March 6, 1945. A. COCOZELLA 2,370,937

SHOEMAKING

Filed Sept. 19, 1944

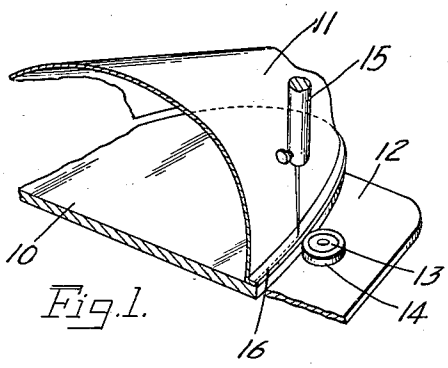


Fig. 1.

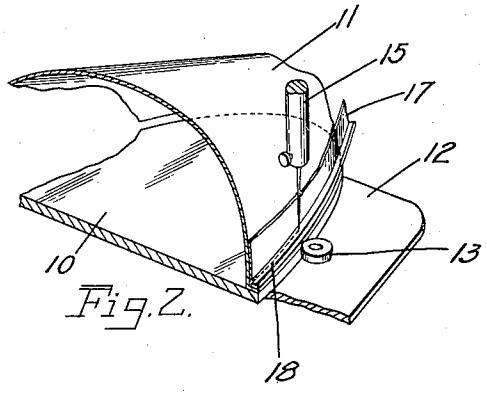


Fig. 2.

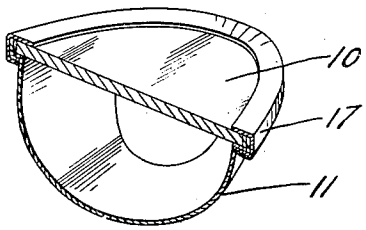


Fig. 3.

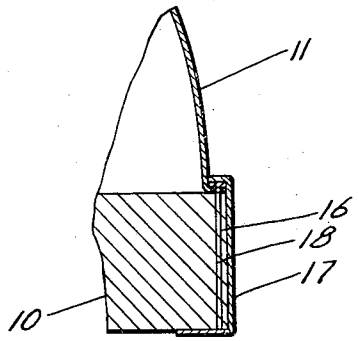


Fig. 4.

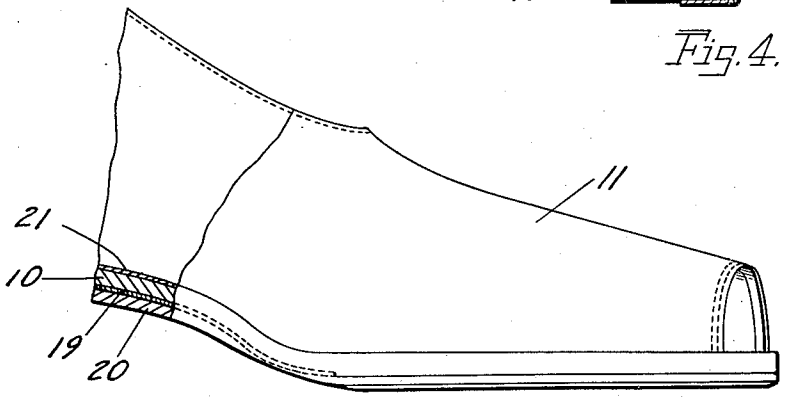


Fig. 5.

Inventor:
Anthony Cocozella.
By Mowry & Witter.
Attorneys

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SHOEMAKING

Anthony Cocozella, Lynn, Mass.

Application September 19, 1944, Serial No. 554,797

1 Claim. (Cl. 12—142)

This invention consists in an improved process of manufacturing shoes of the platform type. Shoes of this type are now in demand but as heretofore constructed have required a great deal of special and highly skilled work which has necessarily been reflected in the cost of the finished shoes. The object of the present invention is so to arrange and divide the various shoemaking operations that each one may be carried out rapidly, without the exercise of exceptional skill, and so that the final result of a series of simple steps will be represented by a shoe of high quality, sturdy structure and improved appearance.

A shoe made in accordance with the process of my invention is characterized by a binding strip which may be of leather or of ornamental fabric, attached at one edge to the edge of a stiff and substantial insole or platform sole. The binding strip is wrapped around the outer edge of this stiff insole and secured in place with its inturned edge completely sealed beneath the outsole. The out-turned margin of the upper is also secured to the insole. The process of my invention is directed more especially to the cooperating steps by which the upper and the binding strip are secured in the organization of the shoe. I have discovered that the improved and valuable results sought may be achieved by carrying out three cooperative steps as follows: First, the out-turned marginal edge of the upper alone is attached to the marginal edge of the thick stiff insole by a line of stitching passing through the upper and the sole in close proximity to the marginal edge of the sole. Second, the binding strip is superposed above the attached edge of the upper, and the binding strip and upper are simultaneously attached to the stiff insole by a second line of stitching located slightly within the first line of stitching; that is to say, located just inside the line of stitching by which the margin of the upper has been attached. Third, while off the last, the binding strip is wrapped outwardly and downwardly about the exposed edge of the upper and about the edge of the thick insole and adhesively secured to the bottom of the insole.

In the first step the operator has merely to bring the edge of the upper into registration with the edge of the insole and attach it to the sole by a simple gauged stitching operation. In the second step the operator has merely to register one edge of the binding strip with the edge of the insole and the attached edge of the upper and then, by carrying out the second simple gauged stitching operation, the upper, on which the strain of wear is to come, is secured to the stiff insole by a second line of stitching and the binding strip is adequately secured by the same line of stitching. In each of these steps the operator has to handle only a single loose piece, that is to say, the upper in carrying out the first step, and the binding strip in carrying out the second step. By this simplification of the attaching operation rapid and accurate work may be performed by operators having little skill or experience in shoemaking and yet results of unusual accuracy are achieved. The step of wrapping the binding strip off the last is advantageous because it may be carried out rapidly and easily while the insole is free to be bent and twisted to a slightly cooperating degree as it is off the last. If the last is inserted before the wrapping step, the sole is held rigidly in arched condition throughout the shank and the wrapping operation is thus rendered substantially more difficult. While off the last the insole remains substantially flat and the wrapping operation is thus simplified.

The employment of a stiff insole of substantial thickness rather than a flexible sock lining or other flexible sole piece makes it possible for the manufacturer to carry out several operations off the last which would otherwise require the presence of a last in the shoe. In addition to facilitating the wrapping operation, this procedure eliminates the operation of spotting a platform sole on a sock lining because the stitching positively insures accurate location of the thick sole piece which constitutes the platform. Further, it reduces the shoemaking operations to handling one thick sole piece or platform instead of two pieces, viz., a flexible sock lining and a platform. All this is particularly advantageous because it reduces the total time during which the last must be tied up in each individual shoe, thus cutting down the number of lasts required and improving the efficiency of the whole operation.

These and other features of the invention will be best understood and appreciated from the following description of a preferred manner of carrying out my novel process, selected for purposes of illustration and shown in the accompanying drawing in which:

Fig. 1 is a fragmentary view in perspective, partly in section, illustrating the step of attaching the upper to an insole,

Fig. 2 is a similar view illustrating the second step of the process, that is to say, the formation

of a stitch line attaching the binding strip and upper to an insole,

Fig. 3 is a similar view showing a portion of the binding strip folded about the marginal edge of the insole,

Fig. 4 is a fragmentary sectional view on an enlarged scale, and

Fig. 5 is a view in perspective of the forepart of the finished shoe showing a portion of the shank in section.

In carrying out the process of my invention as herein illustrated, an insole or platform sole or other sole piece 10 is first selected from any desired insole stock substantial in thickness and stiff in texture, or which may be of ground cork composition in sheet form, and cut or died out in the proper shape for an insole or platform for the shoe to be manufactured. The insole herein shown is shaped with a square, clean-cut marginal edge. The upper 11 is completed with or without a lining as desired and cut accurately according to pattern. The first step of the process may be carried out in an ordinary straight needle sewing machine as suggested in Fig. 1 where the bed 12 of the machine supports the sole 10 and a roller gauge 13—14 guides the marginal edge of the sole 10 in a path beneath the needle bar 15 such that a stitch-line 16 is formed parallel to and closely adjacent to the marginal edge of the sole 10. This line of stitching passes through the out-turned margin of the upper 11 and through the full thickness of the sole 10, as more clearly shown on a large scale in Fig. 4. The edge gauge is rotatably mounted on the sewing machine bed 12 and comprises a freely rotatable roll 13 and a freely rotatable concentric ring 14 which surrounds the roll 13 and provides effective gauging surface for this particular step of the process.

In carrying out the second step of my novel process, one edge of the binding strip 17 is brought into registration with the previously attached edge of the upper 11, the ring 14 is removed from the gauge and the insole 10 advanced in a path gauged by the roller 13, while the second row of stitches 18 is formed parallel to and slightly within the previously formed stitch-line 16. It will be understood that since the effective diameter of the gauge 13 is less than the effective diameter of the gauge 13—14, a wider edge extension is provided beneath the needle bar 15 in carrying out the second step of the process than in carrying out the first stitching step.

Having attached the upper and binding strip as above explained and while the parts of the shoe are still off the last, the binding strip 17 is doubled outwardly over its attached margin and wrapped downwardly and inwardly about the edge of the insole or platform 10, its in-turned margin being cemented in place as suggested in Figs. 3 and 4. In this operation the binding strip encloses and conceals the raw edge of the upper 10 as well as both stitch lines 16 and 18, thus providing the finished ornamental edge desired in the shoe. The two lines of stitching are herein shown as being made of thread of substantially the same weight, but if desired a lighter thread or a longer stitch may be used in stitching the upper alone to the insole than is used for attaching the binding strip and the upper in the stitch-line 18.

A last may be inserted in the shoe at this stage of its manufacture, or somewhat later in the process. However, it is contemplated that at the most convenient time a last will be forcibly inserted and the insole conformed to its contour by steps readily followed in the manufacture of such shoes. A steel shank piece 19 may be conveniently located upon the outer face of the insole 10 and secured in place extending substantially to the ball line as indicated in Fig. 5, thus permanently maintaining in the shoe bottom the desired longitudinal arch curvature of the shank.

The shoe is completed by cementing an outsole 20 in place, shaping it to the longitudinal curvature of the shoe bottom and uniting it to the lower face of the insole in position completely concealing the inturned margin of the binding strip and with its marginal edge flush with the vertical walls formed by the binding strip. A sock lining may be inserted if desired on the surface of the insole. The relation of the parts in the finished shoe is well shown in Fig. 5, and while the finished shoe is shown as being of the open toe style, it will be understood that this is merely one example of a great variety of styles in the production of which my invention may be advantageously utilized.

The sole piece 10 has been herein referred to as an insole since the upper is fastened to it and since it is not subjected in use to wear, but it might aptly be termed a midsole or a platform sole.

Having thus disclosed my invention and described in detail an illustrative process exemplifying it, I claim as new and desire to secure by Letters Patent:

The process of making platform shoes, which includes the steps of first attaching the out-turned margin of an upper to the top face of a stiff insole of substantial thickness by a line of stitching located closely adjacent to the marginal edge of the sole, then simultaneously attaching the upper and one edge of a binding strip to the insole by a second line of stitching passing through both the upper and binding strip inside the said line of stitching first mentioned, subsequently wrapping the binding strip, off the last, about the superposed edges of the upper and insole, and cementing the binding strip to the bottom of the insole, thus enclosing and concealing both lines of stitching after securing the upper in place by a double line of stitching.

ANTHONY COCOZELLA.