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R. S. LOCKRIDGE

2,878,593

ARCH SUPPORT

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Fig. 1.

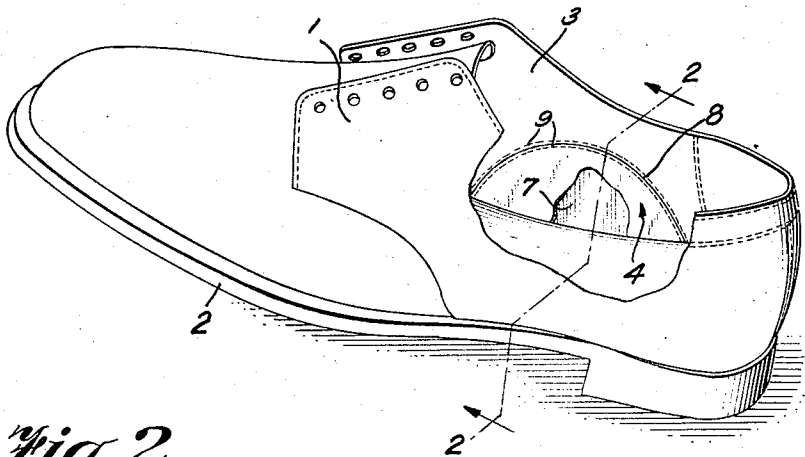


Fig. 2.

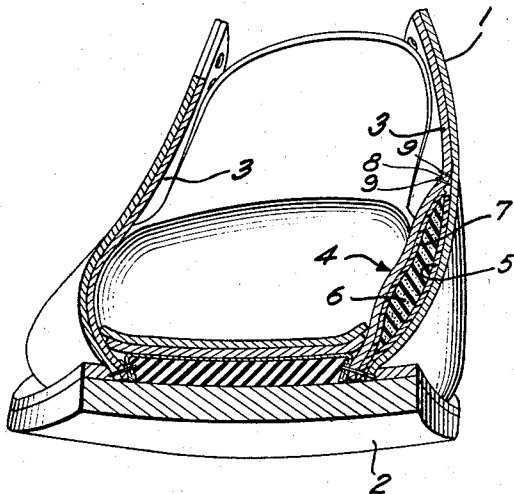


Fig. 3.

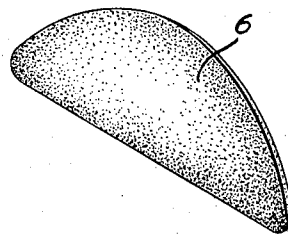
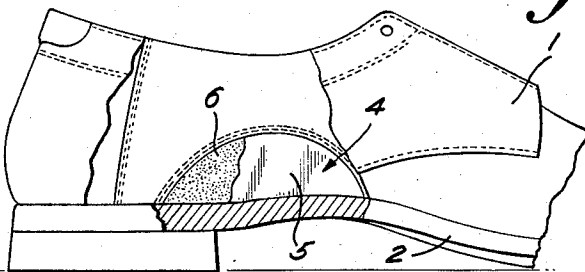


Fig. 4.



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ARCH SUPPORT

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3 Claims. (Cl. 36—8.5)

This invention relates to improvements in arch-supporting shoe structure, and more particularly to such structure wherein a cushioned support is built into the shoe.

Many structures have been proposed for providing cushioned arch supports in shoes whereby support may be obtained without losing the comfort of conventional shoes. It has been a problem to provide a cushion which would not bunch or press flat and thereby lose its protective qualities.

The object of the present invention is to provide a shoe having a cushioned arch support wherein pressure at any point on the cushion will be distributed evenly throughout the entire cushion to provide a soft yet firm support for the arch of the wearer.

Another object is the provision of a cushioned arch-support having a cushion member which is secured across its surfaces to other elements of the structure to prevent dislodgement and distribution of stresses and pressures.

A further and more specific object is to provide such structure wherein a cushion is sandwiched between a stiffened support member and a backing strip and adhered completely across its opposed faces to these members so that its movement under stresses can be definitely controlled.

Other objects of the invention will become apparent from the following description of one practical embodiment thereof when taken in conjunction with the drawings which accompany, and form part of, this specification.

In the drawings:

Figure 1 is a perspective view of a shoe having arch-supporting structure in accordance with the present invention, parts being broken away to more clearly show the arch-supporting structure;

Figure 2 is a vertical transverse section through the shoe in the region of the arch support, and is taken on the line 2—2 of Figure 1;

Figure 3 is a perspective view of the cushion used in the arch support; and

Figure 4 is a partial side elevation of the shoe, parts being broken away to show the arch support construction.

In general, the invention concerns the placement of cushioned arch-supporting structure in a shoe, wherein the arch support comprises a resilient cushion sandwiched between, and adhered to, a stiff arch support and a backing strip, with both the arch support and the backing strip being adhered to the shoe.

Referring to the drawings in detail, there is shown a shoe having the usual upper 1, sole 2 and lining 3. The arch-supporting structure is indicated generally at 4, and consists of a stiff polystyrene support 5, a rubber cushion 6 and a backing member 7. Each of the elements of the arch support is approximately semi-circular in shape. The cushion pad is shaped to taper towards its edges so that its peripheral edge will be quite thin.

In constructing the shoe, the inside quarter lining, after

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being cut to size and shape, is embossed with an arcuate line 8 to indicate the location of the arch support. At the same time, the lining may be embossed with a trademark or other suitable marking. Two rows of stitching 9 are then put in the lining along the line 8. The stitched rows provide a definite outline for the support area and make the lining more flexible along the rows so that it will bend easily to conform to the shape of the arch support when in place.

After the lining has been fitted in the usual manner, the piece of backing cloth 7 is ironed to the inside of the quarter lining in the area defined by the stitched rows. This causes the backing strip to adhere to the lining. The cushion pad 6 is then cemented to the backing strip. The adherence is across the full face of the cushion and fixes the cushion relative to the lining.

The lining is then sewed to the upper and the structure is ready for lasting, which is done by assembling the parts and pulling in the usual manner. After the pulling, and before side lasting, the polystyrene arch support is inserted to lie against the rubber cushion. The support, before insertion, is dipped in a suitable solution to soften it and make it pliable. At the same time, the polystyrene becomes quite tacky and will adhere to the rubber cushion and to the shoe upper. The side laster then lasts the shank of the shoe to the rib of the insole and, at the same time, causes the soft polystyrene material to conform to the contour of the last. When the support dries it is stiff and will hold its shape. It will also be bonded to the cushion and the shoe upper. The shoe is then finished following conventional procedures.

The cushioning member will be completely surrounded by the backing strip 7 and support member 5 and adhere across its surfaces to these two members. They, in turn, are adhered to the shoe lining and upper. Thus, the cushion is securely fixed and, due to the adherence over its complete surface to the flanking members, pressure upon it anywhere will result in distribution of the force over the whole cushion. This will prevent radical distortion of the cushion and provide a very soft feel to the wearer. The arch, however, will be firmly supported by the stiff underlying support member.

The stitched rows 9 will provide visual evidence that the shoe contains an arch support and will form a hinge line about which the lining may bend to adapt itself to the shape of the underlying cushion. This will result in an unusually smooth lining, free from foot irritating ridges, lumps, etc.

While in the above one practical embodiment of the invention has been disclosed, it will be understood that the precise structure shown is merely by way of example, and the invention may take other forms within the scope of the appended claims.

What is claimed is:

1. A shoe comprising an upper and a lining, a resilient cushion between the lining and the upper at the inside quarter, a stiff arch-supporting member between said cushion and the upper and adhered across its surface to the upper and the cushion, and a backing strip between said cushion and said liner and adhered across its surface to the lining and the cushion, whereby said cushion is sandwiched between the arch-supporting member and backing strip and has complete surface adherence to each and the arch-supporting member and backing strip have complete surface adherence to the upper and lining respectively to positively position the cushion and to cause distribution of stresses over the entire cushion area.

2. In a shoe as claimed in claim 1, said cushion, arch-supporting member and backing strip being generally semi-circular in shape and of approximately the same size.

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3. In a shoe as claimed in claim 2, said lining having at least one arcuate row of stitching therein defining the area of the cushion and arch support assembly and forming a hinge line along which the lining may bend to conform to the shape of the underlying structure.

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