May 22, 1934. G. G. RICH 1,959,876

METHOD OF MAKING SANITARY INNERSOLES

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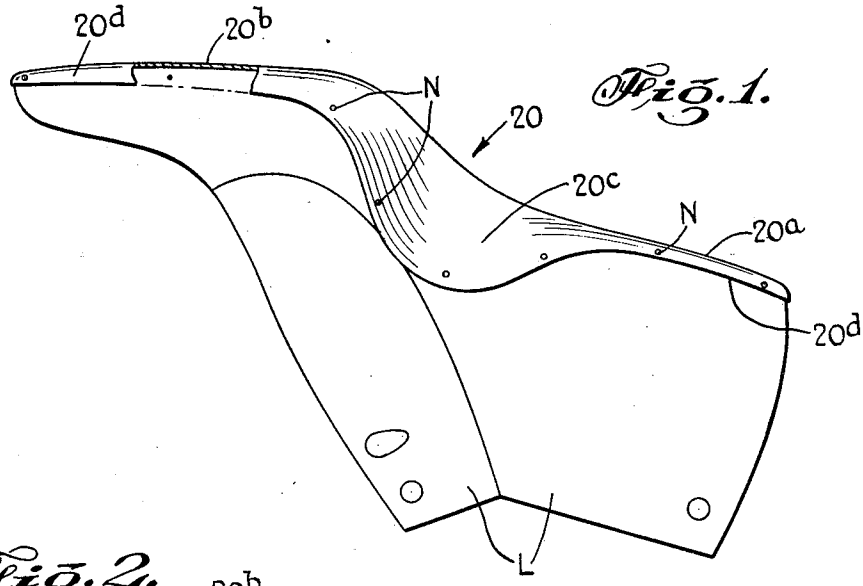


Fig. 1.

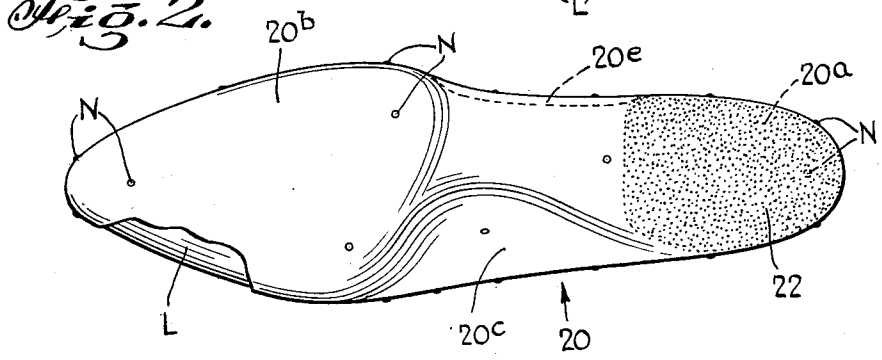


Fig. 2.

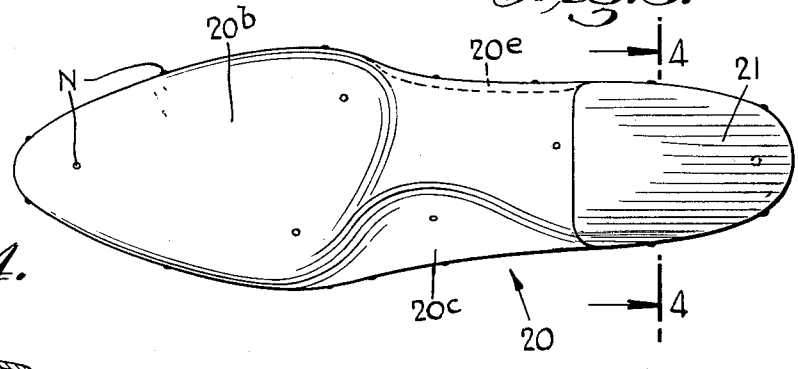


Fig. 3.

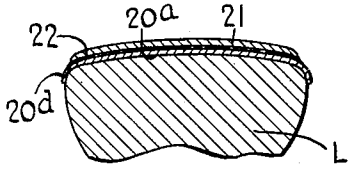


Fig. 4.

INVENTOR
George Gerry Rich
BY
Louis Barnett.
ATTORNEY

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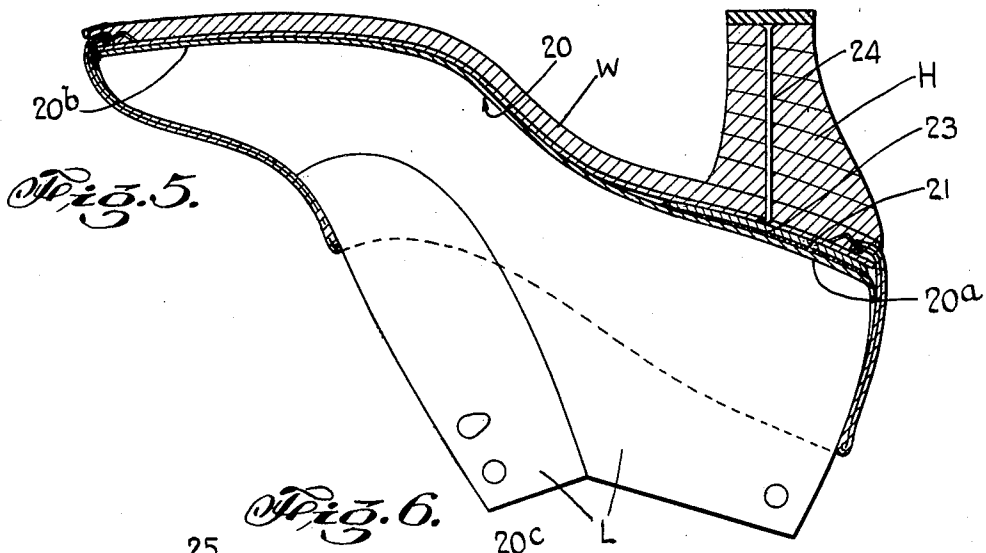
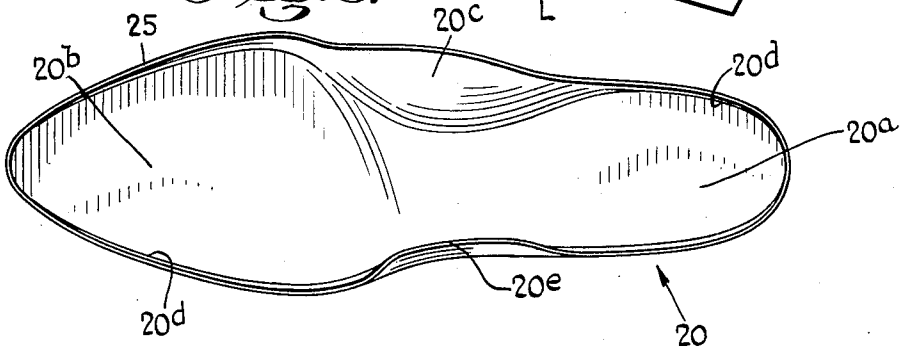


Fig. 5.

Fig. 6.



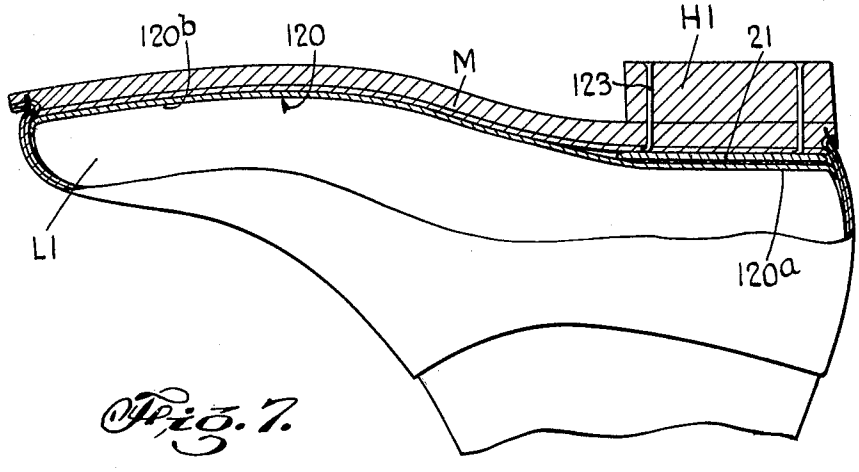


Fig. 7.

INVENTOR
George Gerry Rich
BY
Louis Barnett.
ATTORNEY

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Fig. 8.

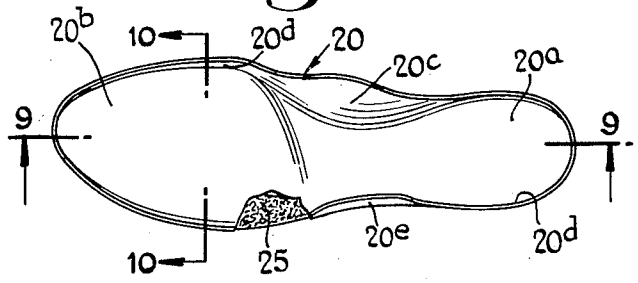


Fig. 9.

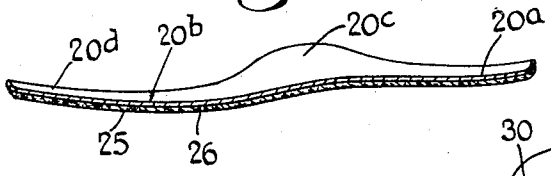


Fig. 10.

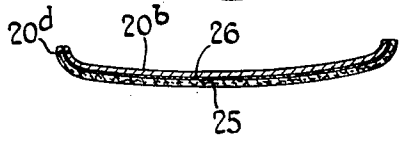


Fig. 12.

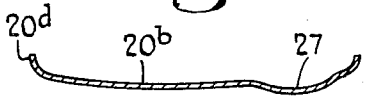


Fig. 17.

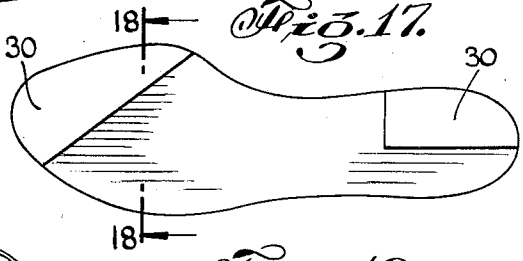


Fig. 11.

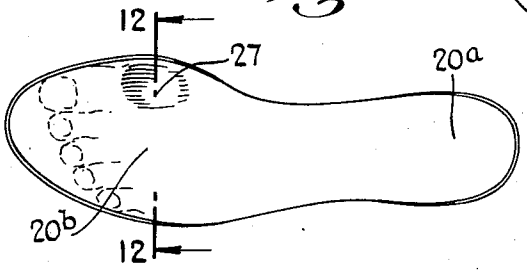


Fig. 18.

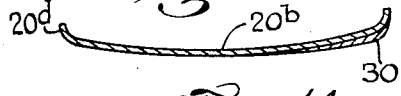


Fig. 13.

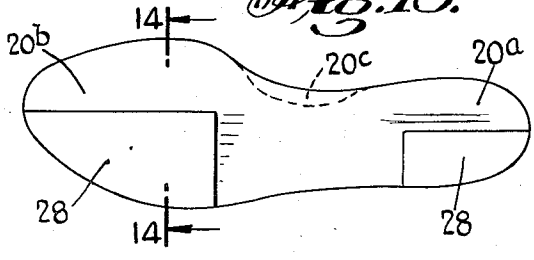
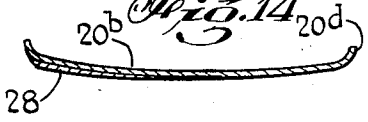


Fig. 14.



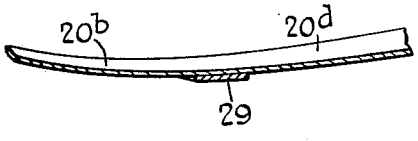
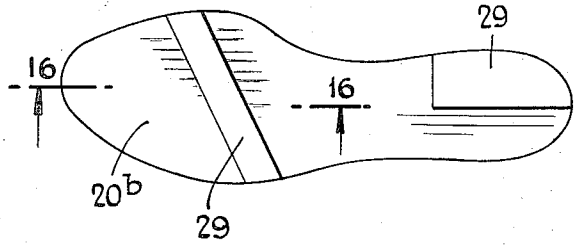


Fig. 16.

Fig. 15.



INVENTOR
George Gerry Rich
BY
Louis Barnett.
ATTORNEY

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UNITED STATES PATENT OFFICE

1,959,876

METHOD OF MAKING SANITARY INNERSOLES

George Gerry Rich, Bronx, N. Y.

Application September 26, 1932, Serial No. 634,891

1 Claim. (Cl. 12—142)

This invention relates to an improved sanitary innersole for shoes and the method of making same. More particularly, the invention is directed to an innersole which is removable for cleansing and aeration and is readily formed into an orthopedic appliance in a shoe.

Among the objects of the invention is to generally improve innersoles of the character described and the method for making same whereby such innersoles shall comprise few and simple parts, which are made and assembled by a novel method which, shall be cheap to manufacture yet readily adapted to orthopedic foot requirements and which shall be practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the constructions hereinafter described and of which the scope of application will be indicated in the following claim.

In the accompanying drawings, in which is shown various possible illustrative embodiments of this invention.

Figs. 1 and 2 are side and top plan views showing an innersole formed on a last, the first step in practising the invention.

Fig. 3 is a top elevational view showing the heel plate secured in place prior to inserting the last and sole into the shoe.

Fig. 4 is a cross-sectional view taken on lines 4—4 in Fig. 3.

Fig. 5 is a longitudinal sectional view of a shoe showing the last and innersole member forming a unitary form of a woman's shoe.

Fig. 6 is a top or plan view of the improved innersole member removed from the shoe.

Fig. 7 is a view similar to Fig. 5 showing the method of practising the invention for making a man's shoe.

Fig. 8 is a plan view of an improved innersole member formed with a resilient backing layer.

Figs. 9 and 10 are cross-sectional views taken on lines 9—9 and 10—10 in Fig. 8.

Fig. 11 is a plan view of the improved innersole member having certain parts of the sole region shaped to conform to abnormal contour of a foot.

Fig. 12 is a cross-sectional view taken on lines 12—12 in Fig. 11.

Figs. 13, 15 and 17 are plan views of the improved innersole members provided with wedge pieces and showing examples of the invention for use as orthopedic appliances for feet, and

Figs. 14, 16 and 18 are cross-sectional views corresponding to cuts taken on lines 14—14, 16—16 and 18—18 in Figs. 13, 15 and 17, respectively.

Referring in detail to the drawings, 20 denotes an innersole member constructed in the manner hereinafter described to embody the invention. Said innersole member is preferably formed of leather, such as pig skin, cut into shape, suitably treated for softening, conformed and secured to a last L by nails N in the well understood manner. Said innersole member 20 as seen from Figs. 1 and 2 when fixed to the last L comprises portions that entirely cover the heel, sole and arch regions 20*a*, 20*b* and 20*c*, respectively. Said innersole member preferably is formed with a shallow flange 20*d* on the upper side thereof and extending along the edge thereof. Preferably, a part 20*e* of said flange extends on the edge opposite the arch region 20*c* to cooperate with the latter for reinforcing the grip of the shoe about the arch of the wearer's foot.

After the innersole member 20 has been shaped to conform to the last L and attached thereto by the nails N, a flat thin steel heel plate 21 may be secured to extend over the under side of the heel region 20*a* by means of a suitable adhesive 22 or otherwise, as is clear from Figs. 2, 3 and 4.

The next step in the method, as shown in Fig. 5, is to form a woman's shoe structure W over the last and the innersole member 20 so that said shoe structure is sized to include both said last L and member 20. The plate 21 serves to upset, as at 23, the leading end of the nails 24 which secure the heel H to the shoe structure W.

The last L and the innersole member 20 may be now removed from the shoe structure W and the plate 21 detached from the last. The innersole member 20 when so detached from the last L provides an improved sanitary innersole member which in use can be readily removed from the shoe for cleansing and aeration.

Preferably, the rear of the bottom side of the innersole member 20 is covered with a felt or a flannel layer 25, the same preferably being secured by an adhesive 26, such as rubber cement. This felt layer 25 serves as a resilient cushion for the innersole member in the shoe.

In the form of the invention above described it should be noted that the innersole member 20 is made during the manufacturing process in making the shoe structure W and conforms exactly

to the interior heel, sole and arch surfaces of the shoe. In fact said member is form-fitting and custom made for the particular shoe structure W.

In Fig. 7 is shown a man's shoe structure M formed over a last L1 and an innersole member 120 embodying the invention, said member 120 being applied to the last L1 prior to fitting the shoe structure M thereon in the same manner as described above for the manufacture of the woman's shoe structure W with the last L and innersole 20. Here again the steel plate 21 may be used over the heel region 120*b* of the member 120 for upsetting the ends of the nails 123 which secure the heel H1 to the shoe structure M.

In Figs. 8, 9 and 10 there is shown one of the preferred forms of innersole members 20 embodying the invention and constructed with a felt cushioning layer 25.

The use of the invention will now be apparent. After a shoe W or M has been made on a last the innersole 20 or 120 is also completed and can be removed from the shoe for cleansing or aeration and which conforms exactly to the interior sole, heel and arch surfaces of such shoe. Such innersole members are form-fitting and custom made, therefore needs no breaking in, and to a normal foot provides a comfortable fit.

As an orthopedic foot appliance the improved innersole member 20 or 120 lends itself readily to reshaping so as to conform to abnormal foot contours. Thus as seen from Figs. 11, 12 and 13, the sole region 20*b* may be depressed at various portions, such as at 27, to accommodate an enlargement or extended joint of a foot. In a similar manner any other regions of the innersole member may be altered or modified to suit the particular requirements. The invention also contemplates a ready means for applying raised or elevated portions to various regions of the innersole member by means of permanently attaching so-called wedge pieces. Examples of such constructions are shown in Figs. 13 to 18, inclusive.

In Figs. 13 and 14, is shown the improved innersole member formed with raised portions at the sides of the sole region 20*b* and heel region 20*a* by means of the permanently attached wedge pieces 28, said construction may be used as an orthopedic appliance to tip the weight to the outside for relieving pressure on the long arch and to straighten the ankle.

In Figs. 15 and 16, raised portions across the sole region and the side of the heel region are provided by the permanently attached wedge pieces 29 forming an orthopedic appliance to tip the ankle to the outside and to raise the heads of the metatarsal bones. Likewise in Figs. 17 and 18, is shown elevated portions in the sole and heel regions by means of permanently secured wedge pieces 30 to force toeing in. In a similar manner the improved innersole member may be constructed to form orthopedic appliances to conform to any requirement. The bearing surface for the foot in each case is smooth and the elevated or raised portions of the foot regions are permanently located by providing fixedly secured wedge pieces on the underside of the innersole member. It is to be understood that each of such innersole member orthopedic appliances may also include a felt layer, such as shown at 25 in Figs. 8, 9 and 10 to increase the cushioning effect.

It will thus be seen that there is provided a device whereby the several objects of this invention are achieved and which are well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

A shoe manufacturing method of the type described comprising the steps of applying an innersole member to the sole, heel and arch surfaces of a last, applying a metal plate to the heel portion of said innersole member, building a shoe over said metal plate, innersole member and last in assembled relation leaving said innersole member and plate detached from the shoe for removal.

GEORGE GERRY RICH.