Feb. 28, 1939. LE ROY H. BROWN 2,148,602

FOOTWEAR

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Fig. 1

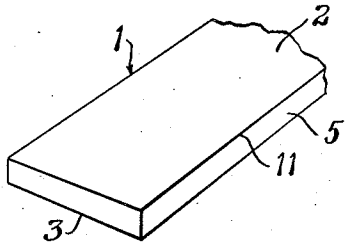

Fig. 2

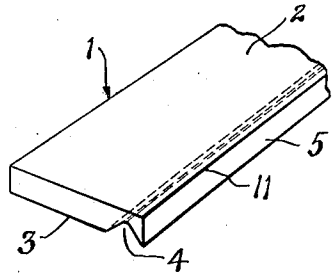

Fig. 3

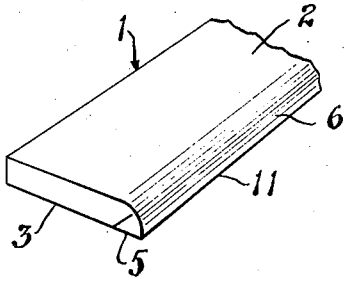

Fig. 4

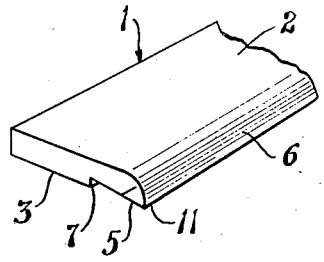

Fig. 5

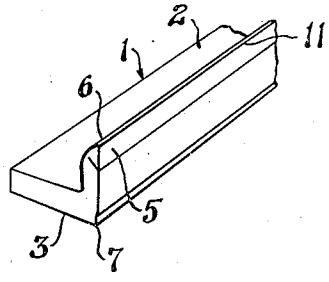

Fig. 6

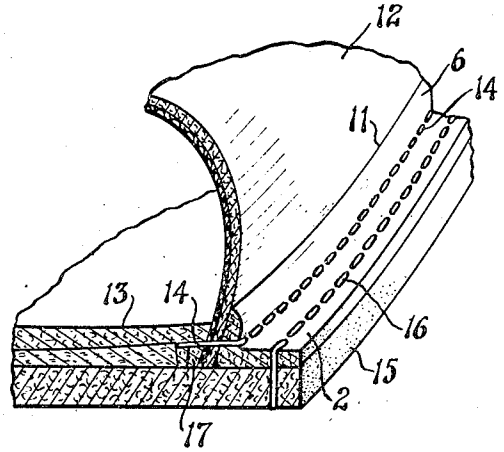

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Fig. 7

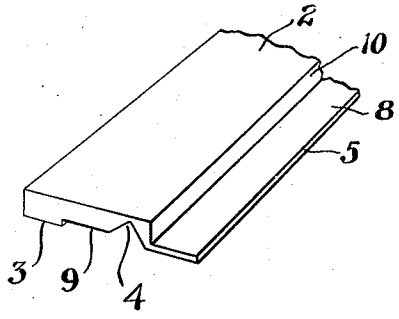


Fig. 8

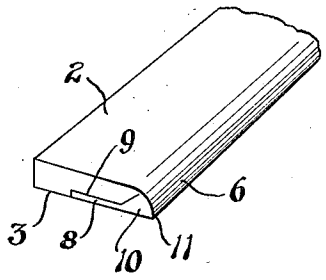
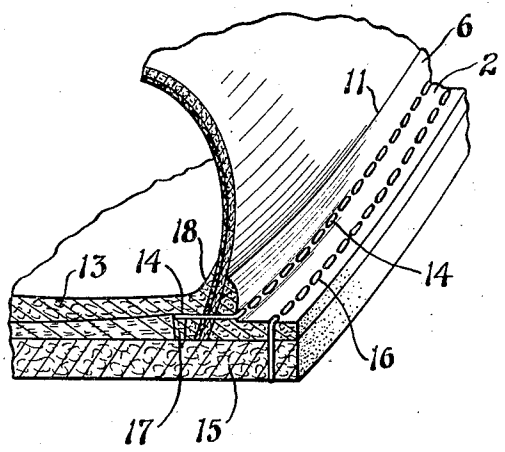


Fig. 9



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Patented Feb. 28, 1939

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UNITED STATES PATENT OFFICE

2,148,602

FOOTWEAR

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Application January 4, 1938, Serial No. 183,262

5 Claims. (Cl. 12—146)

This invention relates to a new and useful improvement in footwear, and more particularly to the insole and the type of welt commonly called a "reverse welt" for storm-shoes and other heavy foot-wear, which extends inwardly from the edge of the outer sole as far as permitted by the upper, and then turns upwardly in close contact with the lower part of the upper. Such a welt eliminates the welt crease and because of this, and other novel features, the welt of this invention improves the water and storm-excluding properties of the shoe. Also, it imparts a more rugged and attractive appearance and assists materially in protecting the upper from damage and in maintaining the shape of the shoe under the severe conditions of wear to which this type of foot-wear is frequently subjected.

One type of reverse welt now in use has a raw, fibrous upper edge which is not only unattractive in appearance, but less resistant to water than the grain surface. In other forms of reverse welt the upper edge is convex, so that there is a depression between it and the upper in which water, snow or mud can collect, with the result that moisture is certain to seep down between the welt and the upper, and to penetrate into the shoe even more readily than it would if the welt were not used at all. By this invention these defects are eliminated, and an unbroken grain surface only is exposed on the face and upper edge of the welt, and the upper edge is so shaped that moisture cannot collect upon it or between it and the upper.

It has been the practice to apply the reverse welt to the upper in flat condition. The result is that it projects downwardly past the edge of the upper and interferes with the trimming of the inseam. In addition, it must be substantially bent or beaten into its final shape, which is a slow, most difficult and uncertain operation.

By pre-forming or molding the welt before application, as contemplated by this invention, not only is the welt inseam trimming difficulty eliminated, but the time and labor required for application is reduced, and close contact between the welt and the upper assured.

The insole utilized with the reverse welt of this invention may be identical with that now in use, the edge of which is trimmed so that the inseam rib is flush with the outer edge, but preferably a new type of insole is utilized in which the edge, which normally projects beyond the inseam rib, is not trimmed off, but is skived to a thin edge and then bent upwardly so that it opposes on the inner side of the upper, the reverse welt on the outside, thus forming an extremely substantial structure.

The nature of this invention will be readily understood from the following description and drawings of which:

Fig. 1 illustrates a strip of welt leather;

Figs. 2 and 3 illustrate two steps in the formation of the welt;

Figs. 4 and 5 illustrate a desirable, but not essential modification;

Fig. 6 represents a cross-sectional fragment of a shoe with the welt applied;

Figs. 7 and 8 illustrate two steps in the formation of another modified form of the welt; and

Fig. 9 is a view similar to Fig. 6 illustrating a modified form of insole.

The welt is made from a strip of leather 1, as shown in Figure 1, having the grain side 2, flesh side 3, and raw edges. A V-shaped groove 4 is cut in the flesh side 3 of the leather slightly below raw edge 5, as shown in Figure 2, the sides of the groove forming approximately a right-angle. Cement is applied to the sides of the groove 3 and they are then brought together, as shown in Figure 3, with the result that raw edge 5 becomes a part of flesh side 3 of the welt and a new upper edge 6 from the grain side takes its place. This edge is the upper edge of the welt when applied.

The welt is now complete, although, preferably, it is molded into the final L-shape, as shown in Figure 6, before being applied to the shoe. It will be noted that the grain side of the leather extends unbroken over the face and upper edge of the welt.

The form of welt shown in Figures 4 and 5 is made in the same way as described above, but, in addition, a wedge-shaped piece of leather is removed from the flesh side from the edge 6 to the line 7, upon which it will be bent later, to form a longitudinal tongue, progressively decreasing in thickness from edge 6 to line 7. When bent into its final L-shape along line 7, as shown in Figure 5, the bend can be made sharp with less strain upon the leather than with the form shown in Figure 3. Also, an extremely close contact between the upper edge and the upper is assured, as will be hereinafter explained.

Another modification is illustrated in Figures 7 and 8. To produce this a tongue 8 is formed by cutting from the grain side 2 of the welt a strip adjacent raw edge 5, as shown in Figure 7. The flesh side 3 is also notched, as shown at 4, and provided with a recess 9 of substantially the same width and depth as the width and thickness of

tongue 8. Notch 3 is then cemented, and its sides brought together as in the forms of welts previously described, and tongue 8 is bent over into recess 9 in which it is cemented. The resulting welt resembles that of Figure 3, as will be seen from Figure 8, the raw upper edge being supplanted by the finished edge 6 from the grain side of the leather, and raw edge 10 and tongue 8 now forming part of the flesh side of the welt.

In each of these forms it will be noted that the face and upper edge are of continuous grain leather, the face curving smoothly into the upper edge, and that the upper edge terminates in a sharp edge 11 flush with the flesh side.

The welt is attached to the shoe, as shown in Figure 6, by stitching to the upper 12 and insole 13 by the inseam stitches 14 along the line of the bend, and later to the outersole 15 by the outseam stitches 16. The exposed face 2 and upper edge 6 of the welt is made wholly of grain leather and the upper edge 6, where it makes contact with the upper 12, provides no depression or other surface in which moisture can collect because of the sharp terminal edge 11 and the manner in which upper edge 6 curves away from the upper 12. There are no projections or depressions on the flesh side to impair its contact with the outersole or upper over substantially its entire surface, and, in consequence, it can be drawn very tightly against the upper by the inseam stitches, all of which adds to its moisture-excluding properties.

As already stated, the welt is, preferably, molded into the L-shape which it assumes upon the shoe before it is attached thereto. Such preforming greatly facilitates the operation of trimming off the edges of the inseam and upper and the subsequent stitching to the outersole. It also eliminates the strain upon the inseam stitches which is inevitable when a flat, unmolded, reverse welt is bent by the welt-beating operation.

The form of welt shown in Figures 4 and 5 is preferred, not only for the reason that it can be bent very sharply along the line 7, at which it is thinnest, and, in consequence, can be brought into an extremely close contact with the upper substantially down to its very edge, but also because the upper edge 6 of the welt, being thicker, will tend to project inwardly to meet the upper as it is pressed outwardly by the foot. Thus a very intimate contact between the welt and the upper at this vital point is assured.

The insole with which the welt of this invention may be used, may be of the type ordinarily employed with reverse welts. This, as shown in Figure 6, is identical with a standard insole, with the exception that the edge which normally projects beyond the inseam rib 17, is trimmed off. However, if desired, a different form of insole may be used to advantage. This is shown in Figure 9. The edge 18 which normally projects beyond the inseam rib 17 is skived to a thin edge and then bent upwardly so that it will lie flat against the upper on the inner side thereof. Since the upstanding part of the reverse welt rests against the same part of the upper on its outside, also as shown in Figure 9, an extremely sturdy and tight structure results, the upper being held snugly between the outwardly pressing insole edge and the inwardly pressing welt.

I claim:

1. A reverse welt consisting of a strip of leather having a body portion of substantially uniform thickness for attachment to the outer sole of a shoe, and an integral tongue projecting from one edge of said body portion, which is thinner than said body portion at the junction between the two and which becomes progressively thicker until at its edge its thickness corresponds substantially to that of the main body portion, said tongue being folded away from the flesh side of said body portion by substantially a right-angle at substantially its thinnest part.

2. A reverse welt consisting of a strip of leather having a body portion of substantially uniform thickness for attachment to the outer sole of a shoe, and an integral tongue projecting from one edge of said body portion, which is thinner than said body portion at the junction between the two and which becomes progressively thicker until at its edge its thickness corresponds substantially to that of the main body portion, one face of said body portion and said tongue and the terminal edge of said tongue presenting an unbroken grain surface, said tongue being folded away from the flesh side of said body portion by substantially a right-angle at substantially its thinnest part and being pre-molded into its right-angular shape before application to the shoe.

3. A reverse welt blank, which consists of a strip of leather having a body portion with opposed grain and flesh surfaces, a relatively thin tongue projecting beyond the longitudinal edge of said body portion, a longitudinal notch in the flesh side of said body portion positioned slightly inside of the junction between the body portion and the tongue, a longitudinal recess in said flesh side adjoining the inner edge of said notch and with a width and depth corresponding to the width and thickness of said tongue, all of which is adapted to form a reverse welt of substantially uniform thickness and with an unbroken grain surface covering one face and one longitudinal edge by folding and cementing together the edges of said notch and folding and cementing said tongue into said recess.

4. The method of making a reverse welt, which consists of grooving the grain side of a strip of leather to form a relatively thin rectangular tongue extending along the flesh side of one edge of said strip, longitudinally notching the flesh side of said strip slightly inside the inner edge of said tongue, forming in said strip a longitudinal groove connecting with the inner edge of said notch and of a width and depth corresponding to the width and thickness of said tongue, folding together and cementing the sides of said notch and folding and cementing said tongue into said groove and forming said strip into a substantially right-angular cross-section.

5. A reverse welt consisting of a strip of leather of substantially uniform thickness and having opposed grain and flesh sides, a notch in said flesh side extending longitudinally of said strip adjacent one longitudinal edge thereof, said strip being folded along the apex of said notch so that the sides of said notch are brought together and cemented permanently in position, said strip also being molded into a permanent right-angular cross-sectional shape with the grain side within the angle and with the apex of the angle substantially midway between the longitudinal edges of said strip.

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