

Feb. 9, 1971

J. W. BROWN

3,561,141

PRE-FORMED SHOE INSOLE

Filed Aug. 25, 1969

2 Sheets-Sheet 1

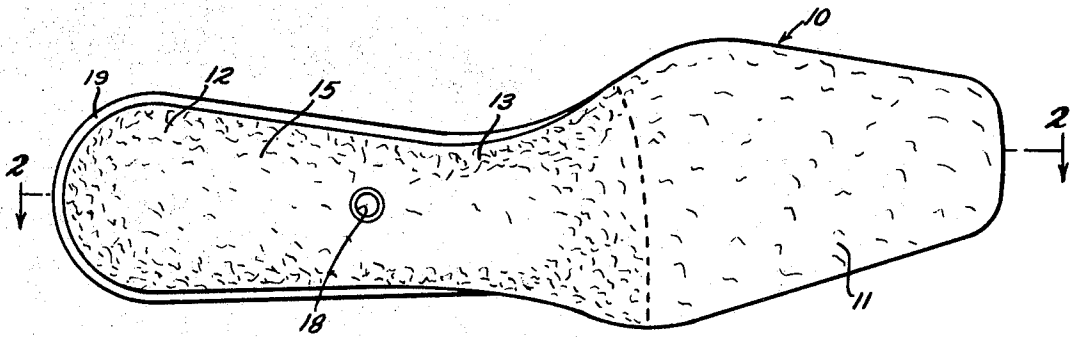


Fig. 1

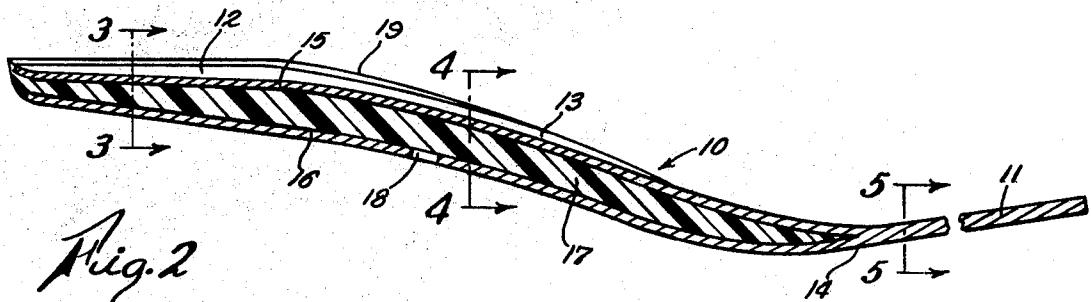


Fig. 2

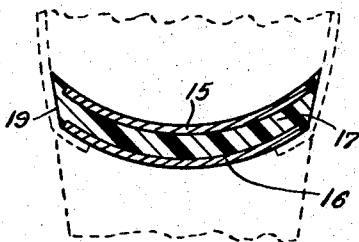


Fig. 3

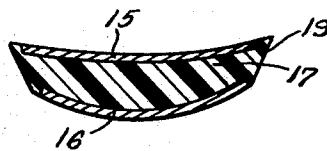


Fig. 4

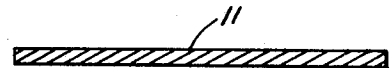


Fig. 5

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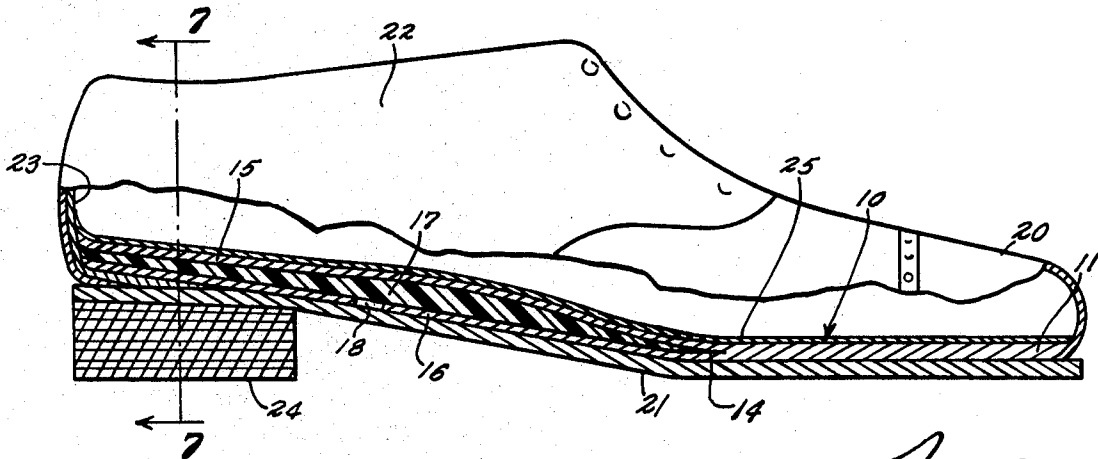


Fig. 6

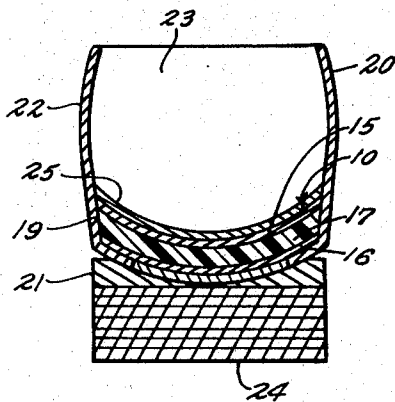


Fig. 7

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3,561,141

PRE-FORMED SHOE INSOLE

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Filed Aug. 25, 1969, Ser. No. 852,577
Int. Cl. A43b 13/38

U.S. Cl. 36—44

4 Claims

ABSTRACT OF THE DISCLOSURE

An insole blank having a preformed plastic body with structurally joined heel seat and shank portions and which can be directly incorporated into a shoe structure by conventional lasting methods to produce an improved shoe.

This invention relates to improvements in shoes and is particularly directed to a unitary, preformed insole blank that has structurally rigid and integrally joined heel and shank portions for direct incorporation into shoe constructions.

Shoes are conventionally constructed with separate fiber reinforcements at the shank and heel parts and the shanks are also strengthened by steel or wood bracing. It is an object of this invention to secure the foregoing reinforcements by the provision of a unitary insole having a preformed, rigid body. It is a further objective of this invention to provide a one-piece, preformed shoe insole having an intermediate member composed of an injection type thermoset or thermoplastic material that is interconnected by molding between upper and lower laminations of the insole blank, the body of said intermediate member being disposed continuously throughout the heel and shank portions of the insole blank and of sufficient thickness, strength and rigidity to serve as the heel cup and rigidifying shank in the completed shoe.

Another object of the invention is to provide a preformed shoe insole having a top surface that will conform accurately to the heel, shank and toe portions of the last upon which the shoe containing said insole is to be laid up.

Yet another object of this invention is to provide an improved shoe that has a contoured, form fitting insole preformed to serve as the unitary heel and shank portion of the shoe and adapted to be incorporated into the shoe structure by conventional lasting methods.

A still further object of the invention is to provide a shoe insole having the foregoing characteristics which is form retaining yet light in weight and which improves the appearance of the completed shoe because the insole conforms exactly to the shapes of its cooperating shoe components.

Other objects of the invention will be apparent from the following specification taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a bottom plan view of the shoe insole of this invention.

FIG. 2 is an enlarged, fragmental section taken on line 2—2 of FIG. 1.

FIG. 3 is a section taken on line 3—3 of FIG. 2, cooperating parts of a shoe heel being shown fragmentally in dotted lines.

FIG. 4 is a section taken on line 4—4 of FIG. 2.

FIG. 5 is a section taken on line 5—5 of FIG. 2.

FIG. 6 is a longitudinal cross-section of a shoe with the insole of this invention positioned therein.

FIG. 7 is a section taken on line 7—7 of FIG. 6.

Referring to the drawings the numeral 10 is the preformed shoe insole of this invention, said insole being formed by a blank 11 made of leather, synthetic, pulp or cellulose materials, or the like, said blank being slit hori-

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zontally through the heel portion 12 and through the shank portion 13, the slitting terminating at the ball portion 14 to form an upper lamination 15 and a lower lamination 16 on the insole blank.

An intermediate insole member 17 may be composed of a thermoplastic or a thermosetting plastic material but a high density polyethylene thermoplastic material is preferable because of its low cost and its stiff, form retaining characteristics when the insole is imbedded in a shoe structure. The preferred high density polyethylene which I employ as the insole member 17 has a density within the range of 0.955 to 0.960, and is injection molded between the laminations 15 and 16 of the insole blank 11, the body of said insole member 17 being bonded to the confronting faces of the laminations by injection molding and the consequent setting of the plastic material with the laminations imbedded therein. A spew hole 18 is formed through the lower lamination 16 to provide for the introduction of the thermoplastic material between the laminations during the injection molding process. The insole member 17 is of sufficient thickness, especially along the shank portion 13 to be solely and inherently form retaining when incorporated into a finished shoe and the plastic material at the heel portion of the insole is formed and adapted to receive and hold structural shoe nails, or the like.

With particular reference to FIGS. 3 and 4 of the drawing, it will be noted that the laminations 15 and 16 are imbedded in the body of the intermediate plastic member 17 and that the side and back edge 19 of the member projects beyond the side and back edges of the laminations, the said side and back edge 19 of the member being shaped to conform exactly to the predetermined configuration of the shoe upper and the heel seat (FIG. 3) of the shoe thus providing an exact fit in the finished shoe at the meeting portions of these components.

It will therefore be understood that I have provided a preformed shoe insole that is readily incorporated into a shoe and which is light in weight and solely forms the heel cup and rigid shank portions in the finished shoe.

In FIGS. 6 and 7 the insole 10 is shown embodied in a shoe 20 of otherwise conventional structure, the illustrated shoe including in addition to said insole 10 an outsole 21, an upper 22, a counter 23, a heel portion 24 and a sock lining 25. It will be understood by those skilled in the art that when a shoe is constructed with the insole 10 the last on which the shoe is laid up must be constructed to accommodate the contour of the particular insole and that said insole has the advantage of reducing the number of conventional lasting operations required in producing shoes of this character.

It will be further understood that the foregoing description and the accompanying drawings have been given by way of illustration and example of the invention. It is also contemplated that changes in form of the several parts, substitution of equivalent elements and rearrangements of parts, which are readily apparent to one skilled in the art may be made without departure from the spirit of this invention, the scope thereof being limited by the appended claims.

What is claimed is:

1. A permanent, pre-formed shoe insole comprising a flexible blank having a toepart and spaced apart upper and lower laminations extending from the rear end of the heel portion of the blank through said heel portion and through the shank portion of the blank and terminating at the ball portion of the blank toepart, and an intermediate body member between the laminations of the blank and composed of a form retaining plastic material bonded to the confronting faces of the laminations and adapted to become the unitary heel cup and rigid shank in a completed shoe.

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2. A shoe insole as set forth in claim 1 characterized by the fact that the pre-formed body member has a continuous side and end portion extending beyond the marginal edge of the heel and shank portions of the blank, said body extension having the exact shape of the heel cup and shoe heel upper therefor.

3. A shoe insole as set forth in claim 1 wherein the body member is adapted to receive nails, said body member consisting of high density polyethylene.

4. A shoe insole as set forth in claim 3 further characterized by the fact that the density of the polyethylene plastic body member is within the range of 0.955 to 0.960.

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10 PATRICK D. LAWSON, Primary Examiner