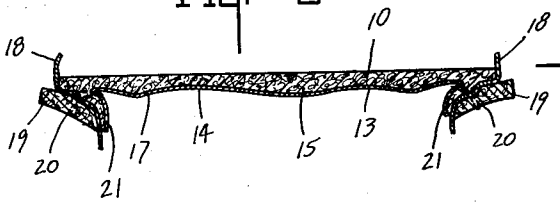
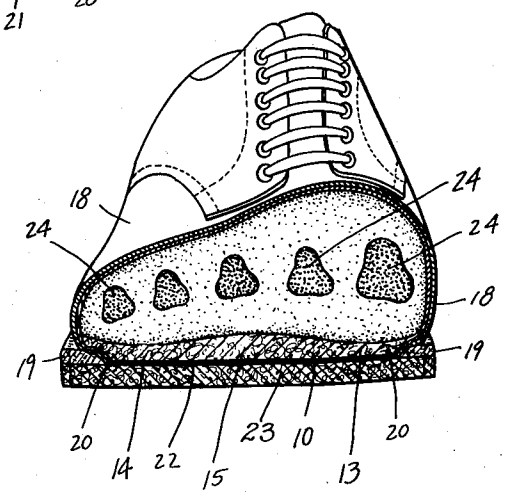


FIG. 4



INVENTOR.
GEORGE E. MUSEBECK.

BY
Lockwood Lockwood Goldsmith & Galt

ATTORNEYS.

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UNITED STATES PATENT OFFICE

GEORGE E. MUSEBECK, OF DANVILLE, ILLINOIS, ASSIGNOR TO MUSEBECK SHOE COMPANY, OF DANVILLE, ILLINOIS, A CORPORATION OF ILLINOIS

FOOTWEAR

Application filed March 1, 1930. Serial No. 432,339.

This invention relates to shoes. More particularly it relates to a shoe having an insole which is adapted in form to serve as a permanent support for both the longitudinal arch and metatarsal arch of the foot. The metatarsal arch supporting feature is claimed herein and the longitudinal arch supporting feature is claimed in copending application Serial No. 593,526, filed February 17, 1932, which is a division of the present application.

Heretofore it has been the practice to make the insoles of shoes of relatively thin leather. Where it has been desired to support the metatarsal arch, a piece of material entirely separate from the insole has commonly been inserted beneath the insole in the desired position. It has also been the practice to form about the periphery of the insole a stitching channel made by two parallel undercuts in the leather, the material displaced by the two cuts being brought together to carry the stitching. In this form of channeling, the said material occupies an appreciable space between the rim of the insole and the outsole The space between the soles and within this rim must, therefore, be filled by some type of filler, usually cork. After a shoe so constructed has been worn for sometime, the cork filler becomes distorted in shape and the foot is thrown to one side or the other of the shoe. The value of the metatarsal arch support is, therefore, completely lost within a short time.

It has also been proposed to shape the insole in various ways to provide arch support but heretofore such shoes, when built in the welt type, have invariably used the common distortable cork filler. The value of such arch support is maintained only as long as the said filler remains undistorted.

One object of the present invention is to provide an insole which in itself forms a support for the metatarsal arch and which is so channelled that no cork filler is necessary. Such an insole is not subject to distortion in wearing and the arch support is, therefore, effective over the entire life of the shoe.

Another important result of this type of insole resides in the fact that the weight of the body is properly distributed across the metatarsal arch so that "running over" of the shoe is avoided and the wear on the sole is equally distributed over the width of the shoe. The outsole, therefore, wears straight across the bottom instead of wearing thin to wedge-shape at either edge.

Other objects of the invention will be understood from the accompanying drawings and the following description and claims:

Fig. 1 is a perspective view of an insole such as used with the present invention with a part shown in section. Fig. 2 is a side elevational view of the same. Fig. 3 is a sectional view illustrating the manner of fastening the insole, upper and welt. Fig. 4 is a cross section of a shoe and foot enclosed therein taken across the metatarsal arch of the foot and illustrating the form of the insole at that point.

In Fig. 1 is shown an insole 10 positioned underside up. The outer edge of the sole, with the exception of the heel portion, is relieved, as illustrated at 11, to provide the proper space for the welt. Inwardly from the relieved portion, a stitching channel 12 is formed about the periphery of the sole, with the exception of the heel. The insole is formed of relatively thick leather and the portion thereof which will be positioned beneath the great toe of the foot is gouged out, as illustrated at 13 in Fig. 1, making the sole at that point relatively thinner than the remainder of the sole. In certain cases an adjacent portion14 is also gauged out, leaving a ridge 15 of thicker material between the portions 13 and 14. The heel portion of the sole is formed as illustrated in Fig. 2, uniformly tapering from a point adjacent the breast of the heel 16 to the extreme rear end of the sole, for the purpose more fully described in the before mentioned co-pending divisional application.

When the insole has been formed as described above, a canvas reenforcing member 17 is inserted as illustrated in Fig. 3. The upper 18 and welt 19 are then stitched to the insole by stitching 20 as illustrated in the said figure. The portion 21 of the insole adjacent the stitching channel 12 may then be

trimmed off to a certain extent, thus allowing the outsole 23 to rest close against the undersurface of the insole as illustrated in Fig. 4. If the common type of double channelling previously described where used the channeled material of the insole would occupy so much space that a filler would be required between the soles. If desired, a thin layer of hair felt 22 chemically treated may be inserted between the insole and the outsole as an insulation against dampness, cold or heat. This layer, however, is relatively thin and is not subject to the distorting effect always present with the relatively thick cork filler ordinarily used. The outsole is then stitched to the welt, completing the shoe as illustrated in Fig. 4. From this figure it will be seen that the weight of the foot upon the insole causes the latter to assume an arched form in which the upper surface is smoothly curved. In the said figure it is also apparent that the relatively thick portion 15 of the insole is positioned directly beneath the center of the arch formed by the metatarsal bones 24. In many cases it is not necessary to gouge out the portions 14 of the insole since the principal reason for supporting the metatarsal arch is to relieve excess pressure on the inner side of the foot. This is accomplished by the gouged out portion 13 without the necessity of gouging out portion 14 in a great many cases.

The invention claimed is:

1. A shoe having a thick insole provided with a single channel on its lower face and a recessed marginal edge portion opposite the channel, the lower face of said insole being provided with gouged out portions located at opposite sides of the metatarsal arch portion of the foot, an upper secured to said insole with the edge of the upper lying within the recessed portion of the insole, and an outsole disposed below the insole and rigidly supporting the insole over its entire area.

2. A welt shoe, having a thick insole provided with a single channel on its lower face and a recessed marginal edge portion opposite the channel, the lower face of said insole being provided with gouged out portions located at opposite sides of the metatarsal arch portion of the foot, a welt and upper inseamed to said insole with the welt and upper lying within the recessed portion of the insole, and an outsole disposed below the insole and rigidly supporting the insole over its entire area.

In witness whereof, I have hereunto affixed my signature.

GEORGE E. MUSEBECK.