Jan. 17, 1928. 1,656,564

H. LYON

WELTING AND METHOD OF MAKING THE SAME

Filed Jan. 30, 1924

Fig. 1.

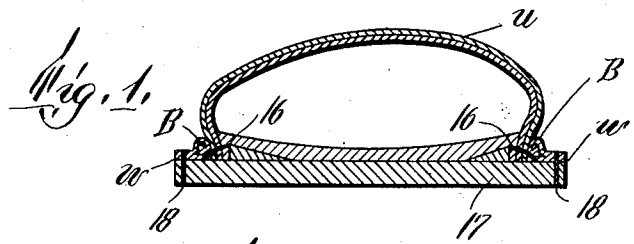
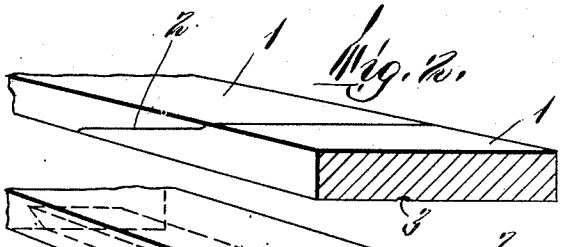


Fig. 2.



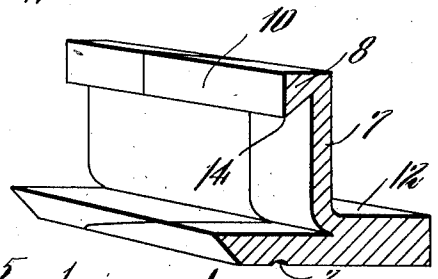


Fig. 3.

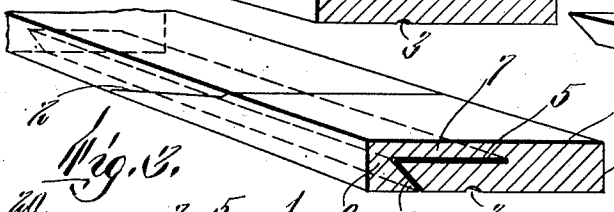


Fig. 4.

Fig. 9.

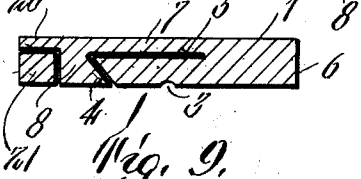


Fig. 6.

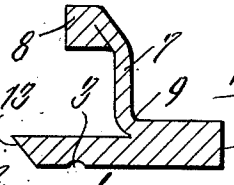
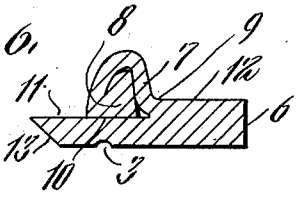


Fig. 5.



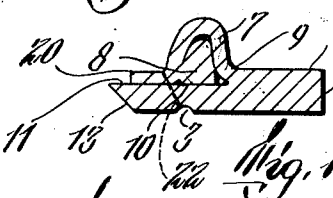


Fig. 10.

Fig. 7.

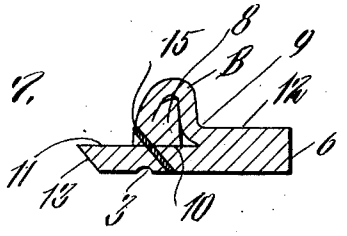
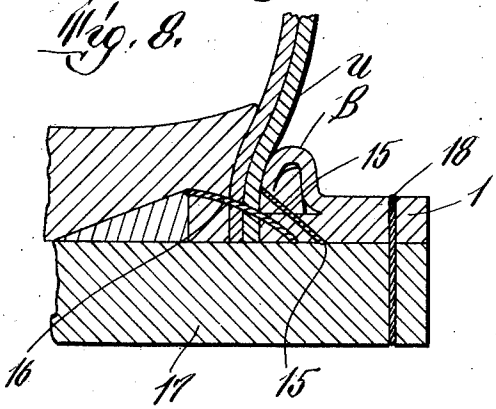


Fig. 8.



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by Wright Brown Quinby & May
Atty's.

Patented Jan. 17, 1928. 1,656,564

UNITED STATES PATENT OFFICE.

HARRY LYON, OF BROCKTON, MASSACHUSETTS, ASSIGNOR TO JOHN A. BARBOUR, OF BROOKLINE, MASSACHUSETTS, AND PERLEY E. BARBOUR, OF QUINCY, MASSACHUSETTS, A COPARTNERSHIP DOING BUSINESS UNDER THE NAME OF BARBOUR WELTING COMPANY, AT BROCKTON, MASSACHUSETTS.

WELTING AND METHOD OF MAKING THE SAME.

Application filed January 30, 1924. Serial No. 689,415.

This invention relates to welting and to the manufacture thereof and more particularly, although not necessarily, to welting for use in the manufacture of Goodyear welt boots and shoes.

Certain styles of Goodyear welt shoes are provided with a ribbed or two-deck welt which gives an appearance of strength and which, for some years, has been made in imitation of the original cork-sole welt which was applied in the crease to insure a water-tight inseam. These imitation cork-sole welts present a shoulder above the grain face of the ordinary Goodyear welt that is formed by a longitudinal strip of folded pliable material such as thin upper leather enveloping a core or wale that, in the cheaper and more numerous imitations, is merely a separate strand of twisted paper that is fed into position during the folding process. This shoulder provides a rib fitting in the crease throughout the fore part of the shoe and is called the "top-deck". Many disadvantages arise from this kind of shoemaking among which are the production of merely an imitation water-tight inseam, and the fact that the flimsy character of the core in no way insures that the shoe will hold its shape under the hard usage and strains of continued wear.

One object of the present invention is to improve the manufacture of shoes of the style described by providing a welting of the ribbed or two-deck type that will more efficiently serve its purpose as a finish at the crease and secondarily as a seal for the inseam.

Accordingly, a significant feature of the invention is found in the manner in which the rib or bead of the present invention is constructed. In order that the rib may function as a sturdy shoulder or crease filler the welt is so constructed that the core or wale which produces the rib is attached to the enveloping material which forms the eventual shoulder. Thus the core and cover form an all-in-one-piece article that can be handled as a unit prior to the step of folding to envelop the core and produce the shoulder formation which lies in or at the crease from toe to heel. The securement of the core to the enveloping material may be in any convenient or desired manner but preferably, although not essentially, the core is an integral part of the material which forms the body portion of the welt. When the core and the welt body are both of material of substantial strength and the core initially is secured to its envelope, then, when folded into position and positioned at the crease by the inseaming operation, superior shoemaking and an enhanced style effect is attained as those skilled in the art will at once recognize.

There is a further highly important function attributable to the particular construction of the preferred form of this invention. The rib is so sturdy and strong that, by reinforcing the inseam, it prevents the shoe from treading over and becoming distorted which may result in injury to the foot. Briefly, it holds the shoe during wear in the original shape that the manufacturer so carefully designed, a desideratum long sought by shoemakers because longer life and greater comfort is attained.

It has hereinbefore been proposed to form a rib or bead as an integral part of the welt, as disclosed in United States Patent No. 997, 350 granted to Warren B. White, dated July 11, 1911. As shown in this patent the bead is formed by partly splitting a thin layer of the welt stock from the grain side of the welt along its inner edge and then folding the split layer upon itself. Welting is now commonly made in continuous lengths by scarfing the ends of the lengths as cut from the hides and overlapping and cementing these scarfed portions to unite these relatively short lengths end to end. If it be attempted to form up welting such as disclosed by the White patent, into continuous strips by scarfing and cementing, the scarfs in the thin layer portion of which the bead is composed are so short that insufficient overlap of the parts is presented for effectual securement and the joints do not hold.

The present invention, in another of its aspects, provides, in its preferred construction wherein the bead is formed integrally with the welt strip, sufficiently strong joints between the ends of the rib or bead strips on the individual pieces of material, to per-

mit these pieces being successfully joined by scarfing and cementing in the usual manner. This may be accomplished by forming a core or wale from the welt body itself of sufficient thickness to provide a proper joint when scarfed and cemented, this core being surfaced or enveloped by a thin layer partly cut from the grain side of the welt body so as to present a surface like that of the adjacent welt body.

For a more complete understanding of this invention reference may be had to the accompanying drawings illustrating the preferred embodiments of the invention in which

Figure 1 is a lateral cross section through the fore-part of a welt shoe having a welt constructed according to this invention.

Figure 2 is a perspective of a portion of a strip of welting showing a joint between adjacent pieces of stock.

Figure 3 is a similar view showing the welting cut preparatory to forming up the shoulder or bead.

Figure 4 is a perspective showing the bead forming portion bent away from the remainder of the welt strip preparatory to rolling it into shoulder or bead form.

Figure 5 is a cross section showing the shoulder or bead-forming operation commenced.

Figure 6 is a similar view of the completed welt.

Figure 7 is a view similar to Figure 6, but showing a slight modification.

Figure 8 is a view similar to a portion of Figure 1, but to a larger scale, and showing the same modification as Figure 7.

Figure 9 is a cross section illustrating a modification in the cutting of the strip of welting.

Figure 10 is a cross section of the welt formed from welting cut as in Figure 9.

In the embodiment of the invention illustrated in detail by Figs. 2 to 6 of the drawing substantially rectangular strips of welting 1 are cut from the hide and united end to end by scarfing the ends of the strips in mating relation and overlapping the scarfed portions of adjacent strips and cementing them in position, such a scarfed joint being indicated at 2. If desired the strand thus produced may be grooved on its lower face as at 3 to form the usual inseam stitch-receiving groove. Next the strand is cut in from its flesh side or lower face diagonally and part way through as shown at 4 in Figure 3, this cut on this face being parallel and adjacent to its inner edge and inclined toward this edge. At the upper extremity of this cut or incision 4, the strand is incised at 5 parallel to its grain side or upper face toward its outer edge 6. The incisions 4 and 5 extend lengthwise throughout the entire strand, no attention whatever being paid to the scarfed joints between the successive pieces of stock. These incisions form a thin strip or flange portion 7 cut from the welt body having along its free edge portion a narrow rib strip 8 of the flesh portion of the welt stock. As shown the core or rib strip 8 is of substantially rectangular cross section, although it might be otherwise shaped if desired. These unitary cut portions are then bent upwardly disengaging the narrow rib 8 from the edge of the body portion, this being shown in Figure 4. The narrow rib 8 is then rolled against the inner face of the flange 7 and cemented into contact therewith as shown in Figure 5 and this rolling is continued in a direction toward the attached edge 9 of the flange 7 forming a core or wale from the rib 8 which is enwrapped or enveloped by the flange 7. Finally the lower flat edge 10 of the rib 8 is brought down against the upper surface 11 of the body portion as presented by the incision 5, this being shown in Figure 6. Thus the rib 8 furnishes a solid core which is surfaced by the flange portion 7 and forms a shoulder rising above the grain side of the welt body. As this flange portion is cut from the grain side of the welt the grain is retained over its entire upper or exposed surface, thus presenting the same finished appearance as the uncut upper face of the welt at 12. The outer margin of the grain or upper face of the welt thus presents a flat lower deck or outer surface and inwardly of this surface it is shouldered by being arched over the core strip 8. The acute angle edge 14 formed on the core strip 8 by this incision may be pressed into rounded form when this core strip is rolled within the flange portion so that it will have no material effect on the upper contour of the rib.

It will thus be seen that the rib is formed with a core strip of substantially the full thickness of the welt blank and of flexible material which furnishes a sufficient overlap at the scarfed joints to insure a proper joint, this overlap being the same in extent as that for the main body portion of the welt. The flange portion 7 being cemented to this core, it derives the full advantage of the joint in the core and hence welting made in this manner may be made in continuous lengths of sufficient strength and flexibility to be used in the same manner as the usual form of continuous welting.

This finished welt is attached in position on the shoe as indicated at *w* in Figure 1 in the usual manner, the bead B formed from the flange 7 and the core piece wrapped therein resting closely in the crease between the upper U and the upper face of the sole as indicated in Figure 1. If desired, the bead may be stitched to the body of the welt by means of a line of stitching 15 extending through the inner wall of the bead as shown

in Figure 7 and through the lower face of the welt preferably back of the stitch receiving groove 3. Where the line of stitching 15 is employed it extends in relation to the inseam stitches 16 of the shoe in the manner indicated in Figure 8. In the embodiment just described the outer edge portion of the welt is of the full thickness of the original welting while the inner portion within the bead is of less thickness since the flange portion 7 has been cut from the upper face thereof. The upper face of this inner portion, however, is not exposed in the finished shoe and it is therefore not material that it does not present the grain side of the leather. The outer sole 17 is attached to the welt in the usual manner by the outsole stitching 18.

Figures 9 and 10 illustrate a modified but yet the preferred construction. In this embodiment the thin core enveloping strip or flange 7 is extended beyond the outer edge of the core or rib 8 as shown at 20, this extension being formed by completely severing a piece 21 of rectangular section from the inner edge of the body. The core or wale 8 thus forms a narrow rib constituting a marked protuberance on the face of the strip 7, to which it is secured, and extending longitudinally of said strip intermediate its longitudinal edges. When the welt of this embodiment is completely formed up, as shown in Figure 10, the thin extension 20 rests on the cut face 11 at the inner edge of the shoulder formation where it is cemented. The inseam stitches of the shoe pass through this extension 20 as shown dotted at 22 in Figure 10 thus serving to retain the bead formed up without requiring a separate line of stitching as shown at 15 in Figure 7 for this purpose.

It will be observed that in each of the illustrated forms of the welt that the core or wale formed by the rib 8 is attached to the enveloping thin strip or flange 7 before the core is enwrapped by said strip to provide a rib, bead, shoulder or upper deck on the grain side of the welt body that eventually is stitched to the outsole. This is a material advance in the maufacture of welting of the ribbed or two-deck type because the rib, bead or shoulder portion of the welt may be handled as a unitary article, i. e. it is, before folding, all-in-one-piece, obviating the separate handling of the core piece during its manufacture.

I believe that I am the first to conceive, in the manufacture of welting of the type described, of the advantage of having the narrow, protruding core or wale secured to the material to be wrapped about it prior to the folding, wrapping or core-enveloping operation. I also believe that I am the first to produce a rib, bead or shoulder that is sufficiently strong and sturdy to maintain its shape and position and continuously present the same appearance until the shoe in which it is embodied is discarded.

Having thus described the preferred embodiments of this invention it should be evident to those skilled in the art that various changes and modifications might be made therein without departing from its spirit or scope as defined by the appended claims.

I claim:

1. A welt having an integral flange and a core strip thicker than said flange incised from the body portion thereof and bent to form a bead to lie in the crease between the sole and upper of a shoe.

2. A welt having a flange and a core strip of greater thickness than said flange and integral therewith incised from the body portion thereof, said core strip being rolled within said flange and forming therewith a bead projecting from the upper face of the welt.

3. A welt having a flange and a core strip of greater thickness than said flange and integral with said flange incised longitudinally from the body portion thereof, said core strip being rolled within said flange to form a longitudinal bead projecting from the upper face of the welt between its side edges and presenting the finished surface of the upper welt face.

4. A welt having a flange and a core strip of greater thickness than said flange and integral therewith incised longitudinally from the body portion thereof, said core strip being rolled within and cemented to said flange to form a longitudinal bead projecting from the upper face of the welt between its side edges and presenting the finished surface of the upper welt face.

5. A welt comprising a strip incised adjacent to one edge longitudinally partly through the thickness thereof and also parallel to the face of the strip toward the opposite edge to form a flange, having a narrow strip longitudinally of its free edge portion integral with the body portion of the welt strip, said narrow strip being rolled within said flange and cemented thereto and to the exposed face of the welt along said parallel incision to form a bead extending longitudinally of the welt along one face thereof between its side edges.

6. A welt comprising a strip incised adjacent to one edge longitudinally partly through the thickness thereof and also parallel to the face of the strip toward the opposite edge to form a flange, having a narrow strip longitudinally of its free edge portion, integral with the body portion of the welt strip, said narrow strip being rolled within said flange cut from the body stock and to form a bead extending longitudinally of the welt along one face thereof between

its side edges, and a line of stitching fixing the bead to the body portion of said strip.

7. A welt comprising a blank strip rectangular in cross section incised adjacent to one edge partly through the thickness thereof from its lower face diagonally toward its upper face and also parallel to the upper face inwardly from said edge to form a flange having a narrow, protruding strip integral with its free edge portion, said narrow strip being rolled within said flange and secured therein and to the face of the welt portion beneath presented by said parallel incision to form a bead extending longitudinally of the welt strip between its side edges on its upper face and presenting the finished surface of said upper face throughout its exposed surface, said diagonal incision forming a beveled inner edge for the finished welt.

8. A welt comprising a blank strip rectangular in cross section incised adjacent to one edge diagonally partly through the thickness thereof from its lower face and also parallel to the upper face inwardly from said edge to form a flange having a narrow, protruding strip integral with its free edge portion, said narrow strip being rolled within said flange to form a bead extending longitudinally of the welt strip between its side edges on its upper face and presenting the finished surface of said upper face throughout its exposed surface, said diagonal incision forming a beveled edge for the finished welt, and stitching extending diagonally through the inner edge of said bead and the lower face of the welt strip.

9. A welt having a bead extending along one face, said bead comprising a core strip integral with the body of the welt and a cover therefor thinner than said core strip.

10. A welt having a bead extending lengthwise thereof along one face between its side edges, said bead comprising a core strip integral with the body of the welt and a cover therefor thinner than said core strip, the body portion of the welt being thinner on one side of said bead than on the other.

11. A welt having a bead extending lengthwise thereof along one face between its side edges, said bead comprising a core strip integral with the body of the welt and a cover therefor thinner than the said core strip, the body portion of the welt being thinner on one side of said bead than on the other by an amount equal to the thickness of said cover.

12. A welt comprising a body portion of leather having a longitudinal bead projecting from the grain side thereof comprising a core integral with said body portion and a cover over said core of less thickness than said core and formed from a layer partly severed from the grain side of said body portion, the grain side of said layer being outwardly presented.

13. The method of making a welt which comprises cutting inwardly from the one face of a welt strip adjacent to one edge longitudinally of the strip and from the inner edge of said cut parallel to the opposite face of said strip toward its opposite edge, thus forming a flange integral with the body of the strip and having a narrow strip longitudinally of its free edge portion, bending the cut portions from the remainder of the strip, rolling said narrow strip portion under toward the unsevered edge of said flange to wrap said flange therearound, and fixing the bead thus formed to the face of the body portion of said strip presented by said parallel cut.

14. The method of making a welt which comprises cutting a welt strip longitudinally to form a thin flange portion united to the remainder of the strip along one edge, and having a core strip thicker than said flange portion extending longitudinally thereof; partly wrapping said core in said flange, and securing said core and flange to the remainder of said strip to form a bead extending longitudinally from one face thereof.

15. A welt comprising a body portion, and a bead extending along one face thereof, said bead comprising a solid core consisting of a strip of flexible material polygonal in cross-section having one flat face resting on the upper face of said body portion and another flat face rising therefrom, and a cover overlying said core strip.

16. A welting comprising a welt body, a flap cut therefrom, a strip having a polygonal cross section inserted beneath said flap, the free edge portion of the flap extending beyond said strip along the welt body substantially to the side edge thereof whereby to permit marginal stitches through the welt to pass through the free edge portion of said flap and secure it.

17. A shoe comprising an insole, an upper, a welting comprising a welt body having a flap cut from the upper portion thereof, a strip inserted between said welt body and the flap, said strip acting through the flap to present a substantially straight wall approximately parallel to and against the upper when the welting is put in place, said flap having an elongated free edge portion extending along the body part of the welt, and inseam stitches passing through said insole, upper, welt body and the flap.

18. In a welt for boots and shoes of the ribbed or two-deck type, a top deck comprising a strip of relatively thin material, characterized by a narrow longitudinal core or wale secured to said strip said core constituting a marked protuberance on one face of said strip which, when the strip is folded smoothly about it, produces a thickness in

the strip providing a longitudinal shoulder.

19. In a welt for boots and shoes a shoulder formation extending longitudinally thereof and adapted to lie within the outer edge of the welt body comprising a pliable strip of material having an attached longitudinal core or wale projecting from its inner surface, forming a unitary structure adapted to be folded so as to encase said core and provide a thickened portion.

20. In a welt for boots and shoes a shoulder formation extending longitudinally thereof and adapted to lie within the outer edge of the welt body comprising a pliable strip of material having an attached longitudinal core or wale projecting from its inner surface intermediate its longitudinal edges, whereby when the strip is folded the core provides a thickened portion with an adjacent margin overlying the welt body at its inner edge.

21. Welting for boots and shoes of the ribbed or two-deck type characterized by a lower deck and a top deck having its outer edge spaced inward from the outer edge of the lower deck, said top deck consisting of a strip of pliable material having a narrow longitudinal core or wale secured thereto and said core protruding a sufficient distance from the inner face of said strip to present a shoulder above the lower deck when said strip is folded smoothly about the core.

22. Welting for boots and shoes of the ribbed type characterized by a longitudinal shoulder spaced from the outer edge of the welt body and formed by a strip of pliable material having a longitudinal core or wale secured to and protruding from its inner surface that is large enough to present, upon folding the strip about it, a portion that is sufficiently thick to produce said shoulder.

23. The method of making shoulders for ribbed welting for boots and shoes which comprises producing a strip from pliable material with a narrow, projecting core or wale on one face, and then folding said strip about said core to thicken the strip.

24. The method of making welting for boots and shoes which includes the steps of producing a thin strip of material having an attached core or wale on one face, of substantial thickness and extending longitudinally thereof, and folding said strip in a manner to enclose said core and form a shoulder.

25. Welting, or the like, comprising a strip of leather having an upper convex surface formed by a thin flange of the grain side of the strip, said flange being supported by a core or wale within said flange, said core being an integral portion of the leather strip.

26. The method of making welting, or the like, comprising cutting a strip of leather longitudinally to form a thin flange at the grain side with a narrow core or wale of substantial thickness left integral therewith, then folding the core inward beneath the flange in such manner that the flange forms a covering therefor, and applying cement to the contacting surfaces before folding.

27. The method of making welting, or the like, comprising cutting a strip of leather longitudinally to form a thin flange at the grain side with a narrow core or wale of substantial thickness left integral therewith, and so located laterally of the flange that a portion thereof extends from each side of said core, then folding the flange and rolling the core inward until the core is covered by the flange, and securing said flange in said position about the core.

28. Welting comprising a leather body with grain and flesh sides and having a bead extending along its grain side, said bead comprising a core strip and an attached surfacing, said core and surfacing therefor being cut respectively from the flesh stock and the grain stock of said leather body.

29. Welting comprising a body having a bead extending along one face thereof, said bead comprising a surfacing of face material partially severed from said body and a core strip integral with said surfacing.

30. A welt strip having an integral flange and a core strip thicker than said flange incised from the body portion thereof, said flange and core strip being adapted to be bent to form a bead to lie at the welt crease of a shoe.

31. A welt strip having a flange with a protruding core strip integral with said flange incised longitudinally from the body portion thereof, said flange being sufficiently pliable to be folded about the core to form a bead on the flanged face of the strip.

32. A welt strip for beaded welting having a flange partially severed from one face thereof, said flange having a narrow core projecting from its inner face, and said core being adjacent to the free edge portion of said flange and foldable within the flange to form a projecting bead.

33. The method of making a welt strip for forming beaded welting which comprises cutting longitudinally part way through said welt strip from its lower face adjacent to its inner edge and from the inner end of said cut toward the outer edge of said welt strip and sufficiently near the upper face thereof to form a pliable flange having a narrow core strip adjacent its free edge portion integral with the body of the welt strip.

In testimony whereof I have affixed my signature.

HARRY LYON.

CERTIFICATE OF CORRECTION.

Patent No. 1,656,564. Granted January 17, 1928, to

HARRY LYON.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, lines 128 and 129, claim 6, strike out the words "cut from the body stock and"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 9th day of February, A. D. 1932.

M. J. Moore,
Acting Commissioner of Patents.