May 30, 1944. V. M. HECK 2,349,866

SHOE CONSTRUCTION

Filed June 14, 1943

Fig. 1.

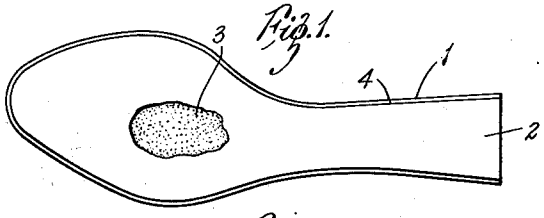


Fig. 2.

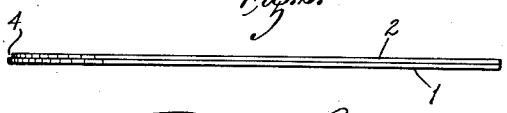


Fig. 3.

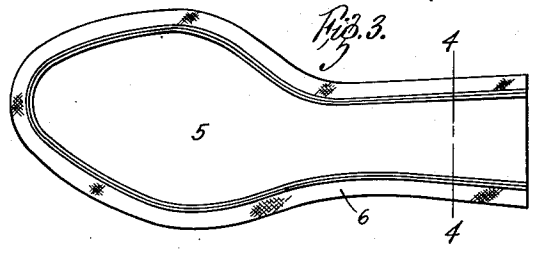


Fig. 5.

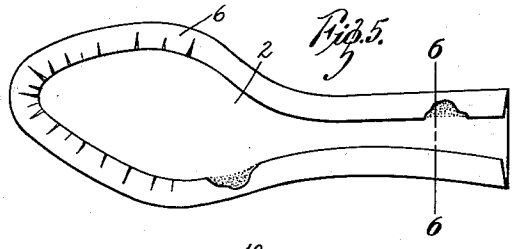


Fig. 9.

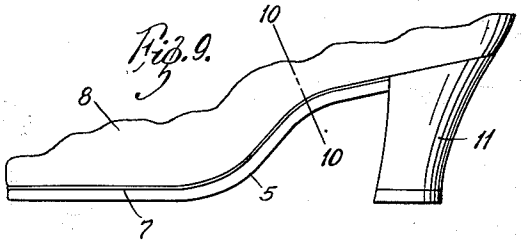


Fig. 4.

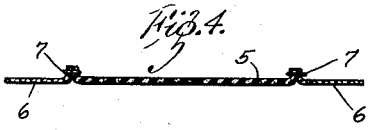


Fig. 6.

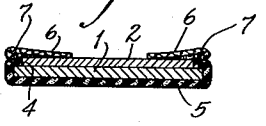


Fig. 7.

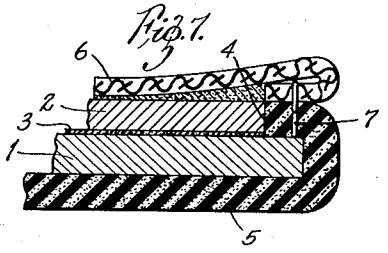


Fig. 8.

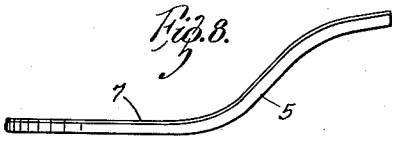


Fig. 10.

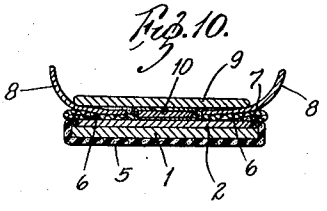
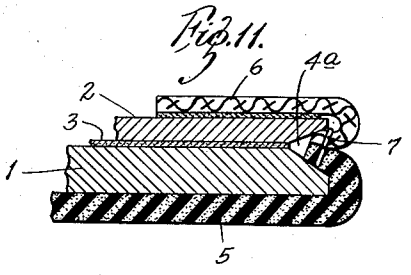


Fig. 11.



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UNITED STATES PATENT OFFICE

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SHOE CONSTRUCTION

Valentine M. Heck, St. Louis, Mo., assignor to International Shoe Company, St. Louis, Mo., a corporation of Delaware

Application June 14, 1943, Serial No. 490,717

5 Claims. (Cl. 36—19.5)

This invention relates to improvement in shoes.

An object of the invention is to provide a shoe construction which dispenses with the usual leather outsole and, in substitution therefor, provides a construction that includes in combination with a shoe upper, a fabricated sole that has durable wearing qualities, provides a sufficient protection for the sole of the foot of the wearer, and is light and comfortable when worn.

Another object of the invention is to provide a fabricated outsole, having sufficient resiliency and durability, yet, providing sufficient protective stiffness when combined with the shoe upper to provide a finished and comfortable shoe, and which may be readily applied by a cementing process to the insole having a completed shoe upper attached thereto.

Additional advantages of the invention will be apparent from the following detailed description, taken in connection with the accompanying drawing, in which:

Fig. 1 is a plan view of a laminated blank that constitutes the base or filler for the outsole;

Fig. 2 is an edge view of the same parts;

Fig. 3 is a top plan view of the outer cover, with the marginal retaining strip, for the bottom surface of the outsole;

Fig. 4 is a cross section taken substantially on the line 4—4 of Fig. 3;

Fig. 5 is a top plan view of the filler or base of the outsole, with the outer cover applied thereto;

Fig. 6 is a cross section substantially on the line 6—6 of Fig. 5;

Fig. 7 is a broken plan view enlarged illustrating fragmentarily the parts shown in Fig. 6 in more completed detail;

Fig. 8 is the same element shown in Fig. 5, preformed for application to the shoe;

Fig. 9 is a view showing the assembly of the outsole with the shoe upper;

Fig. 10 is a cross section substantially on the line 10—10 of Fig. 9; and

Fig. 11 is a view similar to Fig. 7 showing minor modifications of the construction of the base or filler for the outsole.

In the embodiment of the invention illustrated in the drawing, the base or filler for the outsole is composed of an outer layer 1 and an inner layer 2, cut to the contour of an outsole, including the shank portion, and said members 1 and 2 being secured together throughout their matching surfaces by an adhesive. The securing means preferably comprises a layer of cement 3 of relatively permanent securing qualities.

The outer layer 1 of the base or filler of the outsole preferably is formed from a blank of relatively stiff, hard impervious material, for example, a material known as laflex, which is made of paper or fibre laminated together with rubber.

The layer 2 is a blank of relatively softer material, such as fibre and follows the general contour of the layer 1, except that it is cut somewhat smaller than the layer 1, thereby providing an L-shaped recess 4 for a purpose that will be later described.

The outer cover 5 or wearing surface for the outsole is formed from a blank of plastic or similar synthetic material having for ordinary use a thickness of approximately $\frac{1}{16}$". This material is extremely flexible, and has resistance to frictional wear. A fabric marginal strip 6 is attached to the margin of the blank 5, the method of attachment being preferably accomplished by in-turning the marginal edge of the blank 5 and stitching thereto the fabric marginal strip 6 as specifically illustrated in Fig. 4, by row of stitching 7.

The dimension of the blank 5 is such that it covers the outer surface of the blank 1 and covers the outer margin thereof and the margin of the blank 2. The strip 6 thereby provides a bottom and edge cover for the outsole unit of the shoe. The cover 5 is attached to the filler 1—2, by stretching the blank over the bottom surface and margin of the blank 1, and the strip 6 over the upper surface of the margin of the blank 2, with the row of stitching 7 seated in the recess 4. The strip 6 is cemented to blank 2, while the blanks are flat.

After the outsole has been formed as described, the outsole is preformed by any suitable pressing operation to the configuration shown in Fig. 8. This pressing operation serves to tightly stretch the cover member 5, so that it will lie smooth and close against the member 1.

The lasted shoe upper 8 has the margin of the toe, ball, and shank portion in-turned over the marginal edge of an in-sole 9, to which it is firmly secured by any suitable cementing process.

The preformed outsole is then securely cemented in place, as illustrated in Fig. 9, with a shank 10 preferably inserted between the insole 9 and the upper face of the blank 2 of the outsole, and the outsole firmly secured in place by any of the known cementing operations.

Any form of heel 11 is applied to complete the

shoe, and is attached to the construction by securing it to the heel section of the insole 9.

Two minor modifications of the construction are shown in Fig. 11. It is contemplated in the construction shown in Fig. 11, that, instead of forming the L-shaped margin by cutting the member 2 of a smaller dimension than the member 1, that both pieces may be made of the same extreme contour and beveled to form the V-shaped recess 4a, in which the seam 7 joining the members 5 and 6 is seated.

From the foregoing description, it will be recognized that a construction has been provided that produces from currently available materials, and without the necessity of the use of leather, an extremely durable, neat appearing, and inexpensively constructed shoe.

Experimental wear of the shoe has demonstrated that the wearing qualities of a shoe, so constructed, are equal or in excess of a shoe provided with the usual leather sole of comparable thickness. It is also apparent that by forming the blank 1 of relative hard material, the shoe when worn will protect the foot of the wearer, as the outer layer of the outsole takes the usual impact of objects experienced in walking, and that by forming the inner blank 2 of the filler for the outsole of a somewhat softer fibre material, a cushion effect for the ball of the foot is provided.

Likewise, it will be understood that the outsole may be easily replaced when worn, because the worn outsole unit may be readily removed and a new outsole unit cemented in place without damage to the remaining elements of the shoe.

It is, therefore, apparent that the objects of the invention are fully accomplished by the provision of combination of elements forming the shoe.

What I claim and desire to secure by Letters Patent is:

1. In a shoe, the combination with a lasted upper attached to an insole; of an outsole, comprising a fibre filler and a bottom and edge cover for said filler, including a relatively thin flexible plastic sheet material, and a fabric marginal strip attached thereto, said sheet covering the bottom of the filler and said marginal strip being securely connected to the upper marginal edge of the filler, and means for securing the outsole to the insole of the lasted upper.

2. In a shoe construction, the combination with a lasted upper attached to an insole; of an outsole comprising separate blanks secured together, the upper one of which is relatively soft in respect to the degree of hardness of the lower layer, and a bottom and edge cover for the filler comprising a relatively thin flexible plastic blank dimensioned to cover the bottom and edge of the filler, said plastic blank having seamed thereto a fabric marginal strip cemented to the marginal edge of the upper blank of the filler; and means for securing the outsole to the insole comprising a cement layer.

3. In a shoe construction, the combination with a lasted upper secured to an insole; of an outsole unit attached to said insole, said outsole comprising a filler including an inner and outer blank, the outer blank being formed from relatively stiff hard fibre material and the inner blank of relatively soft fibre material, said inner blank being inset from the margin of the outer blank thereby forming a recess, and a bottom and edge cover for said filler including a relatively thin sheet of durable flexible plastic material, and a fabric marginal strip seamed thereto, the parts of the outsole being so dimensioned that the marginal strip may be cemented to the upper marginal edge of the inner blank, and the plastic blank fitted against the bottom of said filler, with the seam between said plastic blank and said marginal strip seating in the recess, at the joint between the blanks of the filler.

4. In a shoe construction, an outsole unit adapted to be applied to a lasted upper, comprising two blanks contoured for the shoe sole and having a mitered recess joint at their connecting margins, a cover for said filler including a relatively thin plastic sheet formed to cover the bottom of the filler, and a portion of the marginal edge thereof, and a fabric marginal strip secured to said plastic sheet by seaming, and said marginal strip secured to the upper marginal edge of the filler, and the seam seating in the mitered recess between the filler blanks.

5. In a shoe, the combination with a lasted upper attached to an insole; of an outsole, comprising a filler formed of relatively rigid material adapted to resist impact of objects stepped upon by a wearer of the shoe, and a bottom and edge cover for said filler, including a relatively thin flexible plastic sheet material, and a fabric marginal strip attached thereto, said sheet covering the bottom of the filler and said marginal strip being securely connected to the upper marginal edge of the filler, and means for securing the outsole to the insole of the lasted upper.

VALENTINE M. HECK.