April 22, 1952 L. H. GEMME 2,593,871

METHOD OF MAKING STORM WELTS

Filed Jan. 13, 1950

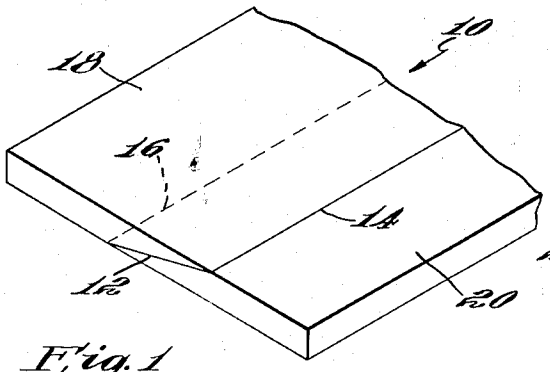


Fig. 1

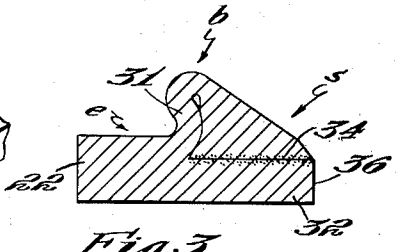
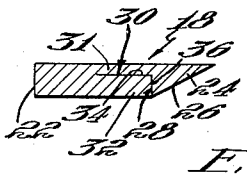


Fig. 3



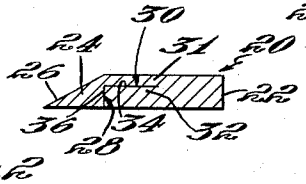


Fig. 2

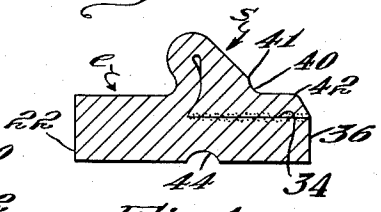


Fig. 4

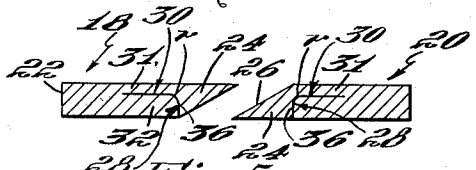


Fig. 5

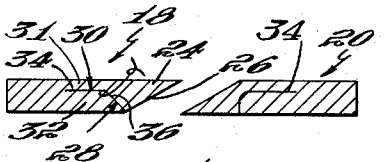


Fig. 8

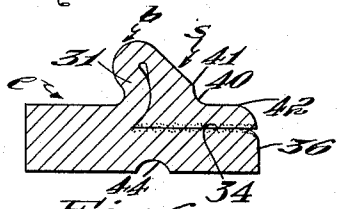


Fig. 6

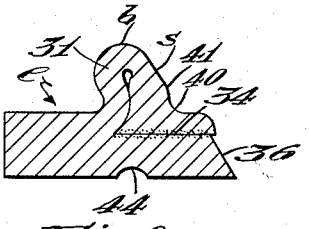


Fig. 9

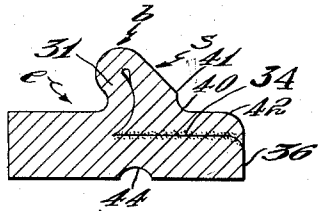


Fig. 7

Inventor
Leon H. Gemme
by Roberts, Cushman & Groover
atty's.

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METHOD OF MAKING STORM WELTS

Leon H. Gemme, Worcester, Mass., assignor to L. Farber Welting Company, Worcester, Mass., a corporation of Massachusetts

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4 Claims. (Cl. 12—146)

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This invention relates to improved methods of making storm welt strip and has for its principal objects to produce storm welt of a kind having an upstanding bead rising from its top surface close to the sewing edge in a manner which is both economical of material and easy to manufacture. In accordance with the method herein illustrated, a fillet of slightly more than double the width of the welt strip to be produced is severed longitudinally in a plane inclined from its top to its bottom surface, and separated into two strips each having a square edge and a beveled inner edge. Angular cuts are then made in each strip, one starting at the bottom surface at the base of the beveled portion, extending upwardly therefrom toward the top surface and the other laterally from the upper end of the first, outward toward the square edge an amount substantially equal to the width of the beveled surface, partially to sever from the strip a flap having a comparatively thin hinge portion terminating in a substantially triangular portion constituted by the beveled edge and leaving a subjacent shoulder including an upwardly facing shelf and a lateral edge face at the sewing edge. The flap is then bent upon itself and the triangular portion is seated on the shelf so that the beveled face thereof is in contact with the shelf and is tucked back until its edge is nearly flush with the lateral edge face of the shoulder. Adhesive is applied to the beveled face and/or the shelf to hold the bead in place. Following this, grooves are formed in the inner inclined surface of the bead and in the bottom of the strip.

The invention will now be described in greater detail with reference to the accompanying drawings wherein:

Fig. 1 is an isometric view of a short length of fillet having a top grain surface and a bottom flesh surface, the strip being split longitudinally by a diagonal cut from top to bottom;

Fig. 2 shows the fillet separated into two welt strips each having a beveled edge and a square edge and further incised by angular cuts to provide a bead-forming flap;

Fig. 3 shows the welt strip at the right side of Fig. 2 after the bead flap has been lifted and doubled upon itself to form an upstanding bead;

Fig. 4 shows the finished welt strip after removal of material from the triangular portion of the flap and removal of material from the bottom face of the strip to provide grooves in both the top and bottom sides of the sewing edge;

Fig. 5 shows a modified treatment of the welt strips wherein the bead-forming flaps are incised

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by angular cuts which intersect in a smooth curve;

Fig. 6 shows the welt strip at the left of Fig. 5 after the bead flap has been lifted and doubled upon itself to form a bead and the two grooves have been provided at the top and bottom side of the sewing edge;

Fig. 7 shows the welt strip at the right side of Fig. 5 after the bead flap has been lifted and doubled upon itself to form a bead and the two grooves have been provided at the top and bottom side of the sewing edge;

Fig. 8 shows another manner of incising the welt strip wherein the angular cuts in the left strip intersect at an oblique angle while those at the right intersect at right angles as in Fig. 5; and

Fig. 9 shows the welt strip at the left of Fig. 8 after the bead flap has been lifted and doubled upon itself to form a bead and the two grooves have been provided at the top and bottom side of the sewing edge.

Referring to Fig. 1 there is shown a short length of fillet 10 which is double the width of the welt strip to be produced plus $\frac{3}{16}$ of an inch having an upper grain surface and a lower flesh surface from which two continuous welt strips 18 and 20 are made by cutting through the body of the fillet from top to bottom in an inclined plane 12 in such a manner that the cut emerges from the top and bottom surfaces along lines 14 and 16 substantially equally distant from the opposite edges of the fillet. Following severance in the plane 12 the fillet is separated as illustrated in Fig. 2 and each strip as thus formed has an outer square edge 22 and an inner beveled portion 24, the latter having an inclined or beveled surface 26. Each strip is then treated to form a bead flap by making angular cuts 28 and 30 therein. The cut 28 starts in the lower or flesh surface substantially at the base of the beveled portion, and rises upwardly in the body of the welt strip to a point appreciably beyond the midplane. The cut 30 then extends laterally from the upper end of the cut 28 outwardly toward the square edge substantially parallel to the top and bottom surfaces a distance which is substantially equal to the length of the beveled surface 26. The bead-forming flap as thus partially severed from the welt strip may be lifted upwardly therefrom and has a comparatively thin hinge-like portion 31, terminating in the beveled or triangular portion 24, one side of which is constituted by the beveled surface 26. Underlying the bead-forming flap is a shoulder 32 having an upwardly facing shelf

34 and an end edge 36. To form up the bead the flap is lifted upwardly about its hinged portion and bent back upon itself so that the beveled surface 26 of the triangular portion is brought into engagement with the subjacent shelf 34 and is then adhesively secured thereto. The outer portion of the formed bead *b* rises nearly vertically from the plane of the welt extension *e* and the inner portion *s* slopes toward the sewing edge. The apex of the triangular portion 24 is brought substantially flush with the end edge 36 of the shoulder 32. Following this a shallow groove 40 is formed in the inner inclined surface *s* of the bead by removing a strip of material therefrom preferably of sufficient depth to penetrate the grain, if there is a grain, and so situated that one wall of the groove is substantially tangent to the upper surface of the welt extension and the other is tangent to a plane perpendicular to the welt extension. The sloping surface *s* of the bead accordingly has a rather abrupt shoulder 41, substantially midway between its top and base, well adapted to fit snugly against the rising upper material close to the welt crease of a shoe to which it is to be applied, and a substantially horizontal lip 42 beveled at its extremity adapted to fit snugly into the welt crease. A second groove 44 may be formed in the bottom surface of the welt strip substantially subjacent to the inner end of the shoulder 32 to provide a stitched groove in which the stitches at the under side of the welt will be buried and hence will not interfere with the sole when it is laid against the welting.

Alternative methods of cutting the strip are shown in Figs. 5 to 9 inclusive. In Figs. 5, 6 and 7 the angular cuts 28 and 30 which are situated substantially at right angles to each other, as in the previous construction, are modified by making the incisions so that they intersect at a small radius *r*. The subjacent shoulder 32 has a rounded outer corner. In this case, when the triangular portion 24 of the bead-forming flap of the strip at the right side of Fig. 5 is placed on the subjacent shelf 34 its apex will be pressed downwardly about the rounded corner of the shoulder so that the exposed inner surface *s* of the bead merges more smoothly with the end edge 36 of the shoulder (Fig. 7). When the strip at the left-hand side of Fig. 5 is similarly treated the apex sets up from the shelf as shown in Fig. 6. Actually the set-up is so small as to be hardly noticeable and as a practical matter, may be ignored. The set-up is probably due to the inherent stiffness of the triangular portion 24 and to the fact that in this particular form the apex must be bent a much further distance to bring it into engagement with the end edge face 36 than the apex of the strip shown at the right-hand side of Fig. 5. As in the previously formed strips, the grooves 40 and 44 are made by removing appropriate amounts of material from the sloping surface *s* of the formed up bead and the bottom surface of the welt strip.

In Figs. 8 and 9 the angular cuts 28 and 30 are further modified in respect to at least one strip. In the strip at the left side of Fig. 8 the cuts are made so as to intersect at an obtuse angle α while those on the strip at the right side are made the same as shown in Fig. 5. It is to be understood however, that the strip at the right may be treated in the same manner as that at the left. As illustrated in Fig. 8, the cut 28 inclines upwardly and outwardly at an acute angle to the bottom surface, meeting the horizontal cut 30 at an obtuse angle α so as to provide a shoulder

32 having a horizontal shelf 34 and an inclined edge face 36. When the triangular portion 24 of the flap is seated on the shelf 34 its beveled surface 26 will have contact with the horizontal shelf of the shoulder (Fig. 9). As in Fig. 6, the apex will set up from the inclined edge face but this set-up is so small that it may be ignored. Grooves 40 and 44 are then formed in this strip as heretofore explained.

All of the cuts made in the preparation of the fillet and the welt strip for beading up are made by conventional slitting knives held in stationary fixtures while the strips are moved relative thereto. Such cutting knives and the apparatus necessary to draw the strips relative thereto, being well-known in the art, have not been illustrated herein.

It is to be observed that in each case the finished welt strip has a horizontal grain faced welt extension from which rises a bead having a nearly vertical outer face and an inclined inner face, the inner face of which has a rather abrupt shoulder of nearly vertical inclination and a horizontal ledge situated substantially in the plane of the welt extension. The terminal edge of the ledge is inclined so as to meet the edge face of the welt body smoothly. It is to be observed that in each case where the welt strip is made from the half of the fillet having the grain surface extending from edge to edge the entire bead will have a grain surface while the welt strip made from the other half of the fillet will have a grain surface extending up to the top of the bead at the outside and a flesh surface throughout the inner inclined portion.

By constructing the beaded welt strips in the foregoing manner from a single fillet it is evident that substantially similarly shaped welt strips may be produced with a saving in material and without undue complications in manufacture.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

I claim:

1. A method of making storm welting comprising the steps of providing a welt strip having a square outer edge and beveled inner edge, making a cut in said strip starting at the bottom surface, extending upwardly appreciably beyond the medial plane and then laterally toward the square edge of the strip, said cut originating at the base of the beveled edge and terminating in a plane substantially parallel to the surfaces, thereby partially severing a bead-forming flap from the strip having a thin hinge-like portion and an end portion constituted by said beveled edge and leaving a subjacent shoulder having an upwardly faced shelf, lifting the bead-forming flap about its anchored end, bending it double upon itself to bring the surface portion of the beveled edge divided from the remainder of the strip by said cut originating at the bottom surface into engagement with the subjacent shelf, securing said portion of the beveled edge to the shelf to form a bead standing upright from the top surface of the strip having a generally vertical outer surface and an inner surface declivitating toward the sewing edge, and removing from the inward inclined surface of the bead near the sewing edge a strip of material to provide a concave groove, one wall of which is substantially tangent to the plane of the top surface of the welt.

2. A method of making storm welt in accordance with claim 1 wherein the surface portion of the beveled edge divided from the remainder of the strip by said cut originating at the bottom surface is inclined and intersects the top at the extremity of the bevel.

3. A method of making storm welting in accordance with claim 1 wherein the surface portion of the beveled edge divided from the remainder of the strip by said cut originating at the bottom surface forms an extension of the bottom surface and intersects the inclined surface of the bevel at its extremity.

4. A method according to claim 1 wherein adhesive is interposed between the surface portion of the beveled edge and the subjacent shelf of the

shoulder, adhesively to anchor the beveled edge to the shoulder.

LEON H. GEMME.

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