

(No Model.)

W. C. CROSS.

PREPARING THE UPPERS OF BOOTS AND SHOES FOR LASTING.

No. 309,440.

Patented Dec. 16, 1884.

Fig. 1.

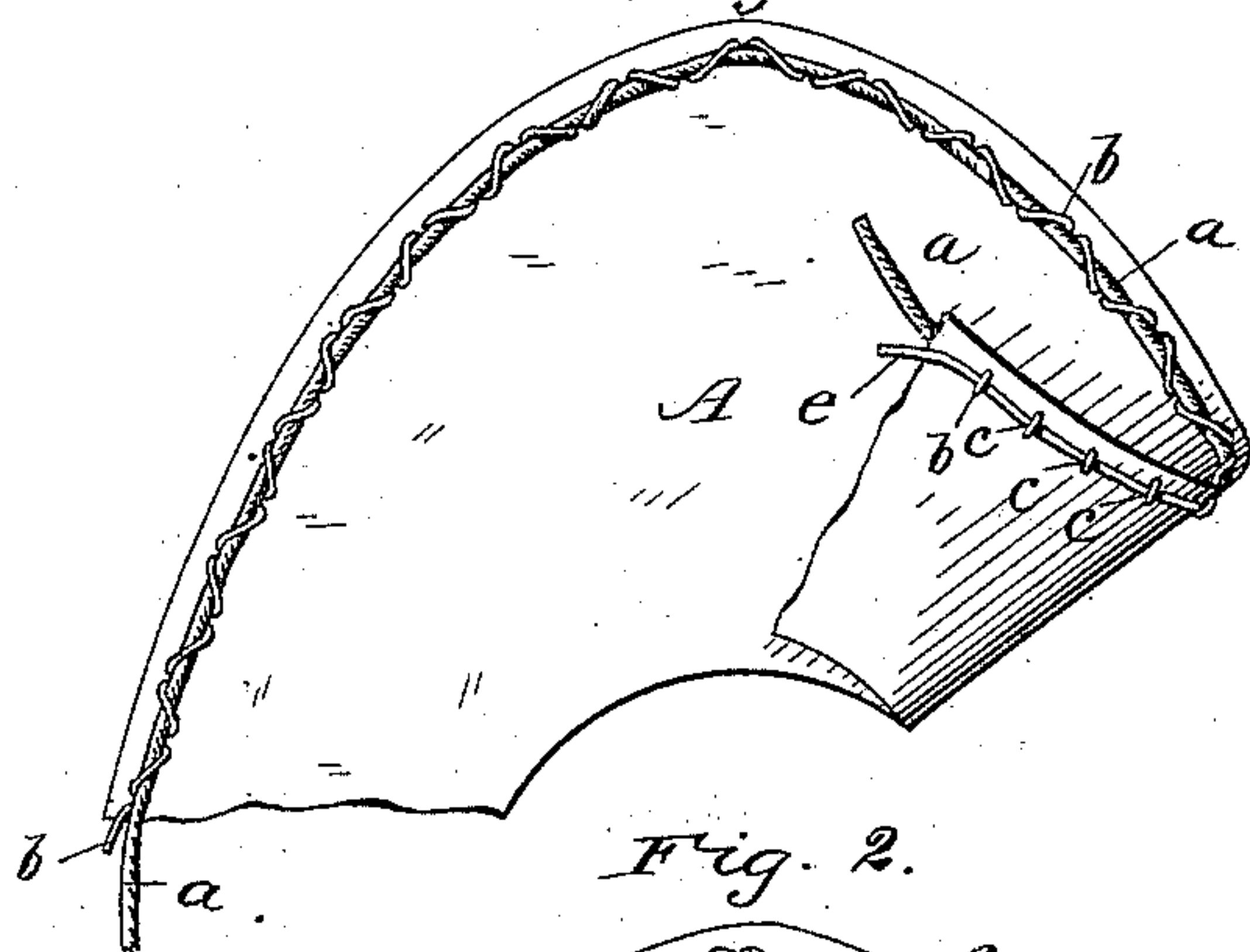


Fig. 2.

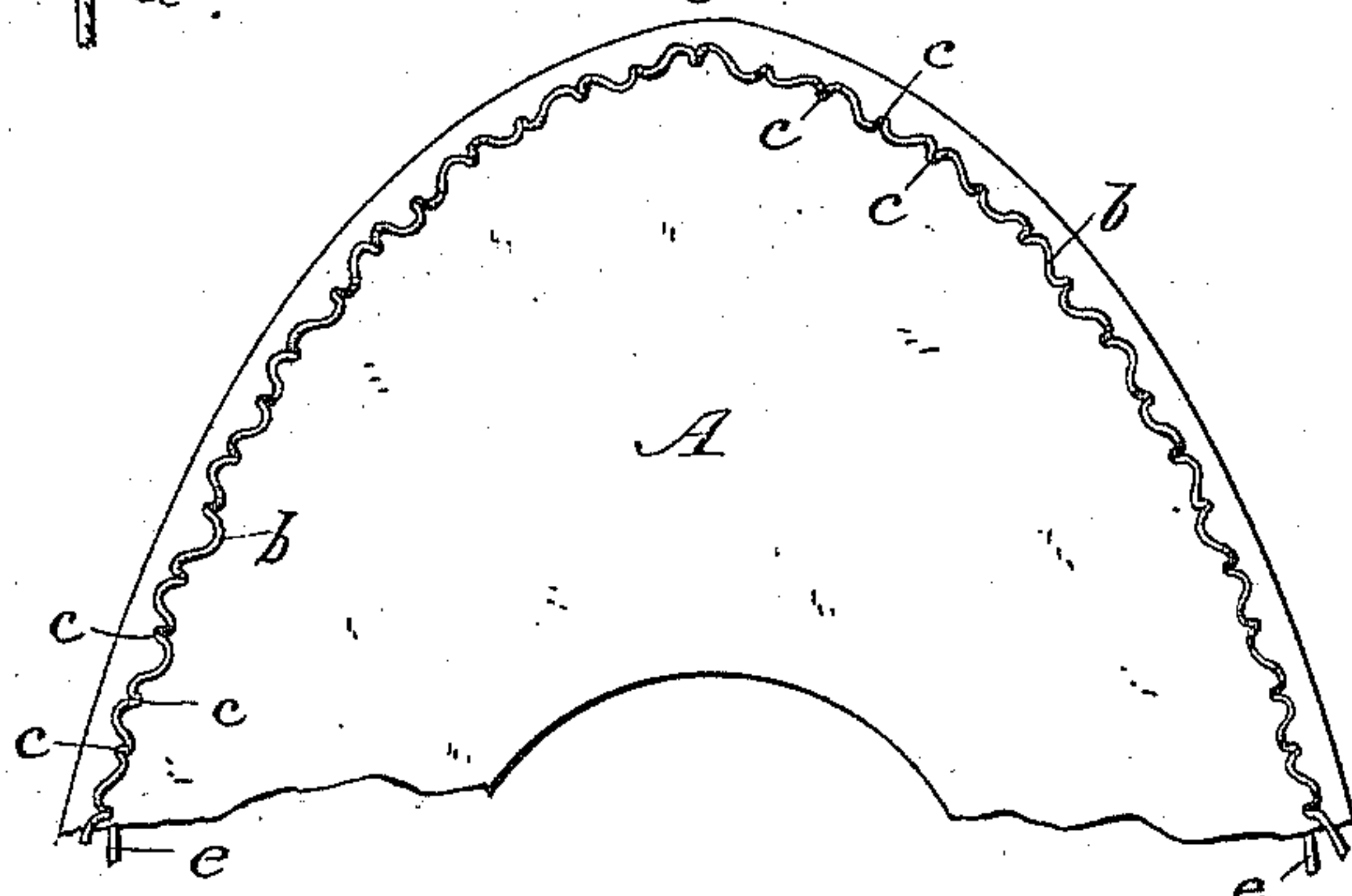


Fig. 3.

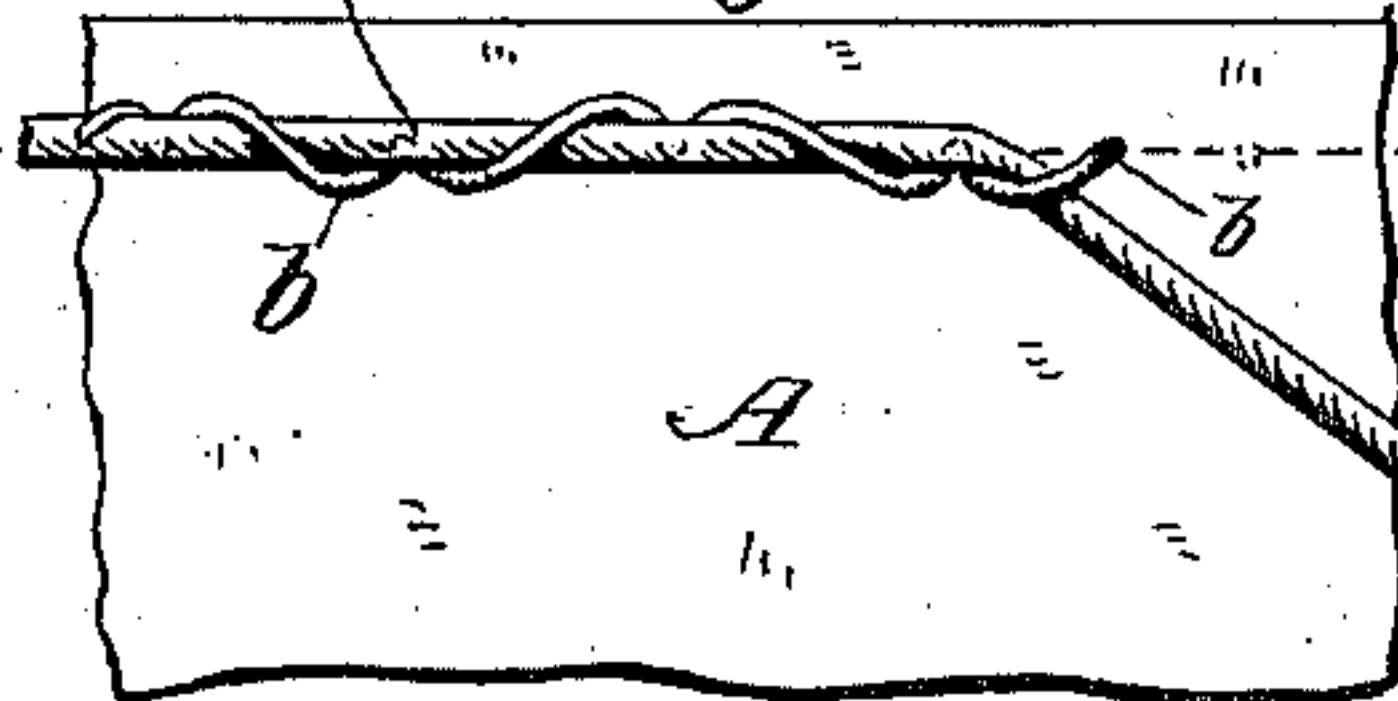


Fig. 4.

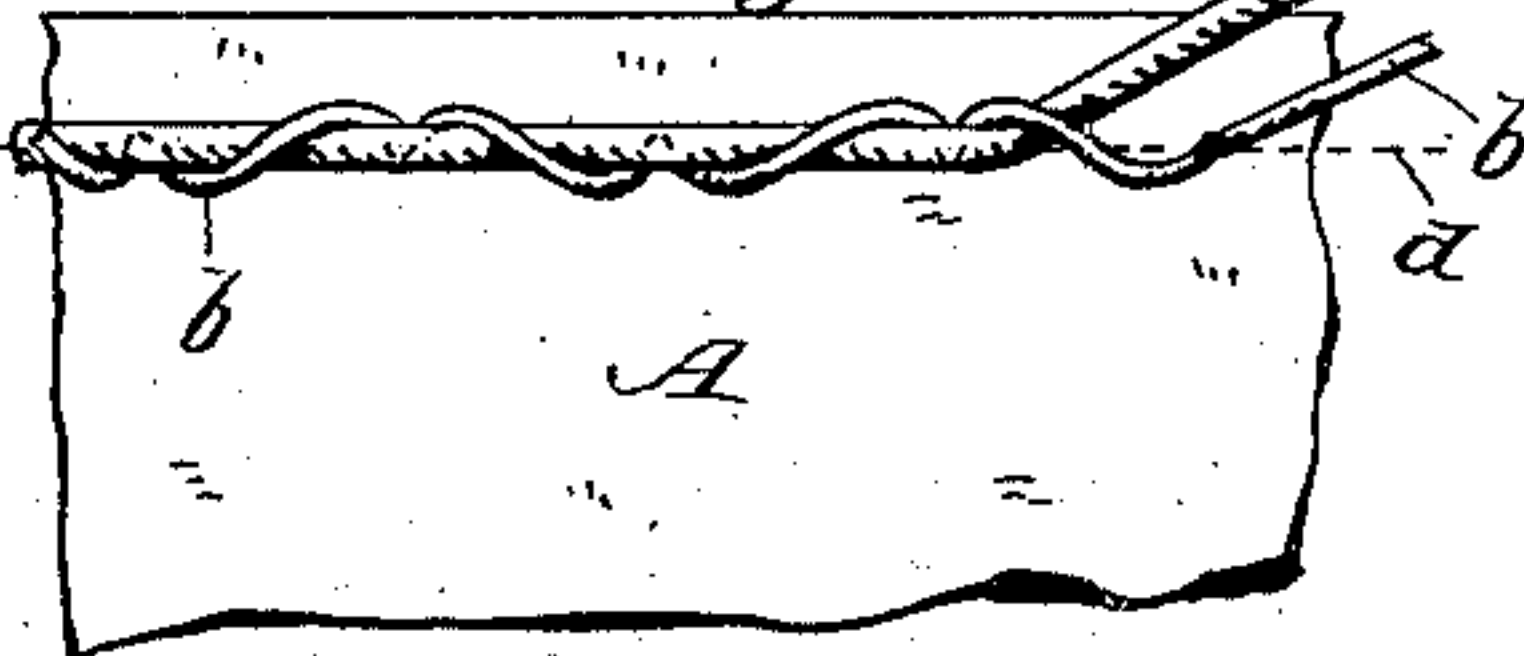
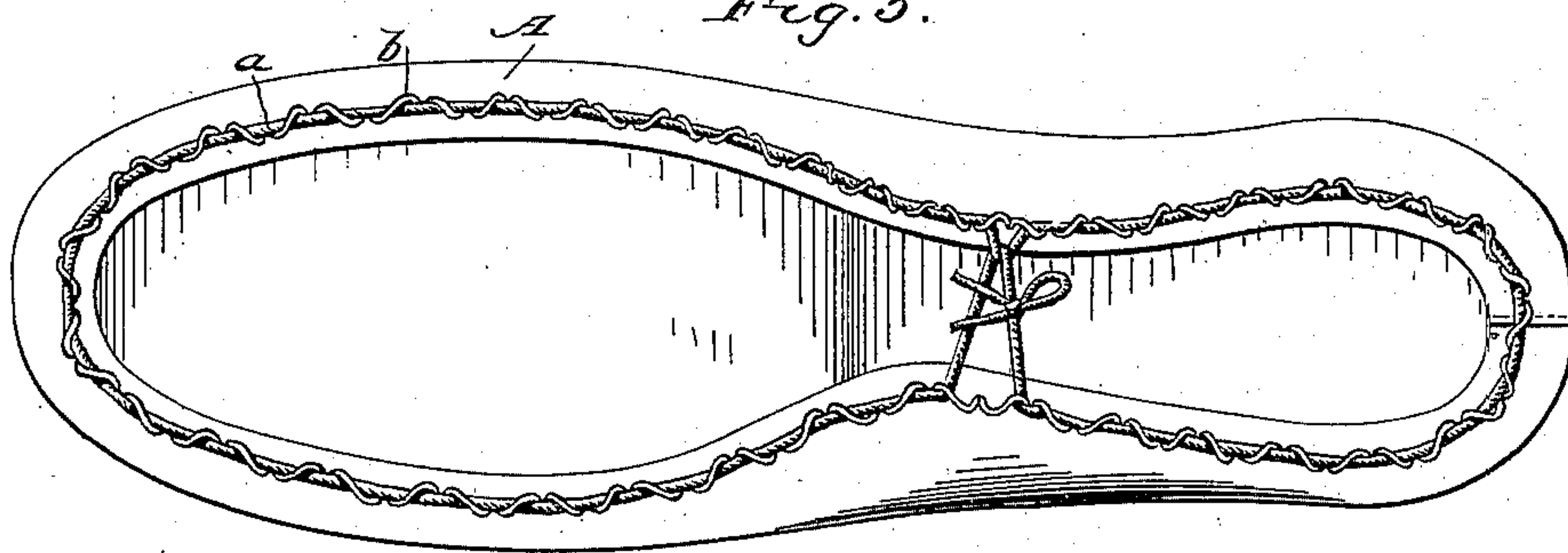


Fig. 5.



Witnesses:

N. N. Low  
E. H. Dick

Inventor:

William C. Cross  
by Marshall Bailey  
his atty.



# UNITED STATES PATENT OFFICE.

WILLIAM C. CROSS, OF BOSTON, MASSACHUSETTS.

## PREPARING THE UPPERS OF BOOTS AND SHOES FOR LASTING.

SPECIFICATION forming part of Letters Patent No. 309,440, dated December 16, 1884.

Application filed October 25, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. CROSS, of Boston, in the State of Massachusetts, have invented a certain new and useful Improvement in Preparing the Uppers of Boots and Shoes for Lasting, of which the following is a specification.

In my Letters Patent No. 306,589, dated October 14, 1884, I have described a way of preparing boot and shoe uppers for lasting, which consists in combining with the upper a draw-cord, which is laid along the edge and upon one of the sides of the upper, and is held in place by a loop-thread or cord laid along the edge and upon the other side of the upper, and bent at intervals into loops whose bights pass through to the opposite side of the upper and receive the draw-cord. This arrangement can conveniently and effectively be used for light work, but is open to some objection when employed in connection with heavy uppers, because a strong and comparatively thick draw-cord, such as required for heavy work, cannot conveniently be used, and because the loop-thread lies at right angles to the draw-cord, in a position both to cut and to impede the drawing of the latter.

It is the object of my present improvement to obviate these objections.

The manner in which I attain the result I have in view can best be explained and understood by reference to the accompanying drawings; in which—

Figure 1 is a view of a portion of an upper prepared in accordance with my invention. Fig. 2 is a like view of the same with the draw-cord removed, so as to show more clearly the position assumed by the loop-thread. Figs. 3 and 4 are diagrammatic representations of the varying positions taken by the draw-cord during the operation of applying it to the upper. Fig. 5 is a plan of an upper lasted according to my improvement.

In the several figures the parts are of exaggerated size, so as to show them more clearly.

In the several figures, A is the upper, *a* is the draw-cord, and *b* is the loop-thread. In this arrangement it will be noted that the draw-cord forms no part of the stitch. Those portions of the loop-thread between the points where the needle passes through the upper

may be considered the loops, and it will be noted that the draw-cord as it is laid along the edge of the upper passes through the successive loops alternately from opposite sides. The draw-cord is laid straight, and the loop-cord is drawn taut over it, the result being that while the line of stitches *c* is straight the loop-thread passes in a zigzag path across the draw-thread, the loops consequently extending diagonally and alternately in opposite directions between the points *c*. By this arrangement the liability of the loop-thread to cut the draw-cord is entirely removed and the latter can be drawn with much greater ease, and, inasmuch as the draw-cord forms no part of the stitch, I can use a very stout cord, or even wire, if desired.

The manner of applying the draw-cord is plainly shown in the drawings, all that is needed being during the intervals between the stitches to incline the draw-cord alternately to opposite sides of the line of stitching—for instance, in Fig. 2, the draw-cord inclined to the right, and when the stitch about to be made is completed, the draw-cord is then inclined to the left, as in Fig. 3, and so on. In these two figures the dotted line *d* indicates the line of stitching to be followed.

In Fig. 5 the upper is represented as drawn over upon the last by means of the draw-cord.

I can readily apply the draw-cord to the upper in the manner above indicated by means of either a lock-stitch or a chain-stitch. The stitch shown in the drawings is a lock-stitch, the loop-thread *b* being the upper thread and the thread *c* the under thread. The draw-cord can readily be laid by a sewing-machine, all that is needed being a draw-cord guide to maintain the draw-cord in proper position, which guide is operated by a cam movement from the needle-bar or other available moving part of the machine to swing or laterally incline the draw-cord, during the intervals between the stitches, alternately to opposite sides of the line of stitching, and out of the path of the needle. Mechanism of this kind is not here illustrated or claimed, inasmuch as I propose to make the same the subject of a separate application for Letters Patent.

What I here claim as new and of my own invention is—

The combination, with a boot or shoe up-

per, of the loop-thread *b* and the draw-cord  
*a*, passing through the successive loops of the  
loop-thread alternately from opposite sides  
thereof, so that the loops shall extend across  
5 or over the draw-thread diagonally and alter-  
nately in opposite directions, as and for the  
purposes hereinbefore set forth.

In testimony whereof I have hereunto set  
my hand this 13th day of October, 1884.

W. C. CROSS.

Witnesses:

GEORGE S. LITTLEFIELD,  
F. A. SMALL.