July 27, 1954 H. C. LEVY 2,684,540

SHOE COUNTER

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Fig. 1.

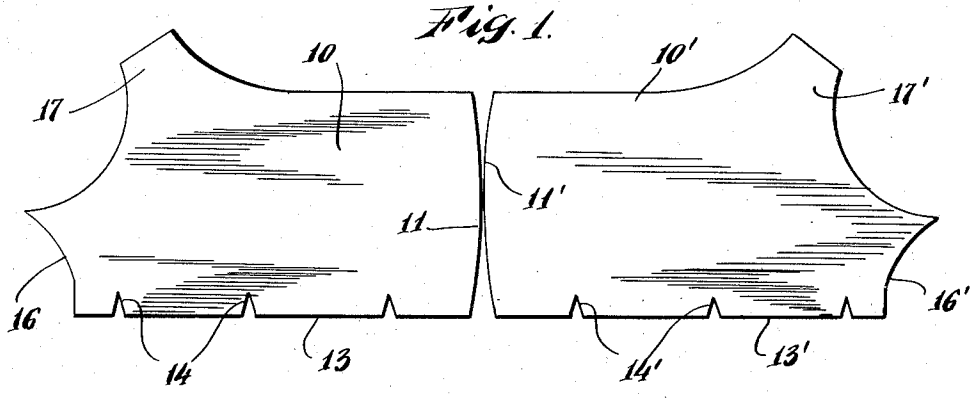


Fig. 3.

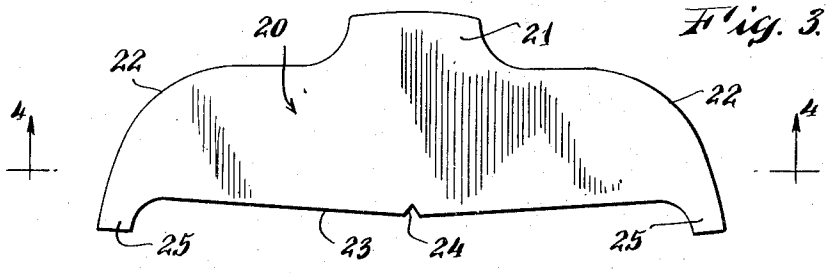


Fig. 4.

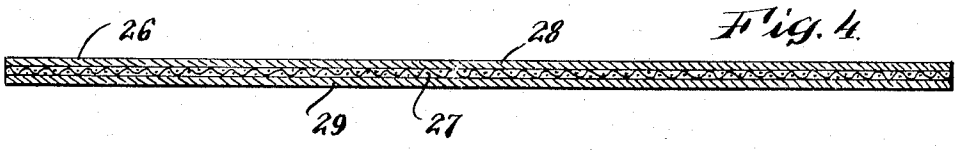


Fig. 2.

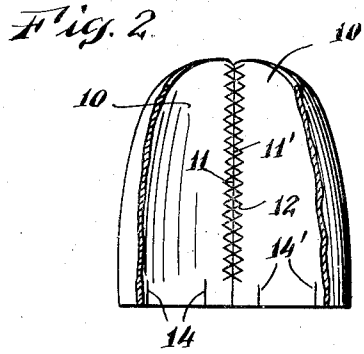
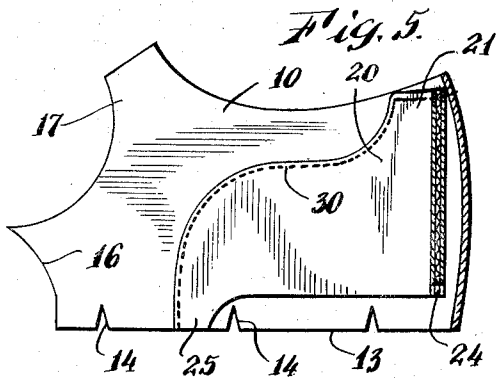


Fig. 5.



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Fig. 6.

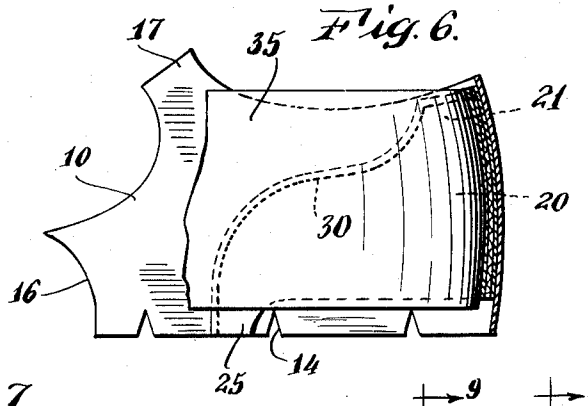


Fig. 7.

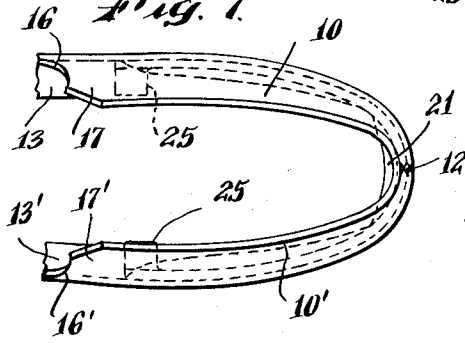


Fig. 8.

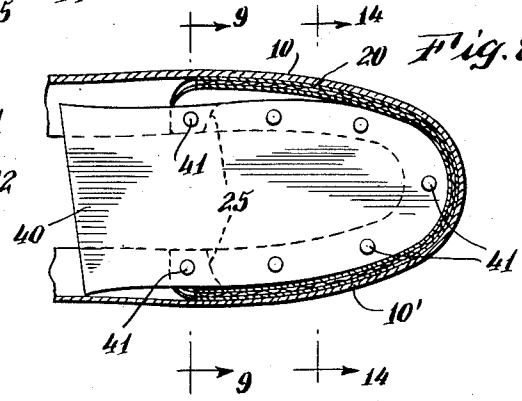


Fig. 9.

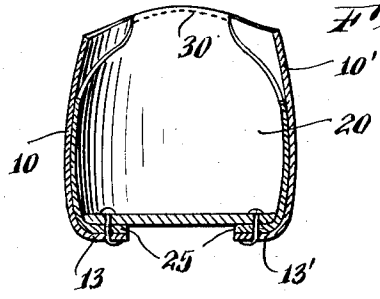


Fig. 10.

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Fig. 11.

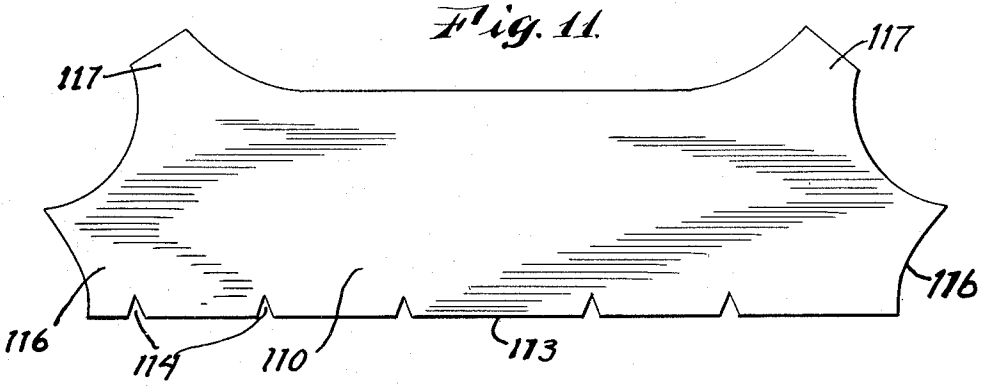


Fig. 12.

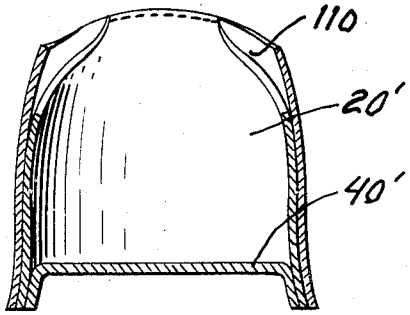


Fig. 13.

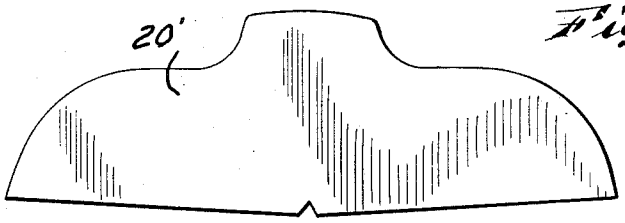
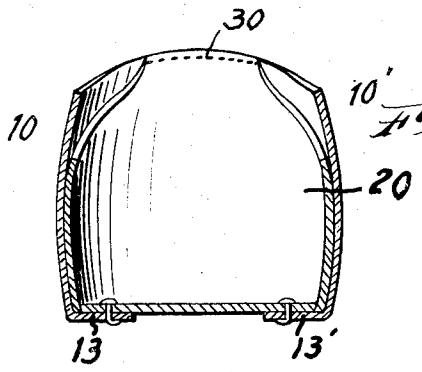


Fig. 14.



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2,684,540

SHOE COUNTER

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Application July 1, 1950, Serial No. 171,594

2 Claims. (Cl. 36—68)

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This invention relates to the manufacture of shoes and, more particularly, to a novel shoe counter and a novel method of assembling the counter with the upper.

In the present manufacture of shoes, the counters are usually pre-formed members of relatively stiff fibreboard or the like. Each counter comprises a horseshoe curved vertical wall having an inturned horizontal flange along its lower edge. The counters are assembled with the rear quarter of the upper by insertion of the vertical wall between the upper and its lining, the counter frequently being then cemented in place.

With this procedure, it is very difficult to provide a counter whose surface conforms to the compound curved surface of the last. As a result, the lining overlying the counter wrinkles and frequently does not have a conforming fit to the wearer's heel, particularly after the shoe has been worn for some time.

The present invention has, as one feature, an improved counter of thermoplastic material impregnated fabric which may be shaped under heat and pressure to conform exactly to the compound curved inner surfaces of the last. One surface of the counter has a thermoresponsive adhesive thereon for adhesion of the counter to the upper. The other counter surface may, if desired, have a suitable finish thereon, whereby the counter may be left uncovered within the quarter. A pair of tabs on the lower edge of the counter, adjacent its ends, enable the counter to be secured to the insole after the counter is "drawn in" around the rear end of the insole. Another feature of the invention is an improved method of constructing shoes embodying the novel counter.

For an understanding of the principles of the invention, reference is made to the following detailed description of a typical embodiment thereof as illustrated in the accompanying drawings. In the drawings:

Figs. 1 and 2 are elevation views illustrating two successive steps in forming the shoe quarter.

Fig. 3 is an elevation view of the invention counter.

Fig. 4 is an enlarged, somewhat exaggerated, longitudinal sectional view of the counter.

Fig. 5 is a longitudinal sectional view of the quarter and counter stitched together and before lasting.

Fig. 6 is a view similar to Fig. 5, illustrating the lasting step conforming the counter to the quarter.

Fig. 7 is a top plan view of the assembled and shaped quarter and counter.

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Fig. 8 is a horizontal sectional view illustrating the attachment of the quarter and counter to the insole.

Fig. 9 is a sectional view on the line 9—9 of Fig. 8.

Fig. 10 is a longitudinal sectional view through a shoe constructed in accordance with the invention method.

Fig. 11 is an elevation view of a one-piece quarter with which the invention counter may be used.

Fig. 12 is a section through a shoe formed by the stitched down process, and incorporating the counter of Fig. 13.

Fig. 13 is a view of a modified counter without tabs.

Fig. 14 is a section on the line 14—14 of Fig. 8.

Referring to Figs. 1 and 2, the first step of the invention method comprises the seaming of a pair of quarter sections 10, 10' to form a properly shaped quarter. The rear edges 11, 11' of sections 10, 10' are convexly curved so that, when stitched together by seam 12 (Fig. 2), the quarter assumes a compound curved, generally horseshoe shape. To accommodate the curved shape of the quarter, the lower edges 13, 13' of the sections, which are eventually turned in beneath the insole, are notched as at 14, 14'. Sections 10, 10' are formed with curved forward edges 16, 16' for stitching to the vamp and, in the illustrated embodiment, with tongues 17, 17' for securement to the shoe cross strap.

The counter 20, shown in Figs. 3 and 4, is cut from a composition sheet of material to have a central vertical projection or tab 21, curved top and end edges 22, 22, a shallow V-shape bottom edge 23, and tabs 25, 25 projecting from each end of the bottom edge. A notch 24 is provided for alignment with the seam 12 of the quarter, projection 21 extending upwardly above the body of the counter to cover the upper end of seam 12.

The composite sheet from which counter 20 is cut comprises a layer 26 of suitable fabric, such as flannel, for example, which is impregnated with a thermoplastic composition 27, such as a polyvinyl resin, for example. One side of the sheet is coated with a heat activated adhesive material 28, such as gutta percha, for example. The other side of the sheet is coated with a suitable finish or coating 29 which may be left exposed in the finished shoe. Typical finishes may comprise a polyvinyl resin or pyroxolin on a cloth base.

In forming the composite sheet, the thermoplastic material is impregnated into the fabric. The coating surface is built onto the face side of the shoe, and then adhesive is infused into the back of the sheet.

Referring to Fig. 5, counter 20 is bent to a U-shape, inserted within the quarter, and the upper and forward edges of the counter are stitched to the quarter by a seam 30. Due to the flat shape of the counter and the compound curved contour of the quarter, all of the counter below or rearwardly of seam 30 is in spaced relation to the quarter.

Fig. 6 schematically illustrates the conforming of the counter 20 to the quarter. The assembly of Fig. 5 is placed over a suitably shaped last 35 and pulled forwardly over the last while dry heat is applied to the assembly. Under the heat and pressure, counter 20 is molded to the contours of the last and adhesive 28 is activated to adhere the counter to the quarter. The counter, thus shaped, sets in its shaped conditions conforming to the last, and the setting of adhesive 28 firmly and permanently secures the counter in surface to surface engagement with the upper.

The counter shaping step may be effectively performed in any desired manner. For example, the assembly may be laid over last 35 and then placed in a heating unit. Alternatively the assembly may be presented to a pull over machine, of the type customarily used in the art, and dry heat applied. It should be noted that the previously required steps of assembling an upper and its lining, inserting the counter therebetween, and securing the counter in position, are eliminated.

During the shaping operation, the pull on the assembly tends to pull the forward edges of the quarter and of the counter toward each other, and tabs 25, 25 tend to "lay in" due to the forward movement of the quarter which tends to "pull in" lower quarter edges 13, 13'. This is shown in Fig. 7.

The assembly is then side lasted, and tabs 25, 25 are anchored by a hand tacker, or on an insole tacker, to insole 40 as at 41, 41 (Figs. 8 and 9). The quarter is shaped around the edge of insole 40, the lower edge of the quarter being flush with the outer surface of the insole, as seen in Fig. 14. The heel seat is then lasted on a bed laster or an automatic heel seat laster.

The shoe is then completed by securing the rear ends of a suitable vamp 50, of either the open or closed type, to quarter edges 16, applying a heel 51 beneath insole 40, edges 13, 13' and tabs 25, securing an outsole 52 to the vamp lower edges 53 and to heel 51, securing across strap 54 to tabs 17, 17', and affixing a binding 55 around the upper and inner edges of the quarter and vamp. The foregoing steps may be performed in any desired sequence found most practicable for a particular type of shoe. The shoe shown in section in Fig. 10 is an infant's shoe, selected as typical of the invention procedure.

While the shoe has been described as being completed after the lasting of the counter, quarter, and insole, the vamp may be secured to the quarter, or a one-piece quarter and vamp may be used, before the lasting of the counter and quarter assembly.

The invention counter may also be used with a one-piece quarter 110, such as shown in Fig. 11. In this case, a counter 20', without tabs, as shown in Fig. 13 is used. The tabless form of counter is also used in the California or stitched down process. In such case, counter 20' has its lower edge sewn all around to the lower edge of

quarter 110, the assembly being "lasted out" and stitched to the edge of insole 40'.

With the described construction, it is impossible for the quarter lining or the counter coating to wrinkle, the counter being perfectly adapted for an unlined shoe. The quarter-counter assembly can be perfectly shaped to the contour of each individual last, and without wrinkling or creasing. Due to the perfect conformation to the last, the shoe has a tight top line.

The usual complete stitching of the counter is eliminated, only the seam 30 being required. Even the latter can be omitted, and the counter held in place by the stitching for the binding 55. Additionally, the disadvantages of fiber counters are obviated. When these fiber counters are purchased in quantity, they are tempered and change shape, during storage, due to atmospheric or temperature changes. The change in shape results in poorly fitting assemblies.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the principles thereto, it should be understood that the invention may be otherwise embodied without departing from such principles.

What is claimed is:

1. A shoe counter comprising an elongated strip having a substantially rectilinear lower edge with short tabs projecting perpendicularly from each end of such lower edge, said lower edge being spaced throughout the longitudinal extent thereof above the lower edges of said tabs, and curved upper and end edges merging to form continuous curved edges, said continuous curved edges merging into a central tab projecting from the upper edge of the strip.

2. A shoe counter comprising an elongated strip having a substantially rectilinear lower edge with tabs projecting downwardly from the opposite ends of said edge, the portion of said edge between said tabs being spaced throughout the longitudinal extent thereof above the lower edges of said tabs, and curved upper and end edges merging to form continuous curved edges, said continuous curved edges merging into a central tab projecting from the upper edge of the strip; said strip comprising fabric impregnated with a thermoplastic composition; whereby said counter may be molded to a contoured quarter by the application of pressure and heat.

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