Feb. 2, 1926. 1,571,798

J. D. PRICE ET AL

SHOE AND METHOD OF MAKING

Filed May 29, 1924

Fig. 1.

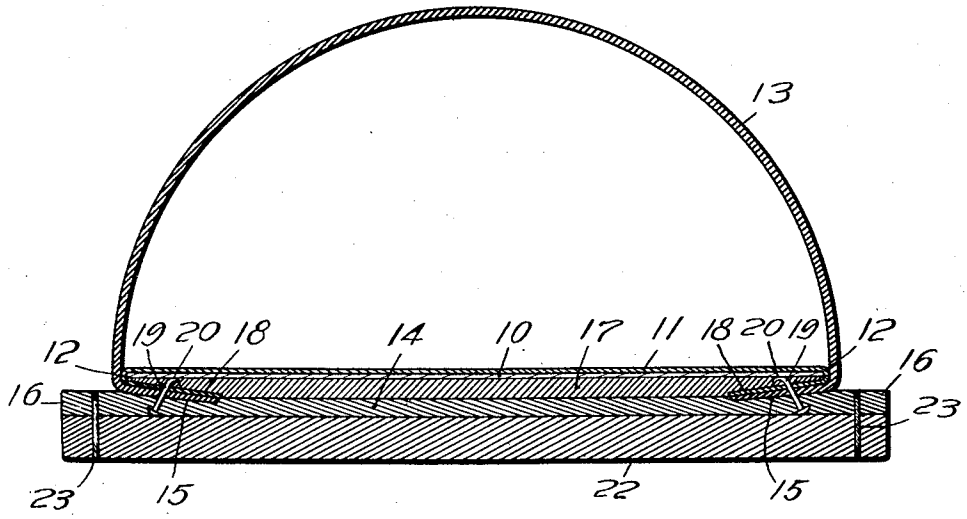


Fig. 2.

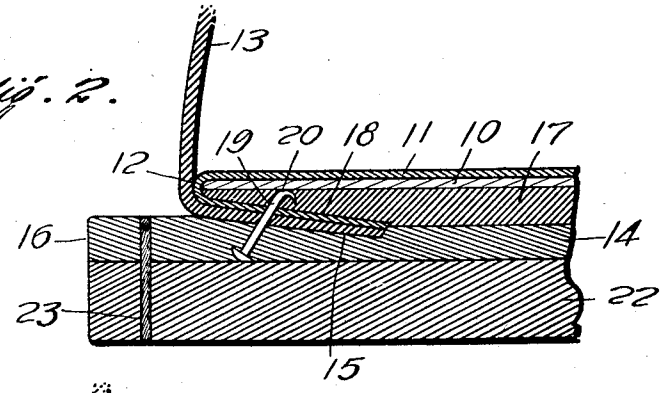
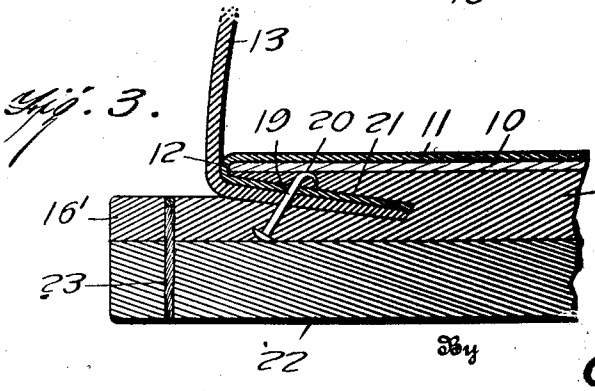


Fig. 3.



Inventors
JOHN D. PRICE,
AND WALTER H. DRAKE,
By
Attorney

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UNITED STATES PATENT OFFICE.

JOHN D. PRICE AND WALTER H. DRAKE, OF CLEVELAND, OHIO.

SHOE AND METHOD OF MAKING.

Application filed May 29, 1924. Serial No. 716,653.

To all whom it may concern:

Be it known that we, JOHN D. PRICE and WALTER H. DRAKE, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Shoes and Methods of Making, of which the following is a specification.

This invention relates to shoe construction and has for an object to provide a shoe of improved type and method of making the same.

A further object of the invention is to provide a shoe embodying a metallic inner sole with improved means for attaching the upper and other related parts to the sole without perforating the metal inner sole.

A further object of the invention is the method whereby the attaching means consisting of nails or other penetrating members are inserted through certain of the leather or fabric parts and to clinch by engagement with and against the metal inner sole.

With these and other objects in view, the invention comprises certain novel steps in the process and certain novel parts, elements, units, combinations, interactions and functions of the article as disclosed in the drawings together with mechanical and functional equivalents thereof and of the process involved as will be hereinafter more fully described and claimed.

In the drawings:

Figure 1 is a transverse sectional view through the body of a shoe, as for instance across the ball of the foot showing in section the sole organization and the means of attaching.

Figure 2 is an enlarged detail view of one side of the attachment.

Figure 3 is an enlarged detail view of a modification.

Like characters of reference indicate corresponding parts throughout the several views.

The improved shoe, which, together with its method of manufacture, forms the subject matter of this invention, comprises as a foundation an inner sole 10 of some material analogizing metal of a relatively rigid construction attenuated to resiliency so that in its preferred form the inner sole would resemble a thin plate of highly tempered spring steel, it being understood, of course, that all equivalents are included in the present invention.

This metallic plate is covered with an insulating cover 11 which will preferably be some type of leather, fabric or other flexible sheet material being folded at the edges as indicated at 12 about the margins of this metallic inner sole. An upper, indicated conventionally at 13, is employed and the showing of this upper as a single thickness of material is not intended as any limitation upon the use of lining material or other usual and ordinary or preferred combinations whereby the upper conforms to requirements or meets the desideratum of users.

An insole 14 is employed which in the type shown at Figures 1 and 2 is skived down adjacent the edges as indicated at 15 so that the middle or interior part of said insole is thinner than the marginal edges indicated at 16 which serve the purpose of a welt strip as will be hereinafter more fully described. In this type of shoe, a filler 17 is employed, the edges of which are skived at 18 complementary to the skiving 15 and between which skived portions the inturned edges of the fabric 11 and the upper 13 are embraced. Penetrating members, indicated in the drawings as nails 19, are employed by being driven through the insole 14, through the inturned edges of the upper and insulating fabric, through the filler and against the metal plate 10, preferably at an inclination as indicated at Figures 1 and 2 so that the end tends to clinch as indicated at 20, it being obvious, of course, that for this operation a last will be within the shoe so that the thin metal plate 10 will have a firmer support for the clinching operation. As shown in this figure, the clinch 20 occurs in the filler 17.

In the type shown at Figure 3, the insole 14′ is not skived down to be thinner at the interior than the exterior, in fact may be the same thickness or slightly thicker, as indicated at said Figure 3 and the marginal edges provided with a slot 21 into which the inturned edges of the fabric liner and the upper are inserted the same as between the insole 14 and the filler 17. When so inserted, the nail 19 or other penetrating member is driven the same as shown at Figures 1 and 2 clinching at 20 the same as in the process method. This type does away

with the lamination of the filler and insole and provides a similar welt margin 16'. To this welt margin 16 or 16' the outer sole 22 is sewed in the usual manner by the stitches 23.

As hereinbefore stated, the penetrating members which secure these parts together seem at the present time to point to a preference for headed nails with attenuated points which clinch as indicated, but it is to be understood that further use of the invention may indicate the desirability of other or different type of penetrating members and the invention is broad enough to include any such penetrating members as are inserted upon such an inclination relative to the plane of the metallic insole as to be clinched by their insertion and thereby secure all of the several parts together in a permanent, inseparable organization.

It is again emphasized that by this construction the metallic plate 10 is held in position in the shoe by the insulating liner 11 which protects the foot from radiation from the metallic plate as one of its principal functions, while another and fully as important function is that its margins inturned serve to receive the penetrating members whereby the metallic plate is secured in the organization without penetrating or perforation and the upper likewise and simultaneously secured in its proper relation. The construction of the insole in the lamination form or in the integral form is a matter of choice or expediency.

What we claim to be new is:

1. The method of making a shoe consisting in folding the marginal edge of an insulating fabric about the marginal edge of an imperforate sole member composed of rigid material attenuated to resiliency, inserting said marginal edge together with the marginal edge of the upper between spaced parts of an insole organization with the resilient plate resting directly upon said organization and inserting penetrating members at an inclination through said insole organization, the inserted edges of said insulating fabric and upper, and clinching by impingement against the under side of said resilient sole member.

2. The method of making a shoe consisting in folding the marginal edge of an insulating fabric about the marginal edge of a sheet of material cut to the proper dimensions of the shoe, composed of rigid material attenuated to resiliency, folding said edge into an interstice adjacent the edge of an insole structure together with the marginal edge of the upper and inserting penetrating members through said structure including said inturned edges, and clinching said penetrating member against the under side of said attenuated resilient sole member into and holding in said insole structure.

3. A shoe construction, comprising an insole structure having adjacent its marginal edge an interstice directed toward the interior of the structure, a plate disposed upon said structure composed of rigid material attenuated to resiliency, an insulating covering for said plate having its edge inserted into said interstice, an upper having its marginal edge inserted into said interstice together with the marginal edge of said insulating material, and a penetrating member inserted through said structure and said marginal edges and having a clinch formed against the under side of said resilient plate and occupying a position within the material of said structure.

4. A shoe construction comprising an insole properly proportioned to employ its marginal edge as a welt, a filler disposed upon the insole and smaller in area than the insole, a plate disposed upon the filler of substantially the same area, composed of rigid material attenuated to resiliency, an insulating sheet disposed upon the attenuated rigid member and having its marginal edge turned under and inserted between the filler and the insole, an upper having its marginal edge inserted between the filler and the insole along with the marginal edge of the insulating sheet, penetrating members inserted at an angle to the plane of the attenuated plate, and a clinch formed upon said penetrating member against said attenuated member, and disposed within the material of the filler, said penetrating member being inserted through the inturned marginal edges of the insulating sheet and upper.

In testimony whereof we affix our signatures.

JOHN D. PRICE.
WALTER H. DRAKE.