Jan. 13, 1942. D. R. BRADY 2,269,427

WELT SHOE

Filed May 17, 1939

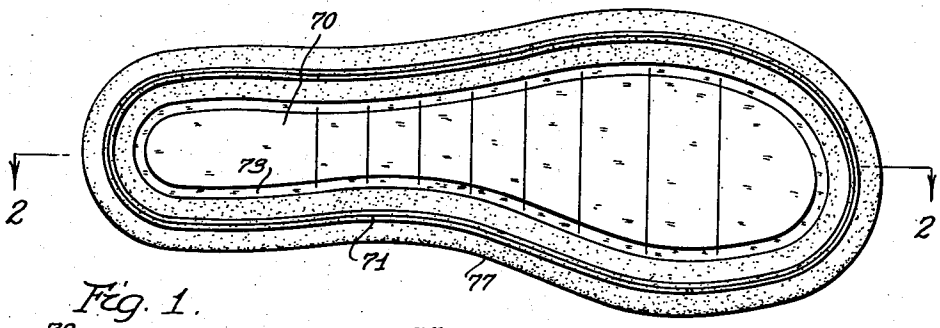


Fig. 1.

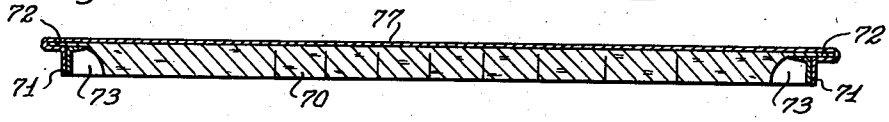


Fig. 2.

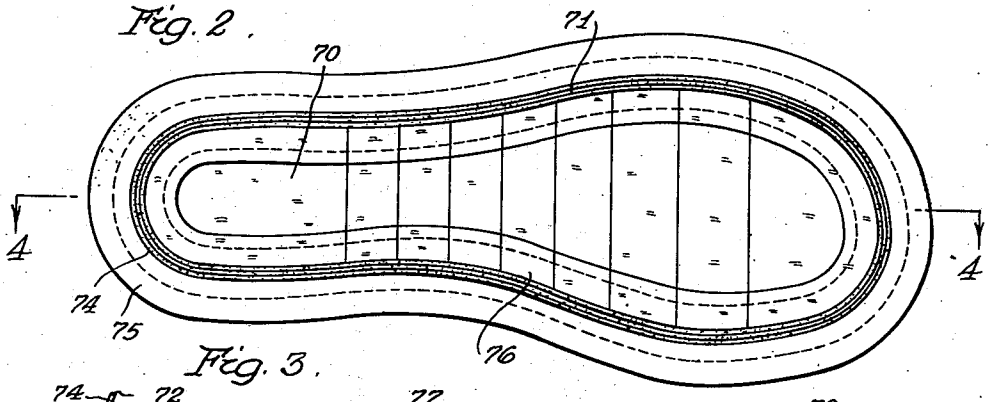


Fig. 3.

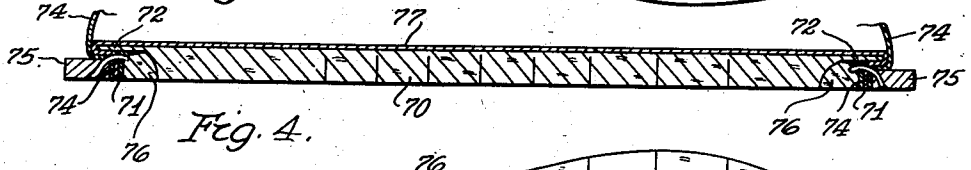


Fig. 4.

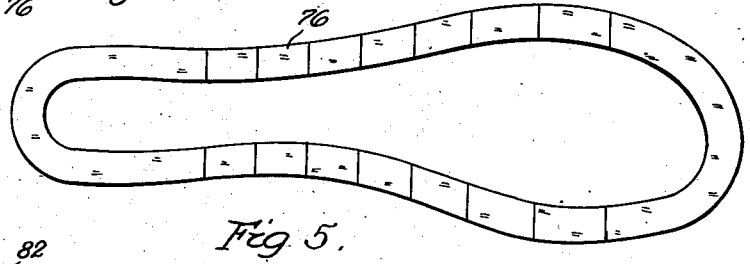


Fig. 5.

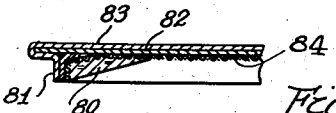


Fig. 6.

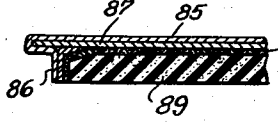


Fig. 7.

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Patented Jan. 13, 1942 2,269,427

UNITED STATES PATENT OFFICE

2,269,427

WELT SHOE

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Application May 17, 1939, Serial No. 274,245

2 Claims. (Cl. 36—17)

This invention relates to the construction of shoes and has for its primary object to provide an improved insole, from the standpoint of durability, and also from the standpoint of comfort to the wearer.

It is common practice in manufacturing shoes to provide an insole with an upstanding rib and to attach the shoe upper and a welt to the insole by sewing them to the rib by a system known as inseaming. The outsole is attached to the welt by a lockstitch seam which thus indirectly secures it to the insole. With this method of attaching the shoe upper and the outsole to the insole the upstanding ribs constitute what might be termed the connecting link between the main parts of the shoe, and therefore are the controlling factor as to durability. The main object of this invention, more specifically stated, is to provide a shoe insole having a rib construction of great durability and so constructed as to avoid discomfort to the foot of the wearer.

A common method of forming an insole having an upstanding rib consists in providing a comparatively thick blank, cutting two opposed channels adjacent the edge of the blank to form two opposed lips, bending the lips back to back and cementing them together to form the rib. This method is satisfactory from the standpoint of convenient attachment of the welt and shoe upper to the insole, but results in deformation of the insole after the shoe has been worn a short time. Forming the lips as an integral part of the insole requires cutting away and weakening of portions of the insole, and the weakened portions tend to collapse and form furrows which are a source of discomfort to the wearer. In this respect it is another object of the invention to provide an upstanding rib construction as a separate element and to attach it to the insole in such manner that its presence is not a cause of deformation.

Another object is to provide an insole having an upstanding rib constructed and attached thereto in such manner as to reinforce the insole.

In the case of ordinary shoes, for street wear, it is desirable that the region adjacent the arch of the wearer should be stiffer than the remainder, to thereby afford additional support for the longitudinal arch of the foot. This condition is especially desirable in corrective shoes, worn to correct foot deformities or to relieve discomfort due to weakened arches etc. In the case of athletic shoes, the conditions are different, and in many cases it is desirable that the sole be stiffer than the shank portion thereof. For example, baseball, football, track and field shoes require that the portion adjacent the arch be highly flexible, and that the remainder be comparatively stiff. Accordingly, it is another object of this invention to teach the use of reinforcing means so constructed as to provide portions of varying flexibility.

Another object is to provide an insole having a filler member secured thereto and coacting therewith in such manner as to provide a highly resilient insole, with improved cushioning conditions. In this respect a filler composed of cork and latex rubber is secured within the recess formed by the reinforcing rib. The filler has a portion thereof removed to permit inseaming of a welt to the rib, and after the welt is secured to the insole the removed portion of the filler is replaced and serves to support the region of the insole inwardly adjacent the rib.

Another object is to provide an insole having greater flexibility longitudinally than laterally.

Other objects and advantages will become more fully apparent as reference is had to the accompanying drawing wherein my invention is illustrated, and in which:

Fig. 1 is a bottom plan of an insole, showing a modified filler,

Fig. 2 is a section taken on the line 2—2 of Fig. 1,

Fig. 3 is a bottom plan, corresponding to Fig. 1, with a welt and upper secured to the insole,

Fig. 4 is a section taken on the line 4—4 of Fig. 3,

Fig. 5 is a plan of a filler insert,

Fig. 6 is a fragmental section illustrating a modified filler, and

Fig. 7 is a fragmental section illustrating a filler formed of an elastic plastic.

The composite insole shown in Figs. 1 to 5 is designed for use in a shoe having a welt extending continuously therearound. It is formed of comparatively thin sheet material 77 such as leather and a filler 70 of material such as rubberized cork. The filler 70 is provided with a portion of reduced thickness by cutting away a marginal portion thereof to form a marginal groove 73. The sheet material 77 overlies the planar face of the filler 70 and extends around the edge thereof into the groove 73. The sheet material 77 is bent downwardly to provide an upstanding rib 71 within the groove 73. The rib 71 is reinforced by a strip of angular cross section, as illustrated, which is secured to the rib and to the bottom of the groove 73 by an adhesive.

A shoe upper 74 and a welt 75 are secured to

the rib 71 and to the strip of angular cross section above mentioned by inseam stitching as illustrated in Fig. 4.

The portion of the filler member 70 which was removed to form the marginal groove 73 is so trimmed that it forms a filler element 76 which fits between the rib 71 and said strip of angular cross section and the adjacent wall of the groove 73. After attachment of the upper and welt to the insole, as above described, the filler element 76 is secured in the groove 73 by an adhesive. The insole is then ready for attachment of an outsole thereto by stitching the outsole to the welt in the usual manner.

The insole is illustrated without a fabric liner on the insole, but in some cases it is contemplated that a liner of light fabric will be used. In the event a liner is used it is secured in place by an adhesive in the manner above described. It is to be noted that with or without a liner the filler here described provides support for the region of the insole immediately adjacent and inward of the reinforcing means, and thereby prevents deformation of the insole in this region after the shoe is worn. The filler 70 and the element 76 are slit transversely to enable flexing of the insole.

In order to prevent deformation of the insole by collapse in the region immediately adjacent the reinforcing means a cork fillet-like insert 80 may be secured to the insole as illustrated in Fig. 6. The insert 80 is shaped to fit in the angle formed by the reinforcement 81 and the cork liner 82 of the insole 83, and is glued to both the reinforcement and the liner. A layer 84 of non-stretching fabric is interposed between the insert 80 and the reinforcement and liner.

The present insole may be provided with a liner of highly resilient rubber, as illustrated in Fig. 7. The insole 85 has a reinforcement 86 and a cork liner 87 secured thereto, and a fabric covering 88 applied thereto in the manner above described. A layer 89 of elastic material such as sponge or "Airfoam" rubber is secured by an adhesive in the trough-like recess defined by the reinforcement and the cork liner.

What is claimed is:

1. A shoe assembly comprising an insole composed of thin sheet material and a filler member of comparatively greater thickness, said filler member having a portion thereof removed to provide a marginal portion of reduced thickness or a groove encircling the insole, said sheet material being bent around the edge of said filler member into said groove and having an upstanding portion constituting a welt attaching rib, said rib being so related with the wall of said groove as to enable inseam stitching of a welt and upper to said rib, a welt and an upper, inseam stitching securing said welt and upper to said rib, and a filler element preformed to fit between the wall of the groove and the adjacent surface of said rib, said filler element being secured in said groove by an adhesive.

2. A shoe assembly comprising an insole composed of thin sheet material and a filler member of comparatively greater thickness, said filler member having a portion thereof removed to provide a marginal portion of reduced thickness or a groove encircling the insole, said sheet material being bent around the edge of said filler member into said groove and having an upstanding portion constituting a welt attaching rib, a strip of angular cross section secured to the bottom of said groove and to said rib and reinforcing the rib, said rib and strip being so related with the wall of said groove as to enable inseam stitching of a welt and upper to said rib and strip, a welt and an upper, inseam stitching securing said welt and upper to said rib, and a filler element preformed to fit between the wall of the groove and the adjacent surface of said rib, and said filler element being secured in said groove by an adhesive.

DAVID R. BRADY.