F. W. WARD.

ART OF BOOT AND SHOE MAKING.

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Fig. 1.

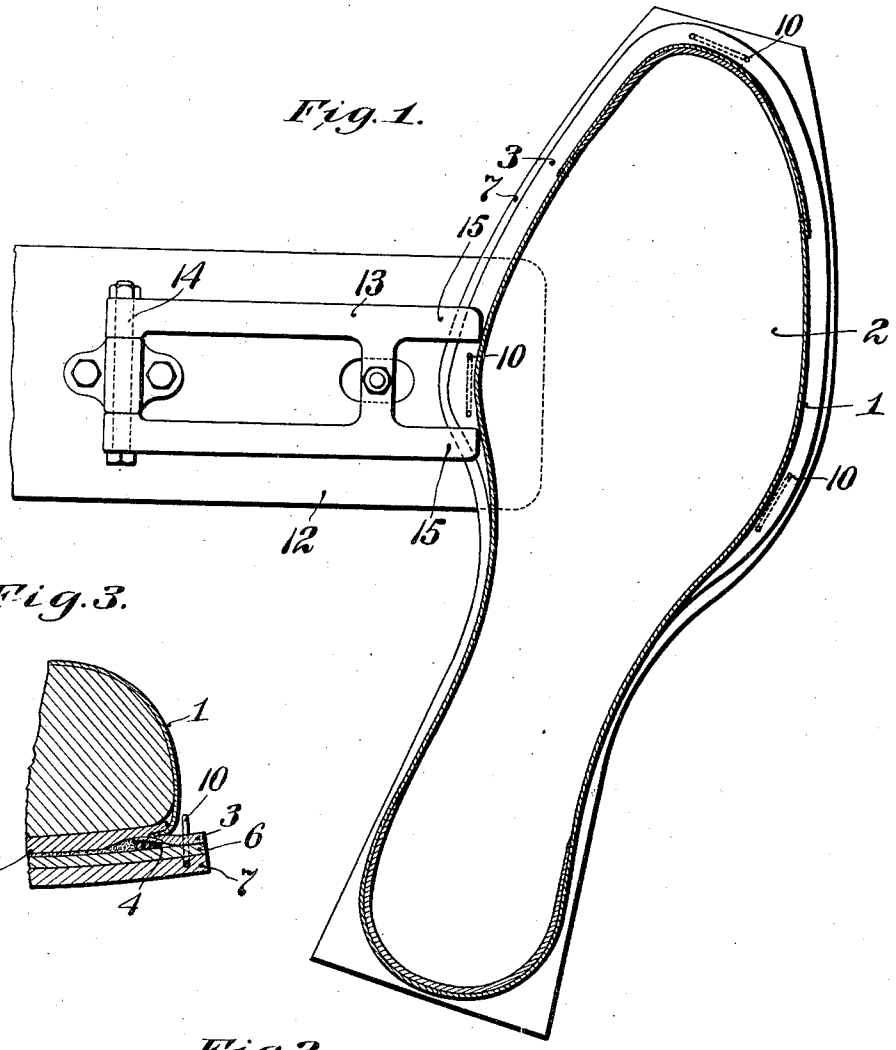
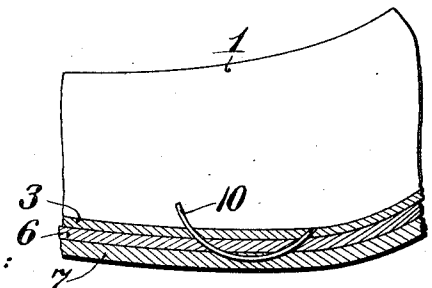


Fig. 3.

Fig. 2.



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ART OF BOOT AND SHOE MAKING.

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To all whom it may concern:

Be it known that I, FRANK W. WARD, a citizen of the United States, residing at South Framingham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in the Art of Boot and Shoe Making; and I 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 an improvement in the art of boot and shoe making, and more particularly to an improved method of temporarily securing the outsole to a lasted boot or shoe which has been rendered impervious to the entrance of moisture by impregnating the shoe and sole in a waterproofing solution of some suitable character.

An outsole is commonly secured to the shoe by first coating it with an adhesive substance and laying it in the proper position upon the bottom of the shoe and thereafter pressing the sole firmly upon the shoe to make the sole conform substantially to the contour of the shoe bottom and engage along its edges with the outstanding welt. This method has been found impractical where the soles are impregnated with a waterproof solution, however, as in this case the cement will not adhere satisfactorily to secure the sole and shoe together. When the cement cannot be employed, the outsole is customarily secured to the shoe by means of several fasteners which are driven through the outsole and insole into the last. This method of securing the sole to the shoe, however, is objectionable, as these fasteners when withdrawn leave an opening through the outsole and insole into the interior of the shoe which cannot be successfully closed and which allows the entrance of moisture and prevents the complete waterproofing of the shoe. In addition, the fasteners fail to hold the edge of the sole in contact with the welt so that oftentimes there is a considerable space between the margin of the sole and welt, making it impossible to operate satisfactorily upon the sole edge in the subsequent rounding operation.

The object of the present invention is to provide a method of temporarily securing the outsole to a lasted boot or shoe which does not interfere with waterproofing or otherwise treating the sole and which enables the sole to successfully undergo the subsequent operations which are performed upon it before being permanently secured to the shoe.

The present invention will be clearly understood from an inspection of the accompanying drawing which illustrates a lasted shoe with an outsole temporarily secured thereto and the apparatus which is employed to aid in the securing of the sole. It will be obvious, however, that the method indicated in the drawing may be performed manually without the use of the apparatus, or may be performed by hand with the assistance of similar apparatus to that illustrated in the drawing.

Referring to the drawing: Figure 1 illustrates a plan view partly in section of the apparatus and a shoe retained in position thereby during the insertion of a fastener; Fig. 2 is a detail illustrating a cross section of a sole and welt and showing a fastener inserted therein to secure the sole to the welt; and Fig. 3 is a detail illustrating a cross section taken at right angles to Fig. 2.

In the specific embodiment of the invention illustrated in the drawing, the method is employed in connection with the manufacture of a welt shoe which comprises an upper portion indicated at 1, and having an insole 2 and a welt 3 secured thereto by a line of inseam stitches indicated at 4. A double outsole is used which consists of an intermediate sole 6 and an outer sole 7.

In the present invention the outsole is temporarily secured to the lasted shoe by a fastening which is located outside of the inseam and which passes through the welt and outsole. In the best form of the invention which has yet been devised, this fastening passes through the welt and partly through the outsole but does not pierce the surface of the sole to mar the finished appearance of the shoe. To this end the outer sole and intermediate sole are secured to the shoe by a curved metallic fastener 10 which passes down through the welt and intermediate sole into the outsole and then back into the welt without projecting through the surface of the outsole. This fastener is inserted obliquely to the vertical plane of the sole as shown clearly in Fig. 3 and is posi-

tioned close to the junction of the upper and welt in order to be inside of the line of outsole stitches when the sole is permanently secured to the shoe. As shown in the drawing, one end of this fastener projects above the surface of the welt and is inclined rearwardly with relation to the direction of feed in the rounding operation, thus enabling the projecting end of the fastener to be depressed and avoid interference with the mechanism of the rounding machine and at the same time facilitate the withdrawal of the fastener when desired.

In order to clamp the outsole to the shoe during the insertion of the fastener, a table 12 is provided upon which a clamping member 13 is pivoted at 14. The clamping member 13 is provided with a pair of outwardly projecting arms 15 which engage and hold the upper surface of the welt upon opposite sides of the fastener. A treadle connection, not shown, is arranged to actuate the member 13 and clamp the welt and sole firmly together during the insertion of the fastener.

In practicing the improved method, the outsole is first positioned in the proper relation to the shoe, after which the outsole and shoe are presented to the clamping mechanism and are clamped firmly upon the table 12. A curved awl is then passed through the welt and partially through the outsole, the opening made by the awl being located inside of the line of outsole stitches. After the awl has been withdrawn, a fastener of soft wire or other material is easily inserted in the opening and is left with its rear end projecting above the surface of the welt. The clamping mechanism is then released and the operation is repeated as many times as desired until the outsole has been secured around its entire edge. In the embodiment of the invention illustrated in the drawing, the outsole is secured by three fastenings, two of which are located upon opposite sides of the shoe at the ball line and the other being located at the toe. After the outsole has been temporarily secured with the requisite number of fastenings, the shoe is subjected to a rounding and channeling operation which may be satisfactorily performed as the welt and sole are secured together at the edge, and the sole is next stitched securely to the welt in order to permanently secure the sole to the shoe. At the completion of the sewing operation, the fasteners are removed, leaving no mark which cannot be removed to detract from the finished appearance of the shoe sole or no opening to allow the entrance of moisture to the interior of the shoe.

Although the preferred method of securing the sole embodies the employment of a fastener located outside of the inseam and passing partly through the outsole, it is to be understood that broadly considered, the invention is not confined to the employment of such fastening means, but contemplates the employment of any fastening means whatsoever for securing the outsole to the welt adjacent the edge and outside of the inseam.

Having thus described the invention, what is claimed is:—

1. That improvement in the art of boot and shoe making which consists in positioning the outsole in the proper relation to the shoe, clamping the outsole and welt firmly together, and inserting a temporary fastener through the welt and outsole outside of the inseam to hold the two together during the subsequent operation of permanently securing them together.

2. That improvement in the art of boot and shoe making which consists in first positioning the outsole relative to the shoe and then inserting a series of temporary fasteners around the edge of the shoe, which are passed through the welt and outsole outside of the inseam to hold the two together during the subsequent operation of permanently securing them together.

3. That improvement in the art of boot and shoe making which consists in positioning the outsole relative to the shoe, and inserting a temporary fastener which is passed down through the welt partially through the outsole and back into the welt to hold the two together during the subsequent operation of permanently securing them together.

4. That improvement in the art of boot and shoe making which consists in first positioning the outsole relative to the shoe, clamping the edge of the welt and outsole together, passing a curved awl through the welt and partially through the outsole, and inserting a temporary fastener in the opening made by the awl to hold the welt and outsole together during the subsequent operation of permanently securing them together.

5. That improvement in the art of boot and shoe making which consists in first positioning the outsole relative to the shoe, clamping the edge of the welt and outsole together, and passing a temporary fastener through the welt and outsole outside of the inseam with one end projecting above the surface of the welt and inclined rearwardly with relation to the direction of feed in the rounding operation.

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