

March 10, 1942.

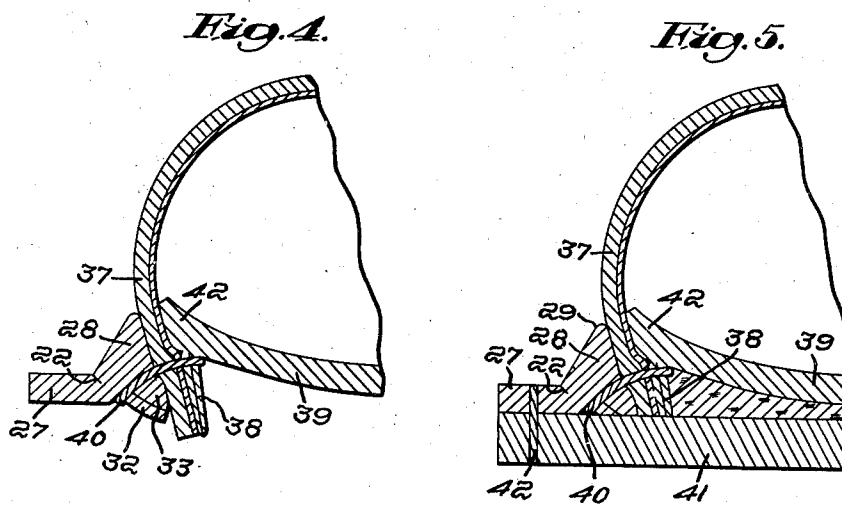
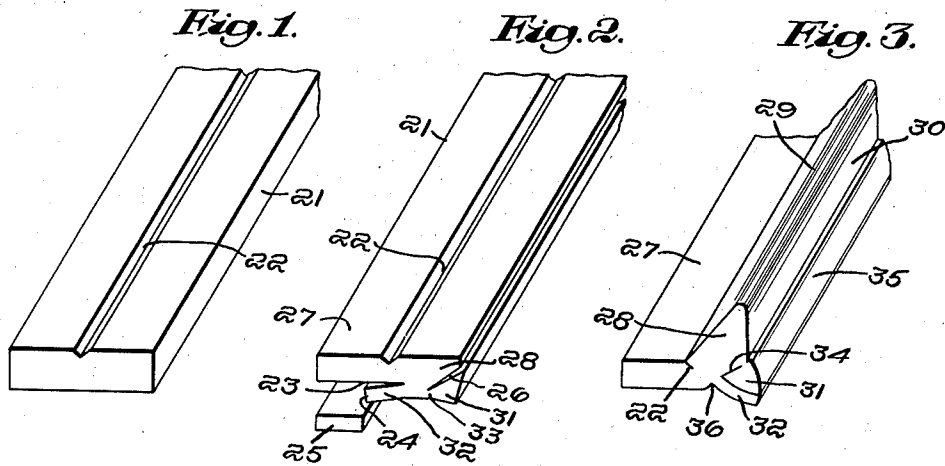
W. C. VIZARD

2,275,574

BEADED WELTING

Filed May 27, 1941

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

Fig. 6.

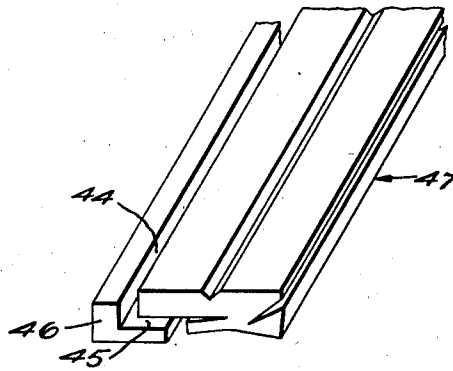


Fig. 7.

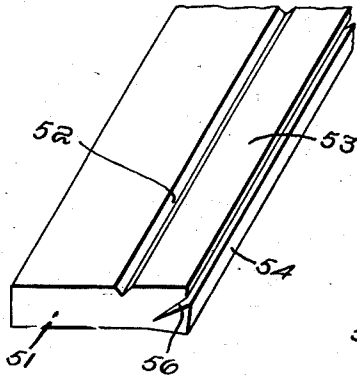


Fig. 8.

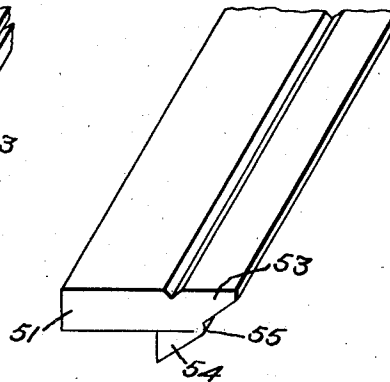
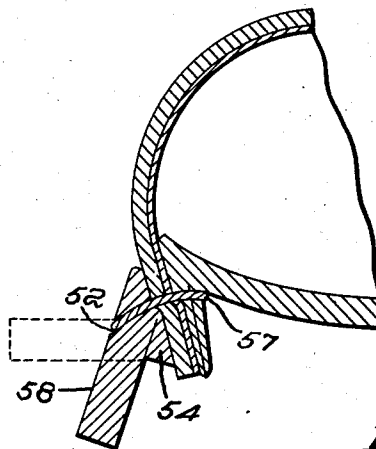


Fig. 9.



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3 Sheets-Sheet 3

Fig. 10.

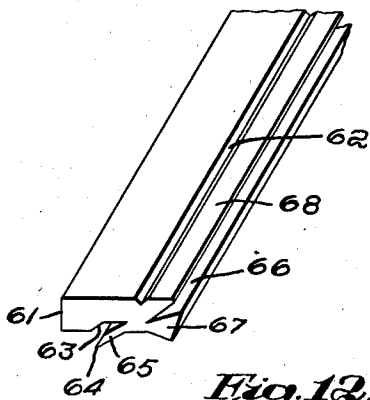


Fig. 11.

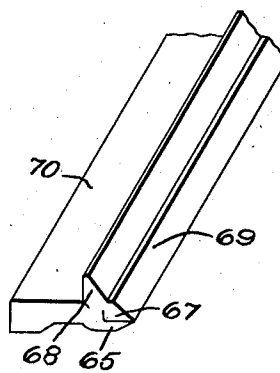


Fig. 12.

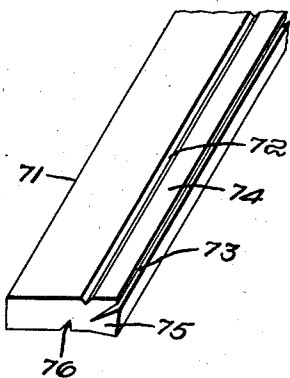


Fig. 13.

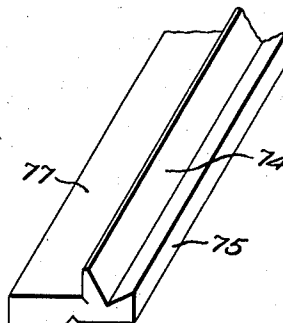
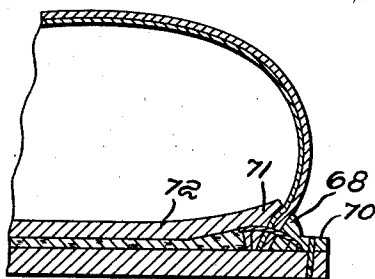


Fig. 14.



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UNITED STATES PATENT OFFICE

2,275,574

BEADED WELTING

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Application May 27, 1941, Serial No. 395,403

13 Claims. (Cl. 12—146)

This invention relates to shoe welting and its process of manufacture, and pertains more particularly to beaded welting of the type having a raised flange or bead located between the flat welt extension and the shoe upper when the welting is built into the shoe. The general purpose of the invention is to provide at minimum cost a neat and dressy welt formed of a single piece of stock and having an integral upstanding bead and contiguous sewing edge so fashioned as to provide an inner longitudinal shoulder which fills the welt crease and ensures that the welting is snugly secured to the upper and innersole without excessive beating or distortion of the welt during its application to the shoe.

The principal advantage of the improved process of manufacture resides in the substantial saving of material as contrasted with the stock heretofore required in making beaded welting of comparable width, quality and service. For example, a popular brand of welting made in accordance with Arnold and Vizard Patent No. 1,828,728 and sold in substantial quantities under the name "stormwelt," requires a fillet $1\frac{1}{16}$ " in width and $\frac{1}{8}$ " in thickness; whereas a preferred form of welting herein disclosed is made from a fillet $\frac{7}{16}$ " by $\frac{1}{8}$ ". As welting is made in strands of unlimited length, any slight reduction in the strand width necessary to produce one-half inch welting represents a very substantial saving to the manufacturer, especially when the stock is a good grade grain leather as herein recommended.

A welt made by the methods hereinafter described not only is economical to manufacture, easy to apply and stylish in appearance after application, but also affords a closer and firmer support for the upper, hugging the welt crease and holding that inseam line firmly and evenly, so that separation of the bead from the upper leather is prevented. The close fitting characteristics of the improved welt result from the oblique slitting of the inner edge of the welt strip and the spreading of the divided flanges to form a relatively wide flesh surface presenting a sloping shoulder which lays closely into the welt crease when the welt is applied to the lasted upper of the shoe.

Other features and advantages of the improved welting and its method of manufacture will be apparent from the ensuing description of the recommended embodiments of the invention illustrated in the accompanying drawings, and will be pointed out in the appended claims. In the drawings:

Fig. 1 is a perspective view of a leather fillet formed with a narrow groove in its grain surface;

Fig. 2 is a similar view showing the cuttings made in the flesh portions of the fillet preliminary to the bending and molding of the bead and sewing edge;

Fig. 3 is a perspective view of a finished welt strip made from the fillet of Figs. 1 and 2;

Figs. 4 and 5 are fragmentary sectional views through the toe portion of a lasted upper and finished shoe, respectively, showing the application thereto of the welt of Fig. 3;

Fig. 6 is a view similar to Fig. 2, illustrating an optional mode of cutting a fillet slightly wider than that of Fig. 1;

Fig. 7 is a view similar to Fig. 2, showing a modified form of fillet used in producing a reverse welt strip;

Fig. 8 is a perspective view of a reverse welt made from the fillet of Fig. 7;

Fig. 9 is a view similar to Fig. 4 illustrating the application of the reverse welt to a lasted upper;

Figs. 10 and 11 are views similar to Figs. 2 and 3, respectively, illustrating a modified type of Goodyear beaded welting;

Figs. 12 and 13 are similar views, showing a further modification; and

Fig. 14 is a fragmentary sectional view of a finished shoe equipped with the welt of Fig. 11.

In the particular embodiment chosen for the purpose of illustration in Figs. 1 to 5 inclusive, half-inch beaded welting having a quarter-inch welt extension and a quarter inch bead is produced from a fillet $\frac{7}{16}$ " wide and $\frac{3}{32}$ " thick. The grain face of the fillet 21 is scored with a central, longitudinal V-shaped groove 22, approximately $\frac{1}{16}$ " wide at the surface and $\frac{1}{32}$ " deep (Fig. 1), and the following cuts are made in the flesh portion of the fillet: a lateral cut 23 extending inward $\frac{1}{16}$ " from the outer edge of the fillet, parallel to the faces thereof and $\frac{1}{16}$ " from the bottom surface; a vertical cut 24 spaced $\frac{3}{16}$ " from said outer edge of the fillet and extending from the bottom of the fillet to the cut 23 remote from its apex, thereby freeing a rectangular strip 25; and an oblique cut 26 along the inner edge of the fillet, starting on a line $\frac{1}{8}$ " from the bottom of the fillet and extending inwardly and downwardly from said inner edge to an apex located $\frac{1}{8}$ " therefrom and $\frac{3}{32}$ " from said bottom (Fig. 2). The cut-away strip 25 is suitable for use as stitchdown welting, so that there is no wastage of the leather stock.

The cuts 23, 24 and 26 thus form the welt extension 27 having a grain surface; a solid tri-

angular flange or bead portion 28 having an outer grain surface 29 and an inner flesh surface 30 (Fig. 3); a triangular flange or flesh flap 31; a flat sided flesh lip 32; and a thin hinge 33 between the apex of slit 26 and the bottom of the fillet. After removal of the strip 25, the bead 28 is bent upwardly of the welt extension on the groove 22; the flap 31 is bent downwardly and outwardly of the fillet on the hinge 33, and against the bottom of the fillet to which it is cemented along the line 34 (Fig. 3); the lip 32 is folded downwardly and inwardly of the fillet against the side of the flap 31 which previously constituted its inner edge; and the flap and lip are cemented together to form a two-part sewing edge.

It will be understood that the cutting, folding and cementing operations are performed by suitable machines which also press and mold the leather portions into the final shape represented by the beaded welting of Fig. 3; and it will be observed that these operations produce an up-standing bead of substantial height, a thick sewing-edge composed of the flap 31 and lip 32 and having a longitudinal shoulder 35, and a longitudinal crease or groove 36 formed in the bottom of the welt by bending the lip inwardly from the apex of cut 23.

When embodied in a Goodyear welt shoe as shown in Figs. 4 and 5, the sloping flesh surface 30 of the bead and the protruding flesh shoulder 35 of the sewing edge snugly engage the upper 37 and fit into the welt crease, so that the welting may be tightly secured to the lip 38 of innersole 39 by the usual inseam stitch 40 which passes along the groove or crease 36 and through the base of the sewing edge. The improved welt is thus inseamed with a minimum of welt beating or distortion by sewing, and may be out-seamed to the outsole 41 by the customary stitch 42 without any appreciable reduction in the thickness of the welt extension 27 due to excessive beating. The welt extension in the completed shoe, although only $\frac{3}{8}$ " thick in Fig. 3, accordingly has a final thickness equivalent to that of the regular $\frac{1}{2}$ " Goodyear welt after it is beaten.

The beaded welting just described will thus serve all the purposes of more expensive welting of this type and possesses the additional advantage of a more perfect seam filler beneath the feather 42 of the innersole; and it will be noted that the visible surfaces of the welt extension and bead present the desired appearance of grain leather, while the inner flesh surface of the bead lends itself more readily to close-fitting engagement with the upper. It will also be appreciated that the wide sloping bead surface 29 may be attractively ornamented or decorated to enhance the style and appearance of the finished shoe.

In the optional method of manufacture shown in Fig. 6, a fillet $\frac{3}{16}$ " wide and of the same thickness as that of Figs. 1 and 2, has a vertical cut 44 extending downwardly from the grain surface, $\frac{3}{8}$ " from the outer edge of the fillet, and a lateral cut 45 extending inwardly of the fillet from the apex of cut 44 and corresponding to cut 23 of Fig. 2, thereby freeing an L-shaped strip 46 which is suitable for use as a caulk welt. The remaining bead welt strip 47 is cut, shaped and finished in the same manner as previously explained.

The reverse welt illustrated in Figs. 7 to 9, as a modified form of this invention, is made

from a fillet 51 which may be $\frac{1}{8}$ " wide and $\frac{5}{16}$ " thick; and the fillet has a V-shaped groove 52 and an oblique inner edge cut 56, corresponding to the cuts 22 and 26 respectively of Fig. 2, and providing a triangular bead portion 53 and flesh flap 54 corresponding to the bead 28 and flap 31 of the previous embodiment. Similarly, the flap 54 is bent downwardly on its narrow hinge until its bottom surface abuts the bottom surface of the fillet proper to which it is cemented, and that operation produces the crease-filling shoulder 55 as shown in Fig. 8.

In this case, the contiguous flesh surfaces of the bead 53 and folded flap 54 are placed against the lasted upper and secured by the inseam stitch 57 before the bead is bent relative to the welt extension 58, as indicated by the full lines of Fig. 9; and it will be noted that the inseam follows the groove 52 in the grain surface of the welt and passes through the base of the triangular bead. When thus inseamed, the welt extension 58 is bent upwardly on the groove 52 to the dotted line position of Fig. 9, and the outsole may be applied and outseamed thereto as in Fig. 5. This operation closes the groove 52 and conceals the stitching 57, so that a shoe equipped with this reverse welt also presents a smooth grain surface on the exposed faces of the bead and welt extension.

The modifications illustrated in Figs. 10 to 14 are essentially similar in purpose to the welting of Figs. 1 to 5 and possess substantially the same advantages with a still further saving in material costs, inasmuch as this modified beaded welting may be made from a fillet $\frac{7}{16}$ " in width and $\frac{1}{8}$ " in thickness. Such welting stock is thus no larger than that used for plain Goodyear welting, yet it is formed with a bead and a seam-filling, shouldered sewing edge, and has an effective width of a regular half inch welt.

The fillet 61 of Figs. 10 and 11 has a V-shaped groove 62 in its grain surface, spaced inwardly $\frac{1}{4}$ " from its outer edge, and corresponding to the groove 22 of Fig. 2; an angular base cut including an oblique leg 63 extending upwardly and inwardly of the fillet from its bottom surface, and a lateral leg 64 extending inwardly from the apex of the leg 63, parallel to and approximately forty-thousandths of an inch from said bottom surface. The angular cut enters the base of the fillet $\frac{1}{8}$ " from its outer edge, and forms a flesh lip 65 approximately $\frac{1}{8}$ " long and corresponding in purpose to the lip 32 of Fig. 2.

The inner edge of fillet 61 has an oblique cut 66, like cut 26 of Fig. 2, providing a triangular flesh flap 67 and a triangular bead 68 and crease-filling shoulder 69, corresponding to the flap 31, bead 28 and shoulder 35 of said figure. The bead 68 is turned upwardly, the flap 67 and lip 65 are folded downwardly and inwardly, respectively, and cemented together, and the finished welt (Fig. 11) is applied to the shoe (Fig. 14), all in the manner explained in connection with Figs. 1 to 5. This modified welting provides a normal width welt extension 70 and a bead which, although appreciably smaller than that in Fig. 3, is large enough to fill the welt crease and hold a uniform seamline, and to provide a dressed and finished appearance in the completed shoe; the sewing edge is of adequate thickness for proper inseam stitching and pulls up tightly under the feather 71 of the insole 72; and the reduced thickness under the welt extension will be made uniform by the light beat-

ing to which the welting is subjected by the shoe manufacturer. All these advantages are obtained in a beaded welting which may be sold to the shoe manufacturer at approximately the cost of ordinary Goodyear welting, and the welt shown in Figs. 11 and 14 is therefore preferred for general use.

In the additional modification illustrated in Figs. 12 and 13, the fillet 71 is similar in size to that of Fig. 10, and has a corresponding V-shaped groove 72 in its grain surface and oblique cut 73 in its inner edge, forming the bead portion 74 and the flesh flap 75 which are spread apart to present a wide flesh surface for application to the shoe upper. The base of fillet 71 is not provided with a foldable flesh lip, as previously described, but a triangular slot 76 is formed in its bottom surface to provide a stitch-receiving groove and to permit the bead to be bent upwardly on the top groove 72 (Fig. 14). It will be understood that the bending of the bead relative to the welt extension 77 moves the sewing edge or flap 75 inwardly, thereby increasing the effective width of the welt strip, and that this flap is bent downwardly beneath the feather of the innersole to fill the welt crease, when the welt is applied to the lasted upper and secured by the inseam stitch.

In each of the several illustrated embodiments of this invention, a fillet of grain leather is grooved on its grain surface and also on its flesh surface, and an oblique slit is cut in its inner edge, to produce a solid, triangular shaped bead which may be easily bent upwardly with respect to the welt extension, and a triangular flesh flap constituting a sewing edge which may be folded downwardly and, as preferred, cemented to the bottom of the fillet, thus spreading the flanges which are divided by said oblique cut and presenting a wide convex surface for application to the shoe upper.

The slit or groove in the bottom of the fillet permits the bead to be bent upwardly more easily, and the upward folding of the bead stretches the flesh part of the leather at the base of the sewing flange and renders it more pliable, thus facilitating the insertion of the inseam stitches which enter at the bottom crease or groove and pass through the base of the sewing edge.

The welt thus formed presents a grain surface on the welt extension and on the outer, exposed side of the bead, and a flesh surface on the inside of the bead and the sewing flap; and said flesh surface engages the upper of the shoe and the bottom flange or sewing edge fits snugly into the welt crease, so that the attached welt firmly holds the inseam line and prevents spreading or grinning of the head.

The respective optional forms of the improved welt possess special advantages according to the type, grade and selling price of the shoes in which they are to be incorporated and the style effect which is desired. For example, the flesh shoulders of the two-part sewing edge illustrated in Figs. 3 and 11 contribute particularly to a tight fit of the welt in the shoe; the form of Fig. 8 presents the fit and appearance of a Goodyear welt in a reverse welt application; and the welts of Figs. 11 and 13 provide firmness and style with great economy, and form a bead having a flat and nearly upright inner face which avoids the necessity of making an extra size up on sole patterns, as in the case of previous beaded welting, which tends to round out during application.

Although the improved welting is preferably

made of a good grade of grain leather, it will be understood that many of the advantages of the welts herein described will be attained by the use of ungrained leather or other welting material; and it will also be understood that this invention is not intended to be limited to the specific materials, structures or processes above set forth, except as stated in the following claims.

I claim:

1. Beaded leather welting comprising a flat welt extension having a grain surface, an integral, solid bead projecting above the welt extension along the inner side of the welt, said bead having an inner flesh face, and an integral sewing flange disposed below the bead along said welt side, said flange having an inner face constituting a continuation of the inner face of the bead and the flange face having a protruding longitudinal shoulder adapted to fill the welt crease of a shoe to which the welting is applied.

2. Beaded leather welting formed from a flat fillet and comprising a flat welt extension having a grain surface, a solid triangular bead projecting above the welt extension along the inner side of the welt, said bead having a flat outer grain face and a flat inner flesh face, and a sewing flange of flesh stock disposed below the bead along said welt side and having an inner face constituting a continuation of the inner face of the bead.

3. Beaded leather welting formed from a flat fillet and comprising a flat welt extension having a grain surface, a solid triangular bead projecting above the welt extension along the inner side of the welt, said bead having a flat outer grain face and a flat inner flesh face, and a sewing flange of flesh stock disposed below the bead along the inner side of the welt and having an inner face constituting a continuation of the inner face of the bead, said flange including a substantially triangular flap folded downwardly and outwardly of the inner edge of said fillet and a lip folded downwardly and inwardly from the bottom of the fillet and secured to said flap.

4. Beaded leather welting formed from a flat fillet and comprising a flat welt extension, a bead projecting above the welt extension along the inner side of the welt, and a two-part sewing flange composed of a substantially triangular flap folded downwardly from the inner edge of the fillet and a flat sided lip folded inwardly from the bottom of the fillet and cemented to the bottom of the folded flap.

5. A method of making beaded welting which consists in cutting an oblique slit extending forwardly and downwardly from the inner edge of the fillet to provide substantially triangular upper and lower flanges, and spreading said flanges so that the upper flange projects above the body of the welt to form a bead and the lower flange is folded downwardly to form a sewing edge.

6. A method of making beaded leather welting which consists in forming a longitudinal groove in the upper surface of the fillet along the inner margin of a welt extension thereof, cutting an oblique slit extending forwardly and downwardly from the inner edge of the fillet to provide substantially triangular upper and lower flanges, spreading said flanges so that the upper flange projects above the welt extension to form a bead and the lower flange is folded downwardly and forwardly of the fillet and against the bottom thereof to form a sewing edge, and cementing said lower flange to said fillet bottom.

7. A method of making beaded leather welt-

ing which consists in forming a longitudinal groove in the grain surface of a fillet along the inner margin of a welt extension thereof, cutting an oblique slit extending forwardly and downwardly from the inner edge of the fillet to provide a substantially triangular bead portion and a substantially triangular flesh flap hinged to the base of the fillet adjacent the apex of said slit, making a longitudinal cut in the bottom of the fillet to permit bending of the bead portion and to form a crease for inseam stitching, and bending the bead portion along said groove relative to the welt extension to provide an upstanding triangular bead having an outer grain face and an inner flesh face.

8. A method of making beaded leather welting which consists in forming a longitudinal groove in the grain surface of a fillet along the inner margin of a welt extension thereof, cutting an oblique slit extending forwardly and downwardly from the inner edge of the fillet to provide a substantially triangular bead portion and a substantially triangular flesh flap hinged to the base of the fillet adjacent the apex of said slit, making a longitudinal cut in the bottom of the fillet to permit bending of the bead portion and to form a crease for inseam stitching, folding the flap downwardly and outwardly on said hinge and against the bottom of the fillet and cementing it thereto, and bending the bead portion upwardly along said groove relative to the welt extension, thereby to provide an upstanding triangular bead having an outer grain face and an inner flesh face, and a depending sewing flange of flesh stock.

9. A method of making beaded leather welting which consists in forming a longitudinal groove in the grain surface of a fillet along the inner margin of a welt extension thereof, cutting an oblique slit extending forwardly and downwardly from the inner edge of the fillet to provide a substantially triangular bead portion and a substantially triangular flesh flap hinged to the base of the fillet adjacent the apex of said slit, cutting the bottom of the fillet upwardly and inwardly thereof to form a longitudinal lip and a stitching crease at the apex of said cut, bending the bead portion upwardly along said groove relative to the welt extension to provide an up-

standing triangular bead having an outer grain face and an inner flesh face, folding said flap downwardly and outwardly on said hinge and against the bottom of the fillet, and folding said lip forwardly against said flap and cementing it thereto, thereby to provide a two-part sewing edge.

10. A method according to claim 9 in which the cutting of the bottom of the fillet involves an oblique slit extending upwardly and inwardly of the fillet from the bottom thereof, and a lateral slit extending inwardly of the fillet parallel to said bottom.

11. A method according to claim 9 in which the cutting of the bottom of the fillet involves a lateral cut extending inwardly from the outer edge of the fillet parallel to the bottom, and a vertical cut extending upwardly from the bottom and joining the lateral cut remote from its apex, thereby freeing a rectangular strip from the fillet.

12. A method according to claim 9 in which the cutting of the bottom of the fillet involves a vertical cut extending downwardly from the top of the fillet near the outer edge thereof, a lateral cut extending inwardly of the fillet from the apex of said vertical cut and parallel to said bottom, and a vertical cut extending upwardly from said bottom and joining the lateral cut remote from its apex, thereby freeing an L-shaped strip from the outer margin of the fillet.

13. In a Goodyear welt shoe having an inner-sole formed with a feather edge and a sewing lip, an upper having a margin engaging said feather and lip and an outer sole, a beaded welt strip having a substantially flat welt extension engaging said outer sole, a solid, substantially triangular bead projecting above the welt extension along the inner side of the strip and having a substantially flat inner surface engaging the upper, and a sewing flange disposed below said bead along said strip side and having a longitudinal shoulder snugly fitting the welt crease of the shoe below the feather of the innersole, the welt strip being inseamed to the innersole by stitching passing through the sewing lip thereof and the base of said sewing flange to hold said flange in the welt crease.

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