(No Model.)

G. W. WILLEY.

METHOD OF LASTING BOOTS OR SHOES.

No. 436,550. Patented Sept. 16, 1890.

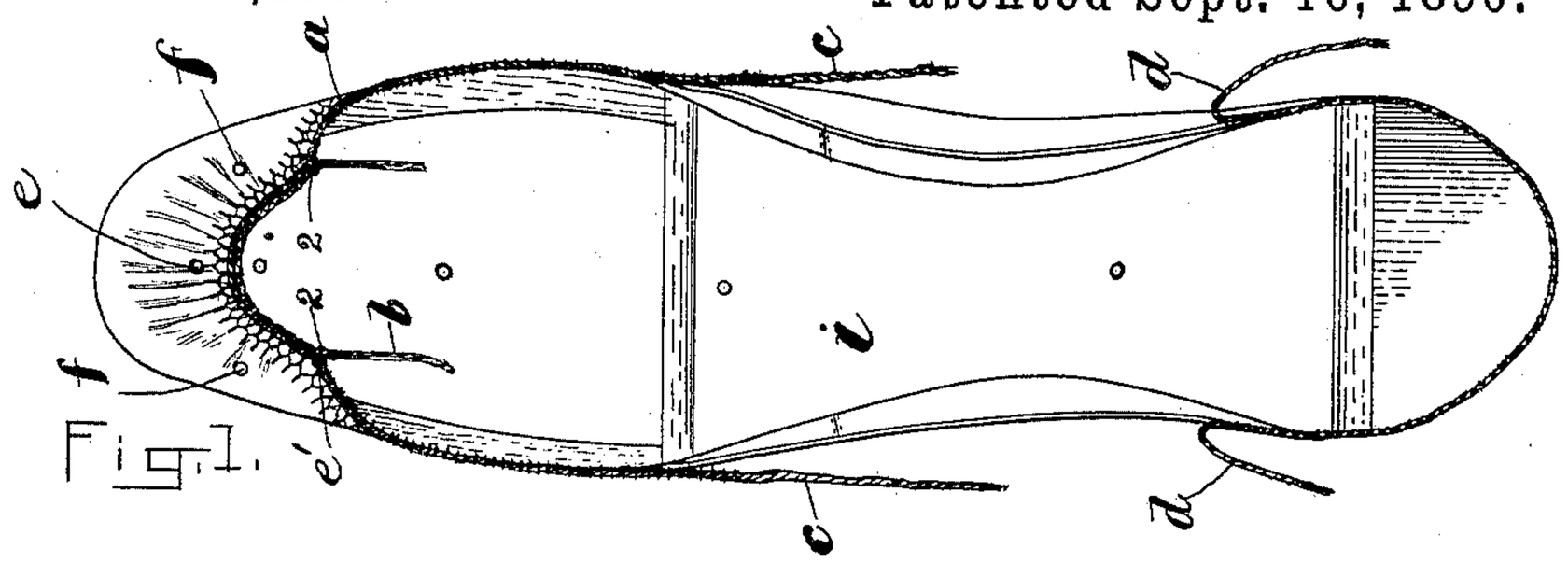

Fig. 1.

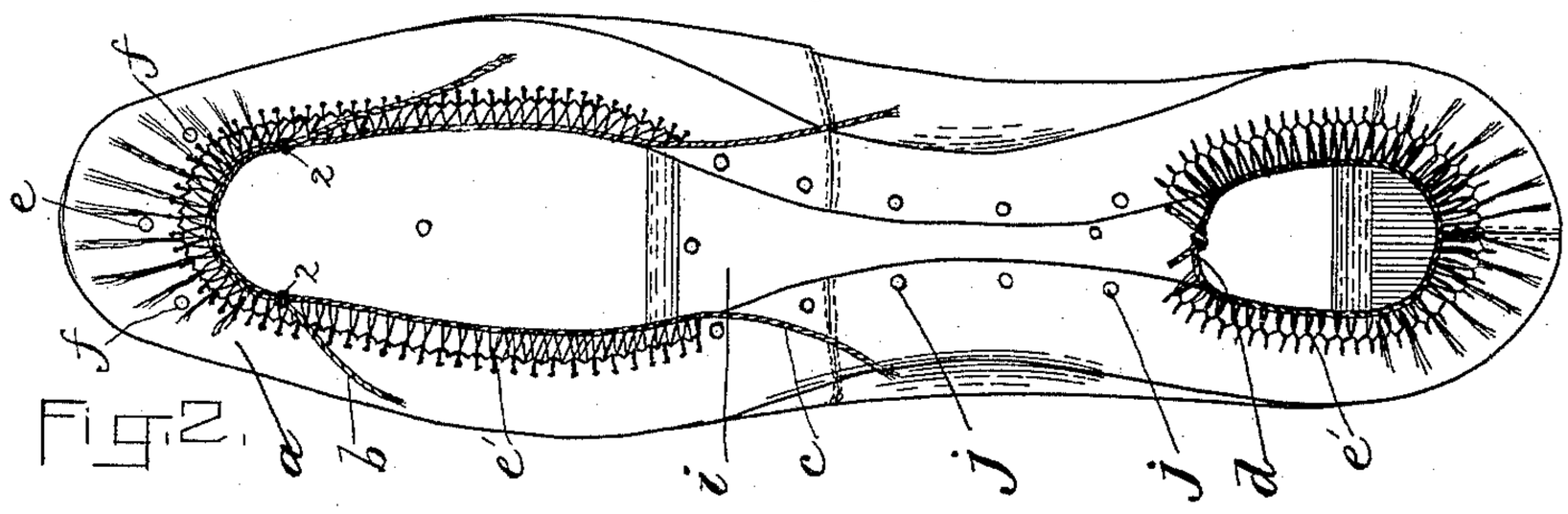

Fig. 2.

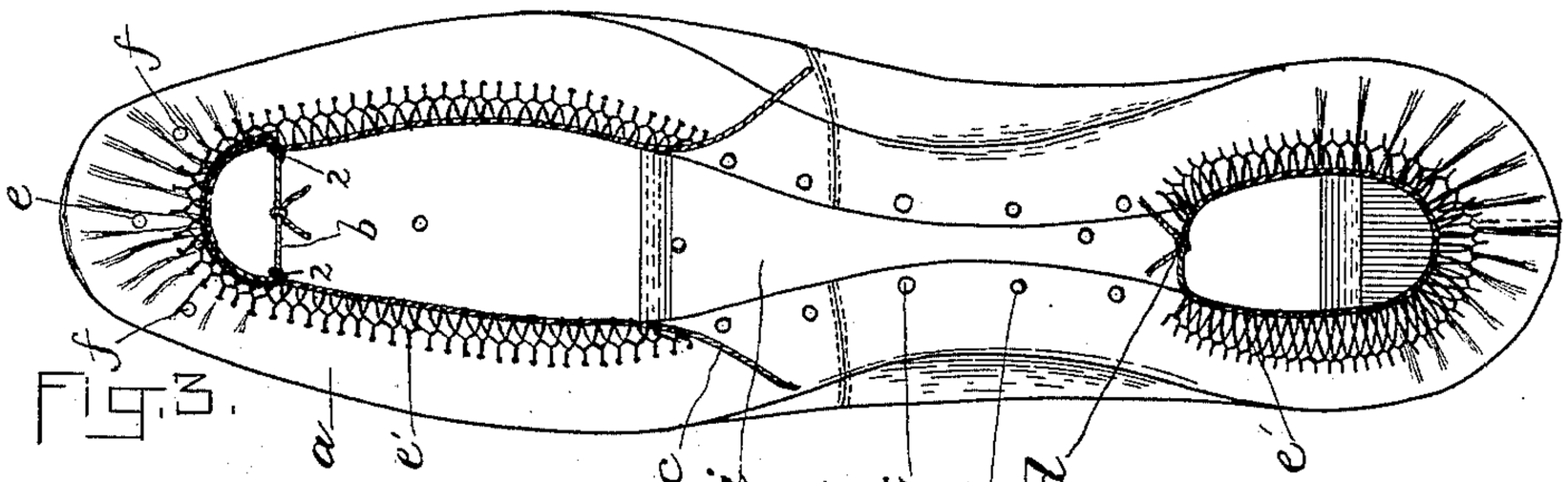

Fig. 3.

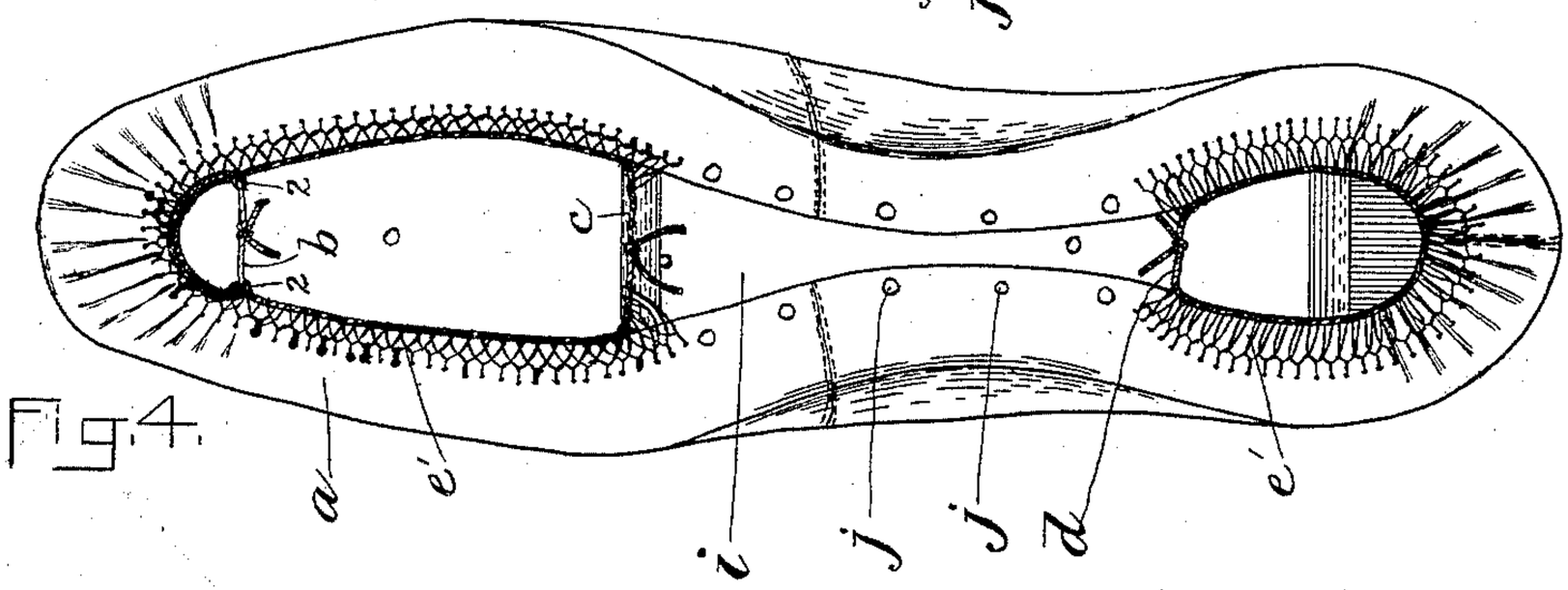

Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE W. WILLEY, OF ATHOL, MASSACHUSETTS.

METHOD OF LASTING BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 436,550, dated September 16, 1890.

Application filed March 3, 1890. Serial No. 342,414. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. WILLEY, of Athol, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in the Method of Lasting Boots or Shoes, of which the following is a specification.

This invention relates to the operation of lasting boot or shoe uppers by the aid of draw-cords, which are applied to the edges of the upper, so that by pulling said cords taut and securing their ends the edges of the upper will be drawn inwardly over the bottom of the last to which the upper is applied.

The invention has for its object to provide an improved method of lasting, which shall not only more perfectly conform the upper to the shape of the last than the methods now in use, but will also enable the operator to exercise a more complete supervision over the work during the operation of lasting.

To these ends the invention consists in the improved method which I will now proceed to describe and claim.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a bottom plan view of a boot or shoe upper and the last on which it is lasted, showing the first step or stage of the lasting operation. Fig. 2 represents a bottom plan view showing the second stage. Fig. 3 represents a similar view showing the third stage of the operation, and Fig. 4 represents another similar view showing the upper after the completion of the lasting operation.

The same letters and numerals of reference indicate the same parts in all the figures.

The upper *a* is prepared for lasting by applying the two cords *b c* to the fore part and the single cord *d* to the heel-seat portion. Said cords are passed through a series of loose stitches *e'*, formed on the upper by means of a sewing-machine known as the "Union Special," said machine making the interlocked portions of the thread entirely on the outer side of the upper, leaving on the inner side only single threads having no appreciable bulk. The cords *b c* in the fore part are of different lengths, the cord *b*, which extends along the toe portion only, being shorter than the cord *c*, which extends from the toe portion backwardly along the edges of the upper to the rear portion of the fore part. The cord *b* is engaged with the cord *c* at 2 2 by means of half hitches or knots, which prevent the cord *c* from slipping or moving endwise after the cord *b* is tied or fastened.

The upper having the cords *b c d* is applied to the last, as usual. The operator then draws the upper over the toe of the last with pinchers, drawing the edge of the upper backwardly from the toe, and after the desired tension is exerted drives a lasting-tack *e* through the center of the toe to hold it in place. He then draws the toe portion of the upper inwardly at points at each side of the center and secures said portions by two tacks *f f*—one at each side of the central tack *e*. I prefer to then last the shank portions of the upper by drawing the edges inwardly over a shank-piece *i*, placed upon the bottom of the last, and securing said edges to the shank-piece by tacks *j*. After this the heel-seat portion may be lasted by drawing in and tying together the ends of the lasting-cord *d* at the heel portion, as shown in Fig. 2, thus exerting a uniform inward pull on all parts of the heel-seat edge of the upper toward the center of the heel, the operator at the same time using his hammer to mold the said heel-seat edge. The upper is now firmly secured to the last, so that the operator is enabled to manipulate the last at his pleasure in completing the lasting of the fore part, in which operation more care and skill are required than at any other portions of the upper. In said operation the workman proceeds as follows: The toe lasting-cord *b* is first engaged with the longer lasting-cord *c* by taking a half-hitch of the latter around the former at two points 2 2 near the free ends of the toe-cord. The toe-cord *b* is then pulled taut, and is caused to exert a uniform inward pull on the portions of the toe of the upper between and around the tacks *e f f*, thus conforming all parts of the toe of the upper closely to the toe of the last, and causing said portion to fit smoothly all parts of the toe of the last, including the bottom, this condition being maintained by tying together the ends of the toe-cord *b* across the bottom of the last, as shown in Fig. 3, the inwardly-turned edge of the

upper held by the toe-cord *b* being preferably flattened down by hammering it against the bottom of the last before the ends of the cord are tied. The lasting of the toe portion is now completed, and the operator next proceeds to draw the edges of the side portions of the upper inwardly over the bottom of the last by the use of pinchers. After said edges are suitably drawn the operator grasps the longer cord *c* and pulls rearwardly on the ends thereof away from the points where the said cord is engaged with the toe-cord and laterally or crosswise of the boot or shoe, first toward one side and then toward the opposite side, thus drawing first one side edge of the upper and then the other inwardly upon the bottom of the last. The operator hammers each edge down upon the bottom of the last after drawing it to place, thus molding said edges, and, finally, after the said edges are suitably drawn, molded, and conformed, he ties the ends of the said main cord *c* together at the rear portion of the fore part, as shown in Fig. 4, the cord being thus caused to hold the side edges of the upper in the position to which they were drawn by the operator's pinchers. This completes the lasting operation.

I claim—

1. The improved method of lasting, the herein-described upper having a plurality of draw-cords around the fore part, one around the toe portion and the other around the toe portion and extending to the rear portion of the fore part, both cords being connected, as described, which consists in placing the same upon a last and gathering in and securing the toe part by temporary lasting-tacks, then drawing in and securing the toe lasting-cord, thereby completing the lasting of the toe portion and then lasting the sides of the fore part by drawing the longer cord backwardly from the toe, pulling the ends of said cord crosswise of the shoe in opposite directions to hold the edges of the upper in place, and at the same time molding said edges upon the bottom of the last by hammering, and finally securing the rear ends of the said longer cord, thereby retaining the edges of the fore part in position, as set forth.

2. The improved method of lasting, the herein-described upper having a plurality of draw-cords around the fore part, one around the toe portion and the other around the toe portion and extending to the rear portion of the fore part, both cords being connected, as described, and a third cord around the heel-seat portion of the upper, which consists in placing the same upon a last and gathering in and securing the toe part by temporary lasting-tacks, then securing the shank edges of the upper to a shank-piece laid upon the bottom of the sole, then drawing in and securing the heel-seat lasting-cord, thereby completing the lasting of the heel-seat portion of the upper, then drawing in and securing the toe lasting-cord, thereby completing the lasting of the toe portion, and then lasting the sides of the fore part by drawing the longer cord backwardly from the toe, pulling the ends of said cord crosswise of the shoe in opposite directions to hold the edges of the upper in place, and at the same time molding said edges upon the bottom of the last by hammering, and finally securing the rear ends of the said longer cord, thereby retaining the edges of the fore part in position, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 17th day of January, A. D. 1890.

GEORGE W. WILLEY.

Witnesses:
ARTHUR W. CROSSLEY,
W. C. RAMSAY.