Dec. 1, 1931. R. T. GRIFFITHS 1,834,582

METHOD OF MANUFACTURING VULCANIZED SHOES

Filed Aug. 7, 1929 2 Sheets-Sheet 1

Fig. 1.

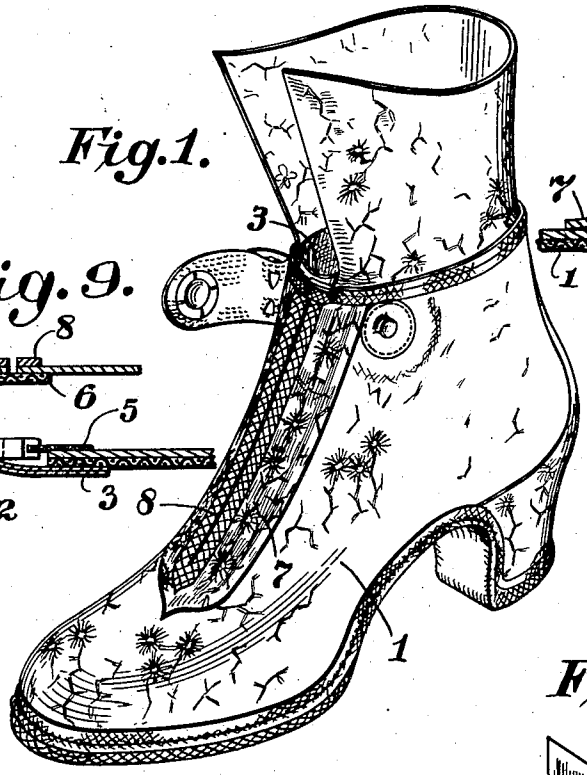


Fig. 10.

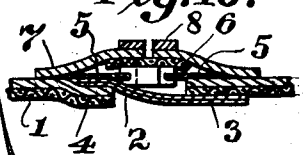


Fig. 9.

Fig. 8.

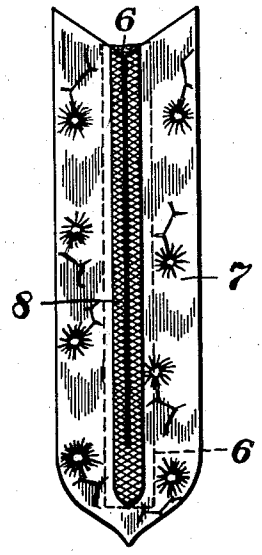
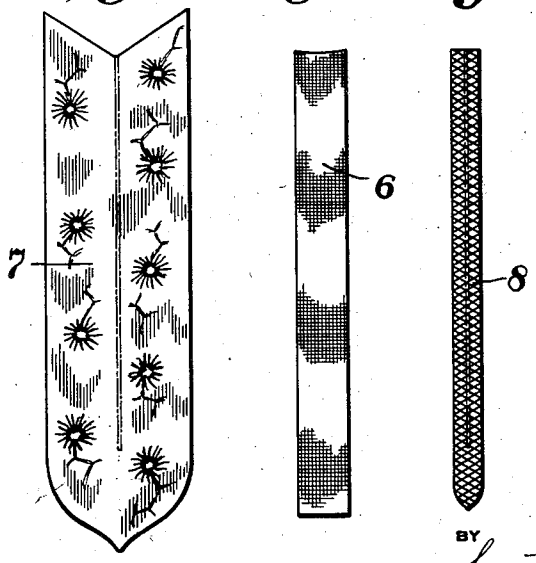


Fig. 5. Fig. 6. Fig. 7.



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METHOD OF MANUFACTURING VULCANIZED SHOES

Filed Aug. 7, 1929 2 Sheets-Sheet 2

Fig. 2.

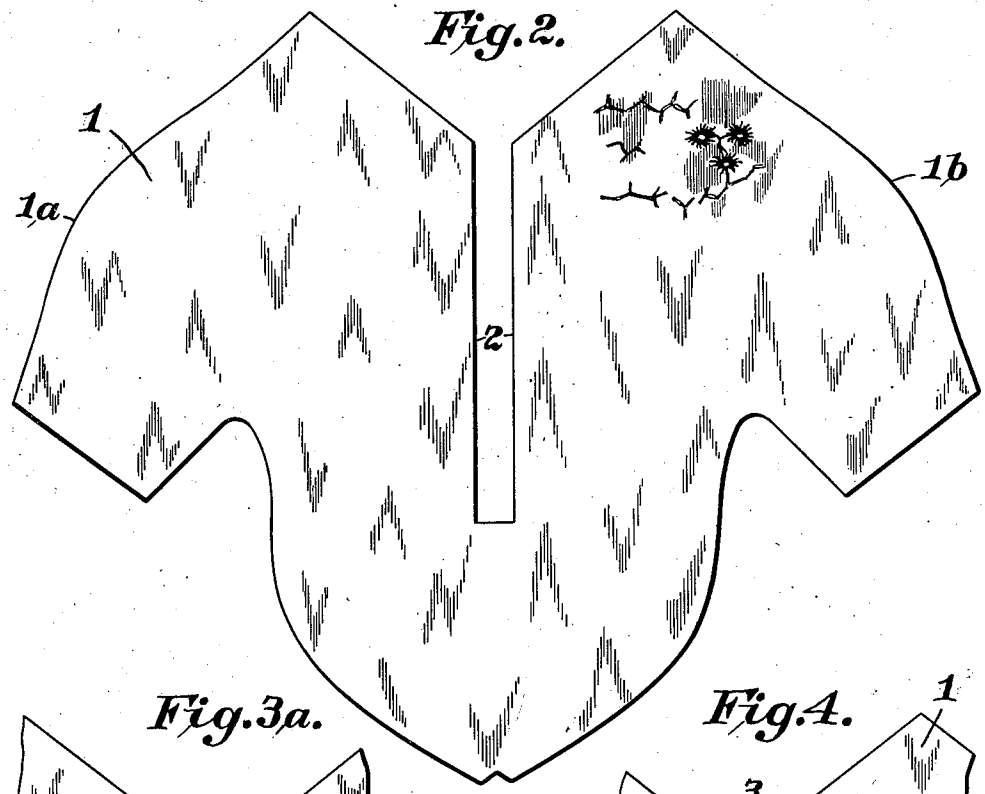


Fig. 3a.

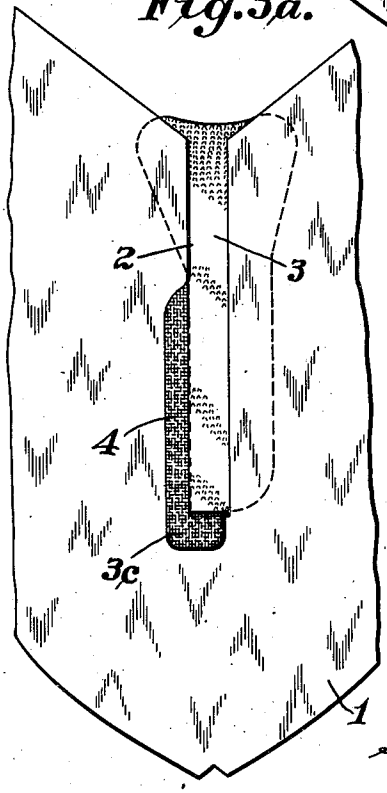


Fig. 3.

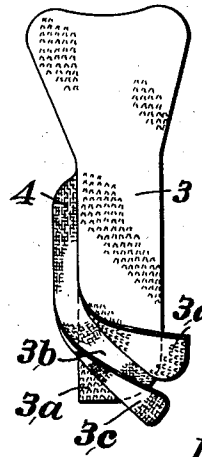
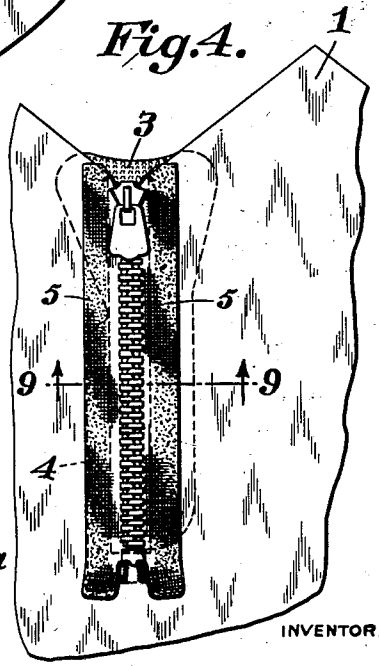


Fig. 4.



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Patented Dec. 1, 1931 1,834,582

UNITED STATES PATENT OFFICE

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METHOD OF MANUFACTURING VULCANIZED SHOES

Application filed August 7, 1929. Serial No. 384,047.

My invention relates to light-weight vulcanized shoes preferably having as a closing means for the front vent opening a slide type of fastener, and is concerned particularly with the vent opening of the shoes and the parts associated therewith.

The invention consists in a method of manufacture and particularly in the production of certain assemblies which enables a pleasing and highly satisfactory shoe to be made, on a commercial scale, at a low cost.

The invention is illustrated in the accompanying drawings, wherein

Fig. 1 is a perspective view of the complete shoe, produced in accordance with my invention.

Fig. 2 is a plan view of the main blank which includes the vamp and quarters.

Fig. 3 is a plan view showing the tongue.

Fig. 3*a* is a plan view of the tongue applied to the upper.

Fig. 4 shows in plan the main assembly.

Fig. 5 is a plan view of the vent fly blank.

Fig. 6 is a plan view of the backing strip for the vent fly blank.

Fig. 7 is a plan view of the trimming strip for the vent fly blank.

Fig. 8 is a plan view of the fly assembly, with the width of slit exaggerated.

Fig. 9 is a cross section on line 9—9 of Fig. 4, and showing the composite fly strip of Fig. 8 before assembly therewith, and

Fig. 10 is a similar view, but with the fly strip rolled down into place, ready for applying to the shoe last.

In the method herein described for the purpose of disclosing the invention, the main blank consists of two superimposed complemental sheets; one, a thin, unvulcanized rubber sheet, and the other an elastic and flexible fabric sheet, the two being in adhering face to face contact. In the complete shoe the fabric sheet forms a lining.

This composite blank, or sheet, 1 is shaped to form the vamp and quarters, which includes portions of the heel of the shoe, and is preferably applied to a last after other portions have been associated therewith, as will be hereinafter described. A vent opening 2 is cut in the sheet 1 approximately at the middle of the same, and extends from the vamp through the upper edge of the sheet.

A tongue 3, preferably made relatively stiff and preferably comprising outer strips 3*a* of lining fabric, and an interposed friction fabric strip 3*b* conforming in shape to strips 3*a*, but having at one side a lower marginal portion 4 projecting beyond the contiguous edges of the strips 3*a* and constituting a tab 3*c*, is adhesively connected to the unlined outer face of the upper 1, contiguous to one edge of the vent opening therein. The remaining portion of the tongue is left free.

The major portion of the tongue is then passed through the vent opening to bring it on the lined inner side of the unit 1.

The stringers 5 of a slide fastener are then pressed into adhering contact with the unlined outer face of blank 1, forming the marginal portions of the vent opening, and the exposed marginal portions 4 and 3*c* of the tongue. This completes the main assembly of the shoe.

The fly assembly consists of an unslit strip 6 preferably formed of friction fabric, a fly strip 7 of sheet rubber, and a trimming strip 8 of a somewhat thicker rubber.

The strip, or blank, 7 is in length somewhat greater than that of the vent opening, and is in width somewhat greater than the distance between the outer lengthwise edges of the stringers 5 of the fastener.

The trimming strip, or blank, 8 is preferably formed from a sheet of somewhat heavier material than strip 7, is in length somewhat less than the latter, is much narrower than the same, and is pressed in adhering contact with the middle part thereof. Thereafter the two strips are slit lengthwise from the upper corresponding ends of the same to a point adjacent the lower end of the trimming strip. Thereafter the slit edges are held slightly spaced apart to prevent readhering thereof, and the strip 6 is pressed into adhering contact with the opposite or back face of the strip 7 to thus hold the slitted fly strip in proper relation to prevent stretching.

The strip 6 is in width preferably somewhat less than that of strip 7, and parts of

the latter are left exposed adjacent the lengthwise edges of strip 6.

This completes the fly strip assembly, as shown in Fig. 8.

The next step in the process is preferably that of applying the fly assembly to the main assembly, this preferably being done before the latter is applied to the last, although it may be done at any stage prior to vulcanization.

In applying the fly assembly to the main assembly, the latter is preferably placed on a flat surface with the lining facing down and the slide of the fastener in closed position. Then the adjacent portions of sheet 7 are pressed in adhering contact with the outer marginal edge portions of the stringers and the adjacent portions of the face of blank 1. It will be understood that the margins only of the stringers have been previously coated with a rubber cement to insure adhesion of the fly strip only along these marginal areas and not at the center.

The complete assembly is preferably then placed on a last and after the edges 1*a*, 1*b* of unit 1 have been connected along the back of the last and the other shoe parts applied, the article is subjected to a vulcanizing operation.

Upon the removal of the shoe from the vulcanizer, the fabric strip 6 of the fly assembly is cut in register with the slits in the strips 7 and 8, and the slide of the fastener is then moved for disengaging the interengaging members of the fastener, and the vent opening is spread and the shoe removed from the last.

The relatively inextensible lining strip 6 of the fly assembly adds to the stability of the marginal edge portions thereof and serves, during the vulcanizing step, to hold these marginal edge portions in proper position.

The attachment of the lower part only of one marginal edge of the tongue to a contiguous marginal edge portion of the vent opening results, when the slide of the fastener is manipulated to close the vent, in the self-centering of the upper free end of the tongue in reference to the vent opening.

If the tongue is attached throughout substantially its full length along one edge to a marginal edge portion of the vent, it will move laterally only therewith, and during the final closing movement of the vent there is often sufficient pressure on the tongue transverse to its direction of movement in the closing of the vent, to cause the upper unattached corner thereof to catch in the stocking and tear the same. This is particularly apt to occur when the tongue is made of relatively stiff material and has been given a preformed concavo-convex shape at its upper end.

Attached as contemplated by me, the upper end of the tongue will have centered itself in its final position before the vent is closed sufficiently to put pressure inwardly upon the upper part of the tongue.

The strip 6 is frictioned only on the face which contacts with the fly strip 7, so that it will not adhere to the stringers.

I claim:

1. In the manufacture of a shoe, the production of a fly assembly by providing a substantially long, narrow, sheet rubber strip, applying to one face thereof a narrow trimming strip, slitting the two lengthwise and while the edges of the slit are in close juxtaposition, applying to the opposite face of the first named strip an unslitted strip of approximately the shape of said first named strip.

2. In the manufacture of a shoe, the production of a fly assembly by providing a substantially long, narrow, sheet rubber strip, applying to one face thereof a narrow trimming strip, slitting the two lengthwise and while the edges of the slit are in close juxtaposition, applying to the opposite face of the first named strip an unslitted fabric strip of approximately the shape of said first named strip.

3. In the manufacture of a shoe, the production of a fly assembly by providing a substantially long, narrow, sheet rubber strip, applying to one face thereof a narrow trimming strip, slitting the two lengthwise and while the edges of the slit are in close juxtaposition, applying to the opposite face of the first named strip an unslitted, relatively inextensible reinforcing strip.

4. In the manufacture of a shoe, providing a blank with a vent opening, applying to the lower marginal portion only of one edge of said opening a lower marginal edge portion of a tongue, leaving the remainder of the edge unattached, and then applying to the marginal edges of the vent the stringers of a slide fastener.

5. In a vulcanized shoe, a tongue comprising a friction fabric strip, and unfrictioned fabric strips applied to the opposite faces thereof, the first named strip having a portion projecting beyond the lower part of one edge of the tongue for providing a tab for the attachment of the tongue to the lower marginal portion of one edge of the vent opening.

6. In an elastic shoe upper having a vent opening at the front thereof and progressive closing means of the slide-fastener type associated with said opening, a stiff tongue attached to the shoe along one side of said opening only to the extent of partial progressive movement of said closing means whereby the tongue is finally centered in advance of complete closing of the upper.

7. In an elastic shoe upper having a vent at the front thereof, progressive slide-fastener closing means for said vent, a stiff tongue attached to the shoe below the vent

and along one vent-defining margin of the shoe to a point substantially midway of its extent, the tongue being without attachment to the other vent-defining margin.

8. In a shoe, an elastic upper having a pair of separable opposed margins defining an opening in the front portion thereof, fastening elements located on said margins, a slider designed to interlock said fastening elements and simultaneously draw together the separable margins, a stiff tongue underlying the opening and secured to the shoe at the junction of said margins and along one of said edges to a substantially medial point relative to the travel of said slider and not attached to the other margin.

9. In a shoe, an elastic upper having a pair of separable opposed margins defining an opening in the front thereof, fastening elements located along said margins, a slider adapted to progressively stretch the upper and interlock said fastening elements, a stiff tongue underlying the opening when the fastening elements are interlocked and secured to the upper at the junction of said margins and to one of said margins at an intermediate point relative to the travel of the slider, and unattached to either margin above said point, whereby lateral movement of the tongue during the closing of the opening is limited by movement of its point of marginal attachment to the upper.

In testimony whereof, I affix my signature.

RICHARD T. GRIFFITHS.