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WELT GUIDE FOR SEWING WATER TIGHT INSEAMS.
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1,017,059.

Patented Feb. 13, 1912.

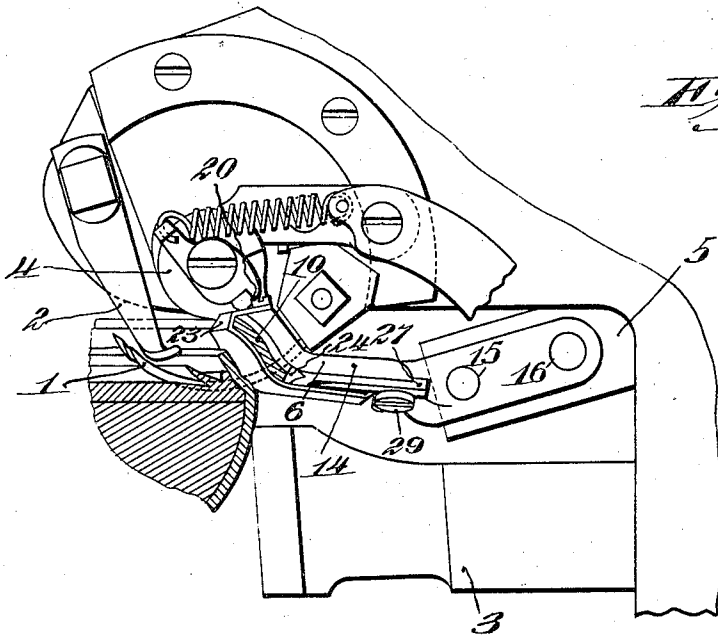


Fig. 1.

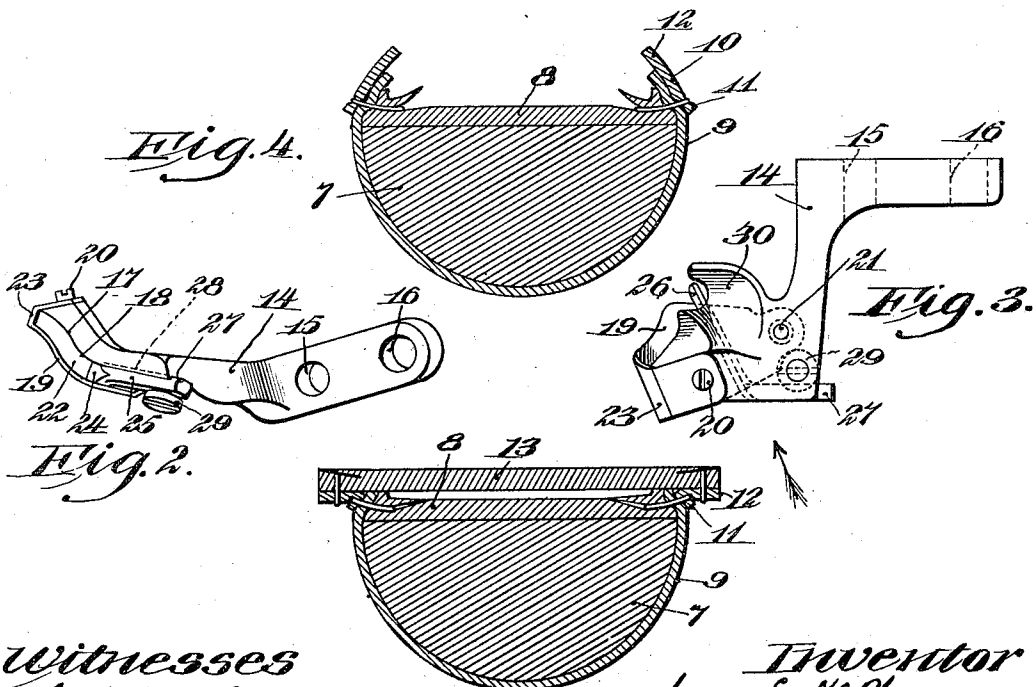


Fig. 4.

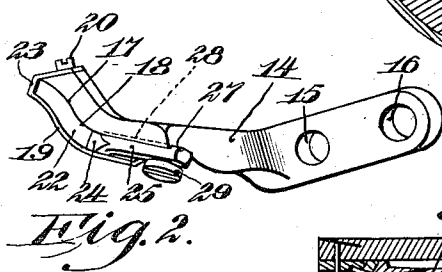


Fig. 2.

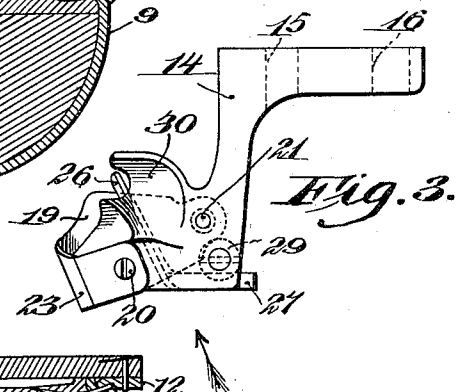


Fig. 3.

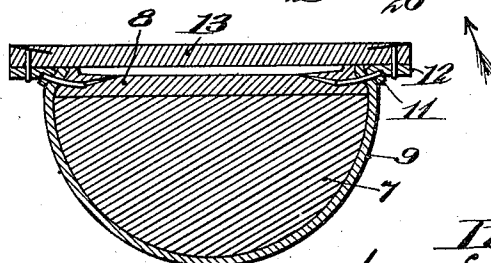


Fig. 5.

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UNITED STATES PATENT OFFICE.

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WELT-GUIDE FOR SEWING WATER-TIGHT INSEAMS.

1,017,059.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed August 15, 1910. Serial No. 577,266.

To all whom it may concern:

Be it known that we, JAMES E. McPHERSON and EDWARD E. ORR, citizens of the United States, residing, respectively, at Canton and Weymouth, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Welt-Guides for Sewing Water-Tight Inseams; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to a welt guide attachment for sewing machines adapted to unite the welt to the upper and insole.

In the construction of the usual Goodyear welt shoe, the finished side of the welt is presented to the lasted insole and upper and sewn thereto by a line of stitching running along the inner edge of the welt (or "upper" edge of the welt, if the position of the welt as it is sewn to the inverted shoe is considered). The outer or "lower" edge of the welt is then beaten flat and sewn to the edge of the out-sole. This leaves a crease between the welt and the upper through which the water may ooze into the shoe. In making the "waterproof" shoe herein described, the welt is sewn to fill in and effectively close this crease against the access of water, making a "watertight" in-seam. To make this watertight in-seam the welt is presented to the lasted insole and upper in a position exactly reversed from that in the usual Goodyear welt shoe. The unfinished face of the welt is presented to the lasted insole and upper, and attached thereto by a line of stitching running along the lower edge of the welt, the "lower" edge being understood to be that edge which is lower in position as the welt is sewn to the inverted lasted shoe. After the welt has been thus sewn to the lasted insole and upper, the upper edge of the welt is then bent over and outwardly, and stitched down upon the edge of the insole, the unfinished side of the welt lying against the outsole and the finished side being presented to view in the completed shoe.

Our invention contemplates the use of a welt guide of special form and the combination of such a welt guide with the usual

type of welt and turn sewing machine whereby such machine may be adapted to sew the welt in a reversed position to manufacture a waterproof shoe.

With the above objects in view the present invention consists in a welt guide attachment for a shoe sewing machine herein-after described, as defined in the claims.

In the drawings accompanying this application, we have illustrated a preferred form of our invention as applied to the well-known Goodyear welt and turn machine which is illustrated and described in the patent to French and Meyer, No. 412,704, Oct. 8, 1889. It is to be understood, however, that our invention is equally applicable to other types of welt sewing machines and that it can be otherwise embodied without departing from the spirit of our invention.

In the drawings accompanying this application Figure 1 is a side elevation of our improved welt guide as applied to a Goodyear welt and turn machine, the shoe and the welting being shown in cross section; Figs. 2 and 3 are side and top views, respectively, of the welt guide detached, the arrow in Fig. 3 showing the direction of feed of the welting strip; and Figs. 4 and 5 are cross sections, respectively, of a lasted shoe after the welt has been sewn to the upper and insole, and after the outsole has been stitched to the welt.

Referring to Fig. 1 of the drawings, 1 is the curved hooked needle, 2 the thread finger, 3 the sliding gage, 4 the needle guide segment and 5 the slide bar to which is attached the welt guide 6. The parts above described are constructed and arranged to operate in a well known manner substantially as set forth in the above mentioned patent to French and Meyer, and further description thereof is considered unnecessary.

Illustrated in Figs. 4 and 5 is the type of shoe in connection with which our welt guide is designed to be used. Attached to the last 7 is the insole 8 and stretched over the last is the upper 9. The lasted insole and upper are presented in an inverted position by the operator to the welt sewing machine, and the welt 10 is stitched against the lasted upper and insole in a reversed position, the unfinished side of the welt lying

against the margin of the upper 9 and stitched thereto at its lower edge 11 as shown in Fig. 4. After the welt has been so stitched to the insole and upper, the upper edge 12 of the welt is turned over and outwardly, and then stitched down upon the edge of the outsole 13, the finished side of the welt thus being exposed in the finished shoe as illustrated in Fig. 5. The middle portion of the welt is thus creased in, filling and protecting the crease between the outsole and upper through which the water usually leaks in the ordinary type of shoe, and so making a shoe with a watertight inseam.

Through perforations 15 and 16 in the body portion 14 of the welt guide are thrust suitable bolts to attach the welt guide to the slide bar 5. The bottom of the body portion 14 of the welt guides is formed with a transversely curved welt guiding surface 17, this curved surface being shaped to form a shoulder 18, which, as the welt is fed beneath it, will present a convexed surface of the lower edge of the welt against the upper and insole where the stitches are to be taken.

A sheet metal guide piece 19 of substantially the same shape as the welt guiding surface of the body portion 14 is attached to the body portion 14 by screws 20 and 21 forming between it and the body portion a welt receiving aperture 22. The welt guiding surface 17 of the body portion forms the top wall of this aperture while the bottom wall is formed by the sheet metal guide piece 19. The upper end of the sheet metal piece 19 is angled over at 23 forming that side wall of the aperture against which the upper edge 12 of the welt 10 bears. The other side wall against which the lower edge 11 of the welt bears is formed by the guiding surface 24 of an elbow-shaped gage piece or "spring" 25. The arm 26 of this gage piece which forms the guiding surface 24 extends between the body portion 14 and the sheet metal guide piece 19, the other arm 27 of the gage piece being clamped, by means of an adjusting screw 29, in a slot 28 cut in the body portion 14. The gage 25 may thus be adjusted to accommodate welts of different widths. It will be noted that this adjustable gage forms that side wall of the welt guide aperture which bears against that edge of the welting strip through which the needle passes. By the adjustment of the gage 25, the distance from the lower edge of the welt to the line of stitching may be varied and hence the width of the edge part of the welt which lies against the shoe upper beyond the line of stitching may be fixed. The front of the upper portion of the welt guide body 14 is provided with a notch or recess 30 through which the curved needle of the sewing ma-

chine passes in its movement to and from the work. This notch or recess 30 is formed directly over that side of the welt guiding aperture in which the lower edge 11 of the welt 10 is carried, the needle passing near the lower edge of the welt 10 and stitching it to the shoe upper and insole, the upper portion of the welt being guided through the aperture 22 above the line of stitching. As the welt 10 is fed through the welt guiding aperture the shoulder 18 presses down and feeds the lower edge of the welt against the lasted upper and insole, the needle forming the stitch through that portion of the welt pressed down by the shoulder 18. After the welt has been stitched to the lasted shoe by the above described operation of the welter, as shown in Fig. 4, it is then turned over and stitched down upon the outsole as illustrated in Fig. 5, forming a waterproof joint between the sole and upper.

Having thus described the invention what is claimed is:—

1. A shoe sewing machine for stitching the welt to a lasted insole and upper, having, in combination, stitch forming mechanism comprising a curved hooked needle, and a welt guide having a welt guiding aperture to feed the welt beneath the needle, and having side walls for said aperture which bear against the edges of the welt, the side wall adjacent the lower edge of the welt being near the path of the needle, and having a welt guiding surface forming the upper wall of said aperture bearing against the finished side of the welt and transversely curved to provide a shoulder near that side wall of the aperture which is adjacent the lower edge of the welt, to present the lower edge of the welt with its unfinished side convexly bent against the lasted insole and upper beneath the needle, whereby the lower edge of the welt is stitched to the lasted insole and upper, and the upper edge of the welt is left projecting beyond the surface of the insole in a position to be later turned over and outwardly, and stitched to the outsole with its finished side exposed, substantially as described.

2. A shoe sewing machine for stitching the welt to a lasted insole and upper, having, in combination, stitch forming mechanism comprising a curved hooked needle, and a welt guide having a welt guiding aperture to feed the welt beneath the needle, and having side walls for said aperture which bear against the edges of the welt, the welt guide being positioned with respect to the needle to bring the path of the needle before the mouth of the aperture and near the side wall which bears against the lower edge of the welt, and having a transversely curved bearing surface provided with a shoulder pressing against the face of the

welt near its lower edge to present the lower
edge of the welt to the lasted insole and
upper beneath the needle, whereby the welt
is stitched near its lower edge to the lasted
5 insole and upper, and the upper edge of
the welt is left projecting beyond the sur-
face of the insole in a position to be later

turned over and outwardly, and stitched to
the outsole, substantially as described.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
