Dec. 30, 1930. E. J. DEMPSEY ET AL 1,786,983

MANUFACTURE OF FOOTWEAR

Filed May 11, 1929

Fig. 1.

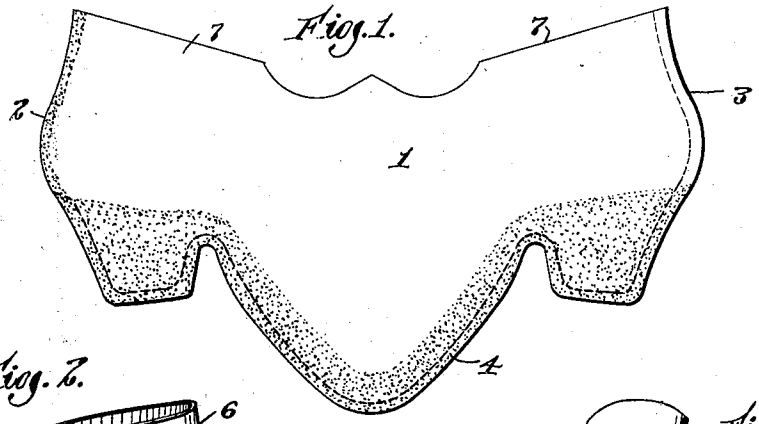


Fig. 2.

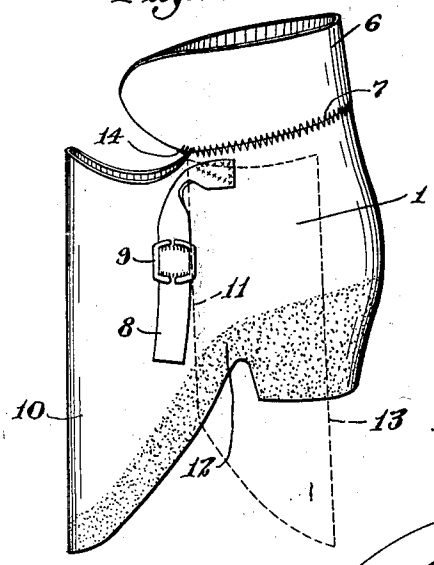


Fig. 3.

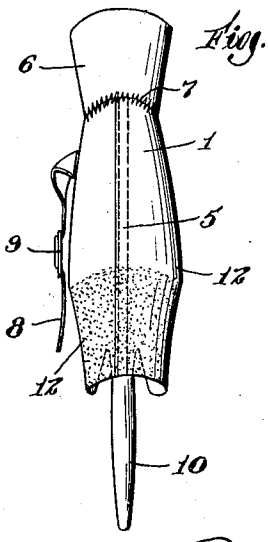


Fig. 4.

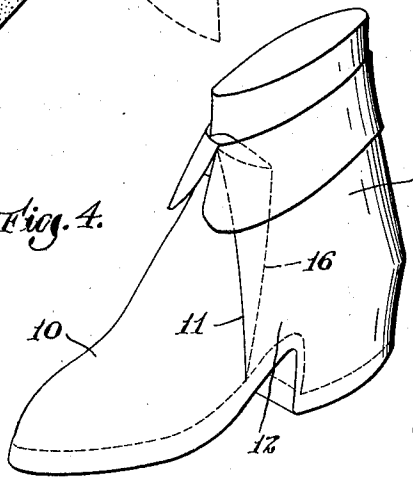
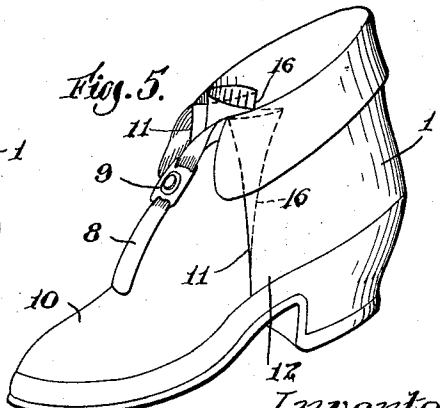


Fig. 5.



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UNITED STATES PATENT OFFICE

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MANUFACTURE OF FOOTWEAR

Application filed May 11, 1929. Serial No. 362,389.

This invention relates to the manufacture of footwear and is herein illustrated in connection with the manufacture of a vulcanized shoe of rubber or rubberized material. Although the invention is adapted to other forms of vulcanized footwear, it is particularly suited to the production of an overshoe and especially that type of overshoe known in the trade as a cuff gaiter; and for convenience the invention will be described in connection with such a shoe.

Heretofore it has been customary either to build up a shoe of this kind piece by piece upon a last or to assemble the top off the last by combining two or more parts of the top, for example the vamp and the quarter, and then pull over this built up top on the last. In all such shoes, so far as we are aware, there are seams between these pieces extending from the top down each side toward the shank. Considerable care must be taken to make these seams tight as they extend downward far enough to bring their lower portions within reach of water encountered by the wearer. And even with unusual care taken during the manufacture of this kind of shoe, it is not uncommon to have the aforesaid seams open up after the shoe has been worn a while, and when this happens the protective value of the shoe is destroyed.

According to the present invention the upper, that is the vamp, pockets and quarter are made from a single sheet or layer of double texture rubberized material such as stockinette being cut to such pattern that when the extremities are fastened together there is a single seam which preferably is located at the rear of the shoe. If so located this seam ends at an appreciable height above the bottom of the heel so that it rarely, if ever, is reached by water. The pattern is so designed that the one piece cut thereby includes integrally the vamp, pockets and quarter. During the course of manufacture after the extremities of the upper are joined together, the vamp portion is pushed inward toward the back so that the upper folds at the sides and forms the pockets. The upper edges of the overlapping sides are temporarily tacked or sewed together at the front, and the upper is then drawn over a last until its bottom edge can be secured to the insole. The shoe is completed by adding the necessary heel piece, foxings, binders and outsole and submitting the shoe as a whole to the vulcanizing process. By making the shoe in this manner not only are the usual side seams entirely eliminated but a considerable saving in material and labor results; and a lighter albeit more serviceable shoe is attained.

It is intended that the patent shall cover by suitable expression in the appended claims whatever features of patentable novelty exist in the invention disclosed.

In the accompanying drawings:

Figure 1 is a plan of the one-piece upper as it is cut from the layer of stock;

Figure 2 is a side view of the upper, after its back edges are joined together and the cuff and strap attached;

Figure 3 is a rear view showing the upper folded and tacked ready to be put on the last;

Figure 4 is a perspective of the upper drawn over the last; and

Figure 5 is a perspective of a finished shoe constructed in accordance with the present invention.

Referring more particularly to the drawings, the upper 1 is preferably cut from a layer or sheet of double texture material such as stockinette which has finished external surfaces and an intermediate filling of vulcanizable rubber. The outer side of back edge 2 and the inner side of back edge 3, together with both sides of the bottom edge 4, are impregnated with lasting or foxing cement, that on the outer surface being indicated by the stippling and the extent of that on the inner surface being indicated by the dotted line in Figure 1.

The back edges are brought together, the cemented sides in contact and overlapping, and stitched together forming the back seam 5. It is a feature of the invention that this back seam is the only seam of the upper, that is extending from the top thereof toward its bottom. The cuff 6 is next attached to the upper being butt-stitched thereto around its top edge 7. On one side of the upper (not seen in the drawings) a stud is

secured and on the opposite side the strap 8 is attached, having a buckle 9 adapted to cooperate with the said stud. At this stage of manufacture the upper appears as seen in full lines in Figure 2.

The vamp portion 10 of the upper is then folded inward, along lines 11 which extend downward from the forward edges of the cuff toward the shank. The position of the vamp portion 10 after being thus folded is indicated by the dotted lines of Figure 2, being between the side portions 12 and folded centrally along line 13. The overlapping side portions are then stitched together—tacked it is called—at 14 where the edges of the cuff terminate, the strap 8 laid across the front, the buckle 9 adjusted and snapped onto its stud.

In applying the upper to the last the folds along the lines 11 are maintained because of the tacking at 14, but the fold along line 13 is destroyed as the vamp portion 10 is forced forward again by the instep of the last, there being simultaneously formed, one on each side, new folds 16. Thus the front portion of the upper forms the folded pockets, so called, of the shoe. The upper is drawn down over the last until its lower edge can be pulled over the bottom edge of the last and stuck to an insole lying on the last bottom. Thereafter a suitable heel piece, foxings, binder and outsole are attached in the usual manner and the shoe submitted to heat treatment in order to vulcanize it. When this has been accomplished the tacking stitches at 14 are removed, and the last withdrawn through the throat of the upper.

The shoe is now complete, with its folded pocket and quarter all in one integral piece, its extremities being joined by the single back seam at the rear. It is to be noted also that by choosing to use double texture cloth, or similar material having both its surfaces finished, there is no need of any lining as the material itself constitutes the lining of the shoe. And by virtue of the design, the one-piece upper forms the vamp, folded pockets and quarter integrally, and thereby eliminates all side seams in the shoe.

What we claim as our invention is:

1. A shoe of vulcanized material comprising an upper having its vamp, folded pockets and quarter in one integral piece, with its extremities joined together along a single vertical seam.

2. A shoe of vulcanized material comprising an upper having its vamp, folded pockets and quarter in one integral piece; said piece being folded midway of its sides to form the folded pockets and having its extremities joined together along a single vertical seam.

3. A shoe of vulcanized material comprising a one-piece upper whose lower edge is shaped and adapted to be attached directly to the sole of the shoe; said upper being folded midway of its sides and overlying the instep to form the folded pockets; and having its extremities joined together along a single vertical seam.

4. A method of making a shoe which comprises cutting out of rubberized material a one-piece upper in such shape that its extremities may be joined together in a single vertical seam; folding said upper midway of its sides with the vamp portion pushed rearward; fastening the upper ends of said folds temporarily together; placing said upper upon a last to force the vamp portion outward so as to form the folded pockets of the shoe; and completing the manufacture of the shoe including subjecting it to vulcanization.

5. A method of producing a shoe top which comprises cutting an upper from sheet stock in one integral piece; attaching its side extremities together along a single vertical seam; folding the sides midway thereof with the vamp portion pushed inward; and attaching the front upper ends of said side folds together so that when placed on a last the said folds will be retained while the said vamp portion is forced forward to form the folded pockets.

6. A method of making a shoe which comprises cutting out of rubberized material, having both its surfaces finished, a one-piece upper in such shape that the extremities of its sides may be joined together along a back seam while its front portion can be folded between its side portions to form folded pockets; placing the upper on a last while so folded; and completing the manufacture of the shoe including subjecting it to vulcanization.

Signed at Providence, Rhode Island, this 30th day of April, 1929.

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