Oct. 27, 1931. P. C. ARNOLD ET AL 1,828,728

SHOE WELTING AND PROCESS OF ITS MANUFACTURE

Filed April 8, 1930

Fig. 1

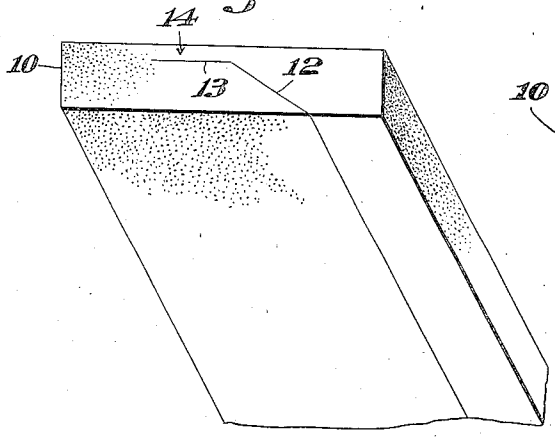


Fig. 4

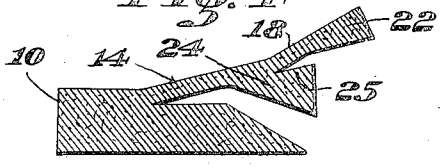


Fig. 2

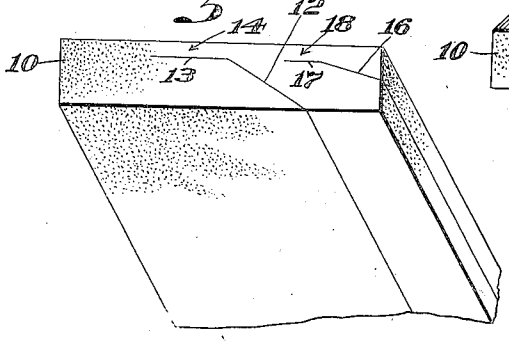


Fig. 5

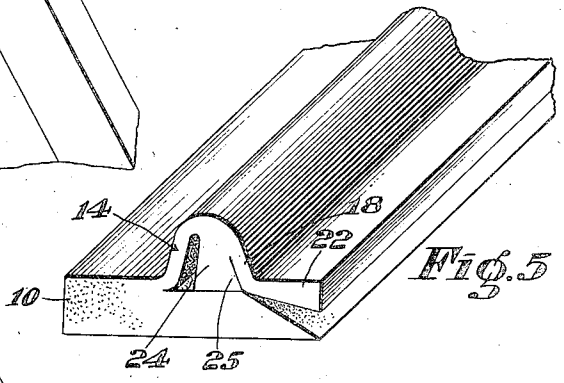


Fig. 3

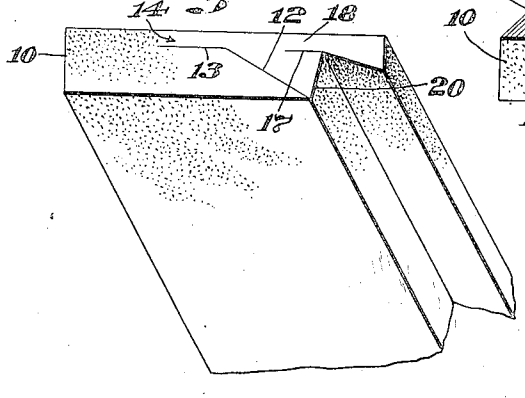
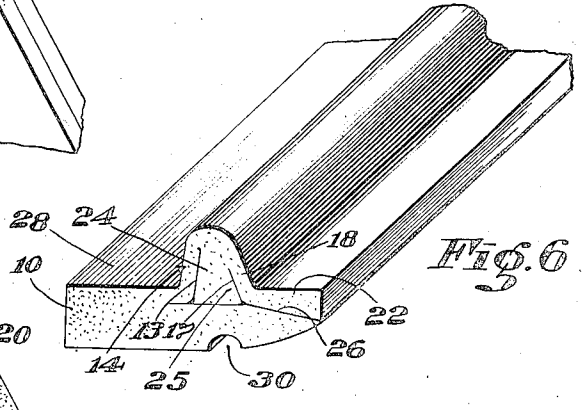


Fig. 6



INVENTORS:
Pearl C. Arnold
William C. Vigard
by Warren G. Ogden ATTORNEY

Patented Oct. 27, 1931

1,828,728

UNITED STATES PATENT OFFICE

PEARL C. ARNOLD, OF WEST HANOVER, AND WILLIAM C. VIZARD, OF BROCKTON, MASSACHUSETTS, ASSIGNORS TO PERLEY E. BARBOUR, OF QUINCY, MASSACHUSETTS, TRADING AS BARBOUR WELTING COMPANY, OF BROCKTON, MASSACHUSETTS

SHOE WELTING AND PROCESS OF ITS MANUFACTURE

Application filed April 8, 1930. Serial No. 442,544.

Our invention relates to welting for shoes and more particularly to that kind of welting which provides a bead to seat in the welt crease of the shoe. Our welting and the process of making it, hereinafter described, is especially adapted to the manufacture of leather welting, although its usefulness is not limited to this material, and is an improvement on the invention of Harry Lyon disclosed in his Letters Patent of the United States No. 1,656,564, January 17, 1928.

The most important considerations in the manufacture of beaded welting are the production of a full-width extension (the deck at the outer side of the bead) and the preservation of strength at the innerseam edge (the deck at the inner side of the bead) for receiving the inseam stitching. In beaded welting of the Lyon type, now generally known as stormwelt, wherein the bead is formed from and remains integral with the stock of the welt strip, in order to obtain a full extension it is necessary to use a welt strip that is 5/32 of an inch wider than the completed welt fashioned therefrom. By using our novel process the additional stock in the welt strip is reduced to 4/32 of an inch, a saving of 20% in extra stock. This is a substantial saving and highly advantageous to the manufacturer when the cost of grain leather suitable for first-grade welting is considered and that orders are for hundreds of thousands of yards.

Our process effects further advantages pertinent to the welt itself. Even with the saving of stock in the welt strip our welt is of full size and with the added advantage of a full 1/32 of an inch wider extension in the smaller sizes and the addition of 2/32 of an inch to the extension in the larger sizes. An adequate extension on beaded welting is a feature much sought after by shoe manufacturers. Furthermore no weakness is developed in the width or strength of the innerseam edge.

Other advantages inherent in our process and the beaded welt produced thereby are ease of manufacture, the ability to "set" the bead properly for seating in the welt crease, and a firmer bead that will lie better against the shoe vamp.

Accordingly our invention comprises welting having the features of construction, and the process of manufacture hereinafter described and then particularly pointed out in the appended claims.

The preferred form of our beaded welting is illustrated in the accompanying drawings the views of which indicate the sequence of steps in the process of manufacture, and in which:

Figures 1, 2 and 3 are views, in perspective, illustrating the first, second and third cuttings, respectively, in the welt strip;

Fig. 4 is a view, in transverse section, indicating how the cuttings are opened to permit cementing;

Fig. 5 is a view, in perspective, showing the welt partly folded, i. e. with the bead core in its ultimate position widthwise the welt before final molding; and

Fig. 6 is a view, in perspective, of the finished welt.

In all figures of the drawings the grain is shown exposed or at the top.

In the embodiment of the invention illustrated in the drawings, the welt strip 10, to form the welt body, is proportioned for the manufacture of a 1/2 inch (width) beaded welt and accordingly is 5/8 or 20/32 of an inch wide instead of 21/32 of an inch as formerly.

Three cutting operations are performed longitudinally of the strip in sequence, as illustrated by Figs. 1, 2 and 3. In describing these toward the grain will be called "upward", toward the outer edge "outward" and toward the sewing edge "inward". The first cutting (Fig. 1) comprises an oblique slit 12 leading upward and outward and distant slightly more than 1/8 of an inch from the sewing edge, or substantially the width of the finished welting from the outer edge. This leg 12 terminates about 1/32 of an inch from the grain face, having a length substantially equal to the height of the bead to be produced. It is then continued at 13 from its upper edge parallel to the grain and toward the outer edge of the strip forming a short cover strip

14 integral with the face of the strip or welt body 10. The second angular cutting (Fig. 2) is similar to the first cutting except that the oblique leg 16 enters about midway the height of the sewing edge, thus producing a wedge-shaped free edge. The leg 17 is in the same plane as the leg 13 of the first cutting forming a second short cover strip 18. The third cutting 20 (Fig. 3) enters from the flesh side and connects the inner or lower edge of the leg 12 to the outer or upper edge of the leg 16, removing a string from the inner flesh corner of the strip (see Fig. 3). The two flaps thus produce one face flap secured to the body by the cover strip 14, that carries at its under face and intermediate its ends a triangular sectioned core for a bead.

The upper edge of the leg 16 is 1/8 of an inch distant from the sewing edge of the body, since that is the desired width of the innerseam edge 22 (Fig. 6) on the finished welting, so that the slit 20 cants slightly inward. By changing the degree of this cant a variation in the setting of the bead can be effected as will be at once recognized by those skilled in the art.

At this stage the strip preferably is passed through a molding machine which shapes it to final form while in a dry condition. This first or semi-molding forms up the elements so that the bead will stand correctly on molding after cementing.

The face flap comprising the bead core 24 and the wedge-shaped innerseam edge 22 is then opened from the body 10, as in Fig. 4, and the inner surfaces are cemented. The slitted strip is now ready to be formed into beaded welting. It will be observed that the first angular slit lies substantially central of the body widthwise and that, on folding, the base of the core 24 (which is formed by the slit 20) is seated with its heel 25 at the angle between the two slit legs 12 and 14 (Fig. 5). The dimensions of the slits are such that with the bead thus located, on molding, a full 1/4 of an inch extension and a full height of bead is produced.

The second molding presses the cemented surfaces together, closing all hollows and also closing the inner beveled edge of the body against the lower face of the wedged innerseam edge to form a joint 26 while maintaining said innerseam edge substantially in the plane of the extension 28 (Fig. 6).

The third or final molding sets the bead at the desired angle to the body 10 and insures the full 1/4 of an inch extension 28. This is essentially a finishing operation (see Fig. 6).

The sewing groove 30, shown in Fig. 6, may be cut at any convenient time during the process. Its position is substantially under the bead.

It will be understood that the dimensions named in this specification relate only to the proportions of the welt illustrated and that with other sizes these dimensions will vary to some extent, except that in all sizes the leg 12 of the first slitting should be substantially 3/16 of an inch long in order that uniformity of height in the bead may be maintained. By practicing the process herein described several new sizes of welting, based on 1/32 of an inch difference in width of the extension, may be made, and greater width of the extension than heretofore is provided on all standard sizes.

The nature and scope of the invention and the characteristic features of the welting together with the preferred method of its manufacture having been specifically described, what we claim as new, is:—

1. Beaded shoe welting comprising a body having a thinned sewing edge, a face flap integral with the body having a bead core at its under face and a thickened free edge at the innerside of said core, said flap being folded about its core to form a bead and an innerseam edge, said thinned sewing edge and thickened flap edge being joined to build up an innerseam edge.

2. Beaded shoe welting comprising a body presenting a sewing edge beveled at its upper face, said body having a face flap carrying a triangular sectioned core strip intermediate its edges and provided with a wedge-shaped free edge all integral with the welt body, said core strip being rolled within the flap to form a longitudinal bead, and said wedge-shaped free edge and beveled sewing edge of the welt body being engaged to build up the thickness of the innerseam edge.

3. Beaded shoe welting comprising a body having an upwardly and outwardly extending bevel at its inner edge, an integral face flap having a bead core and a wedge-shaped free edge, said flap being folded about its core to form a bead, and said wedge-shaped end being engaged with said body bevel to form an innerseam edge in substantially the same plane as the extension at the outer side of the bead.

4. Grain leather shoe welting comprising a body, a longitudinal bead consisting of a grain flap having an integral triangular bead core formed of the flesh and folded within said grain flap, and a sewing edge formed in part by a beveled sewing edge on said body formed of the flesh and in part by a wedge-shaped free edge on said grain flap.

5. The method of making beaded welting which comprises slitting a welt strip longitudinally to form a face flap connected to the body by a narrow cover strip having a second flap connected thereto by a second narrow cover strip, said face flap having an integral depending bead core and its connected flap having a wedge-shaped free edge, said slits leaving a sewing edge on the body beveled at its upper face, then folding the face flap to form a bead within said two cover

strips and an innerseam edge by engaging the bevel on the body and said wedge shaped free edge, and securing the folded parts together.

6. The method of making beaded welting which comprises cutting a strip longitudinally (1) by an angular slit substantially central of the body widthwise to form a flap attached to the body by a narrow cover strip, (2) by a second angular slit extending outward from the inner edge to form a second flap attached to the first flap by a narrow cover strip, and (3) by a third slit connecting said first two slits thereby removing a string from the inner lower corner, folding the first flap to form a bead within said cover strips and the second flap to form an innerseam edge, and pressing and securing the parts together with the inner margin of the body against the lower face of said second flap.

7. The method of making beaded welting which comprises cutting three longitudinal slits in a grain leather welt strip that is wider than the finished welting (1) from the flesh side, and distant from the outer edge substantially the width of the finished welting, upward and outward a distance substantially equal to the height of the bead to be produced, and then further outward below and parallel to the grain, (2) from the sewing edge upward and outward to a line that is distant from the sewing edge substantially the width of the innerseam edge on the finished welting, and then further outward in the plane of the second portion of the first slit, and (3) from the flesh upwar l connecting the inner edge of the first slit to the outer edge of the second slit, whereby a compound face flap is formed integral with the body, one portion of which carries a bead core and another portion of which carries a wedge-shaped edge, and then folding said flap on the body to form a bead and an innerseam edge and securing the parts together.

8. The method of making beaded welting which consists in slitting a grain leather welt strip longitudinally to form a triangular flesh bead core, a beveled sewing edge on the flesh portion of the body, a wedge-shaped grain-faced edge inside the bead core, and a grain cover strip outside the bead core, said parts remaining connected to the flesh by said cover strip, and then folding the triangular core within the cover strip and laying the wedge-shaped grain-faced edge and the flesh body bevel together with the grain face of said edge substantially in the plane of the grain extension at the outer side of the bead.

In testimony whereof we affix our signatures.

PEARL C. ARNOLD.
WILLIAM C. VIZARD.