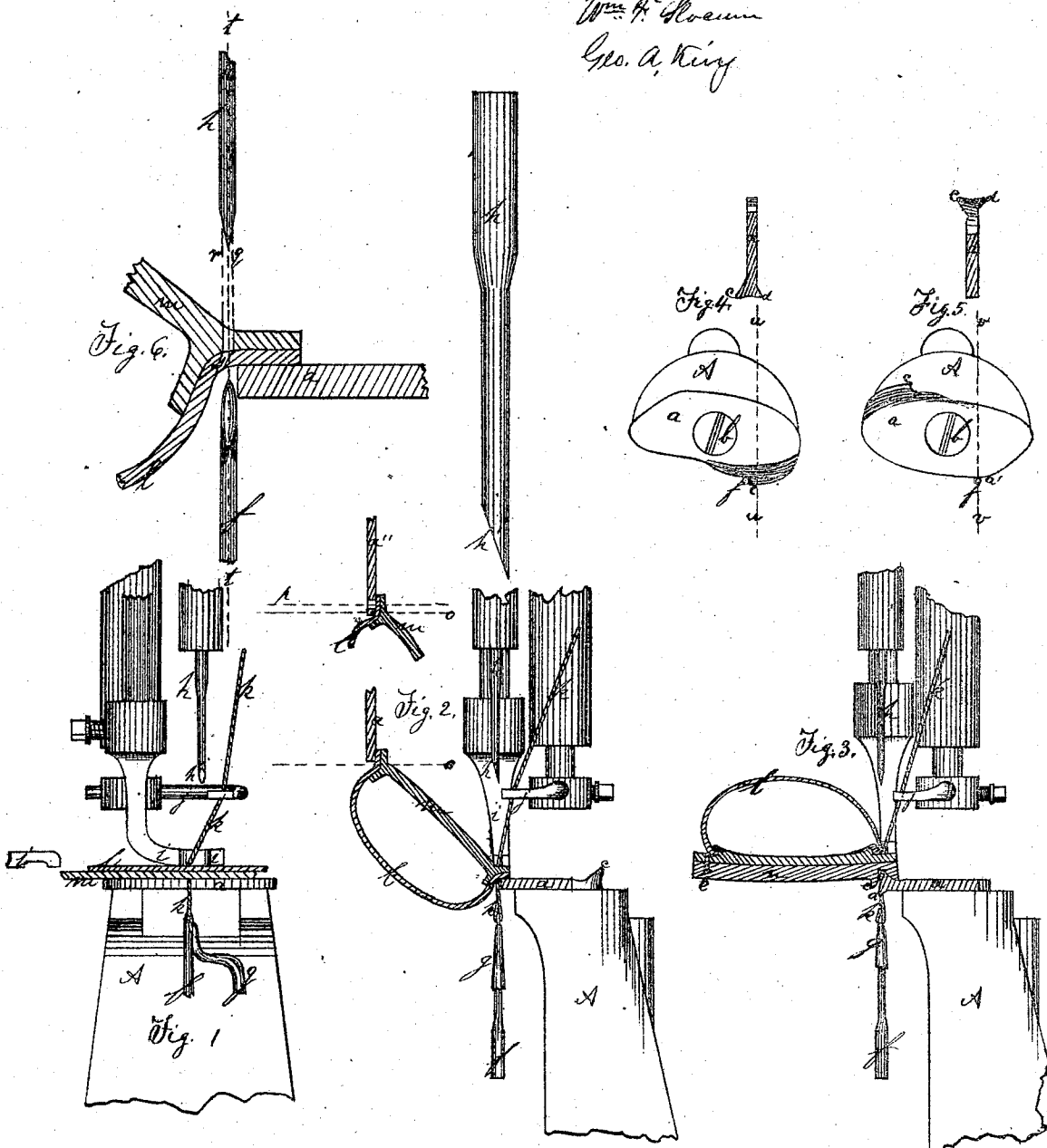


W. WICKERSHAMS IMPROVEMENT ON WAX-THREAD SEWING MACHINES.

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UNITED STATES PATENT OFFICE.

WILLIAM WICKERSHAM, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SEWING-MACHINES FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. 117,709, dated August 1, 1871.

To all whom it may concern:

Be it known that I, WILLIAM WICKERSHAM, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Wax-Thread Sewing-Machines, for sewing the soles on shoes and boots; and I do hereby declare that the following is a full and exact description thereof, reference being had to the drawing and letters of reference marked thereon making a part of this specification.

The first feature of my invention relates to the form of the needle-plate on the top of the post in the wax-thread sewing-machine, on which the work rests while the upper is sewed to the sole; and consists in making said plate of a suitably-curved form on the edge next to the needle without having it extend around the needle, or without having a hole through it for the needle to pass. The second feature of my invention relates to the form of the plate in wax-thread sewing-machines, on which the outsole rests while being sewed to the insole; and consists in making a projection on said plate near to the needle, to extend up into the groove cut for the seam in the outsole. The third feature of my invention relates to the plate in wax-thread sewing-machines, on which the outsole rests while sewed to the insole; and consists in a projection on the under side of the part of the edge near to the needle, forming, with the upper projection on the same edge of said plate, a shield, to prevent the part of the outsole turned out in opening the groove for the seam approaching too near to the needle. The fourth feature of my invention relates to the form of the presser-foot; and consists in forming the part of it which rests on the material being sewed near the needle of one single bar, having a small indentation on the side next the needle. The fifth feature of my invention relates to the awl which makes the perforation in the work for the needle to pass through; and consists in making the taper at the point on one side making the point the opposite side.

Figure 1 is a side elevation of parts of the wax-thread sewing-machine, showing the awl, thread, guide, presser-foot, section of the work, the plate on the post on which the work rests, and the needle with its cast-off. Fig. 2 is a front elevation of the same as Fig. 1, with the addition of an enlarged view of the awl. Fig. 3 is the front

elevation of said machine with the side of the plate having said projections next to the needle, and arranged for sewing the outsole to the insole. Fig. 4 shows a top view of the post with the plate thereon arranged for sewing on the outsole; and Fig. 5 shows the same thing, except the plate is reversed, and arranged for sewing the insole to the upper, with sections in the dotted lines *w* and *v*.

A is the post on which the plate *a* is fastened by a screw, *b*. *c* is the projection on plate *a*, over which the groove in the outsole passes while being sewed to the insole. *d* is the projection on the under side of the plate *a*, forming a broad edge or shield with the projection *c*, to prevent the flange-like portion of the outsole *e* from approaching and getting over the needle while the sewing is going on. *f* is the needle. *g* is the cast-off. *h* is the awl. *h'* is the taper of the point of the same on one side, making the point the lower extremity of the other side. *i* is the presser-foot, having an indentation at *i'*. *j* is the thread-guide. *k* is the thread. *l* is the upper leather. *m* is the insole. *n* is the outsole.

I use the plate *a* with a curved edge extending near to one side of the needle, but not around it, as in ordinary wax-thread sewing-machines, for sewing the sole *m* to the upper *l*, because I cannot get a needle-plate close enough into the split in the edge of the sole when there is a hole for the needle in the edge of the plate. In order to make good work, the seam needs to pass through the upper and through one part of the sole, right in the bottom or inner part of the split, as shown in Fig. 1. The seam should pass through the upper and one part of the sole, where the thread *k* is, or at the other side of the shoe, where the dotted line *o* passes, and the plate *a* as there shown does not interfere with the seam in that place; but it will be seen that the needle-plate *a''*, which does have a hole for the needle through which the dotted line *p* passes, does interfere with a seam passing through the upper and one part of the sole in the dotted line *o*; but the seam, in order to pass through the hole in the plate *a''*, must pass in the dotted line *p*, which is not in the right place to make good work. Therefore I have devised this form of needle-plate, as shown at *a'*, Fig. 5, as the ordinary form, with a slot or hole for the needle,

will not answer to sew the sole to the upper of my shoe and boot, patented August 2, 1870, and as this form answers perfectly. After the insole is attached to the upper I turn it and attach an outsole, *n*, and in order to do this I commonly make a diagonal split from the edge of the outsole up into it, as shown at *e*, Fig. 3, and I make a projection, *c*, on the needle-plate, which extends up into this split, thereby supporting the outsole near to the needle while the insole is being sewed to it. While supporting the sole in the only proper place in the line of the seam and close to the needle while the sewing is going on, this projection *c* answers the further purpose of a guide for the seam. I also make another projection, *d*, on the under side of the needle-plate *a*, and immediately under the projection *c*, so as to form with it an extended and somewhat concave edge, the purpose of which is to serve as a shield to prevent the portion of leather *e* from being opened out in forming the groove for the seam, as shown at *c d*, Fig. 3. I have also devised a presser-foot suitable for making my patent shoe, as one with a slot or a hole for the needle will not answer. My presser-foot *i* is a single bar, pressing onto the work on the opposite side of the needle from the shoe, as shown in Figs. 1 and 2. The form of the plan view is shown at *i'*, Fig. 1. It will be seen, by examining the relation of the presser-foot to the work in Figs. 2 and 3, that if a portion of the presser-foot rested on the work on the side of the needle next to the middle of the shoe, it would necessitate the needle passing through the work nearer to the edge of the leather, which would not make good work either in sewing on the insole or outsole. I have also devised an awl, *h*, shown on a large scale, and also ordinary size in Fig. 2, and I make the taper of the point on one side as is shown at *h'*. The purpose of this awl tapered on one side at the point is to use, in connection with the needle *f*, in sewing the upper of my patent shoe and boot to the sole, thereby doing the work better than it can be done with an ordinary awl. The ordinary awl, *h*, Fig. 6, descends between the dotted lines *r* and *q*, and its point passes nearly straight through the horizontal part of the sole *n*; but where the point strikes

the diagonal surface of the upper *l*, said upper yields somewhat and moves in the direction of the needle-plate *a* until the pressure of the point becomes great enough to enter it; but when the awl has withdrawn and the part perforated has regained its first position, the perforation will be at *S*, some distance from the place where the point of the needle will strike said upper in its ascent, as it will pass up in the dotted line *t*, making a hole in the upper a little at one side of the one made by the awl, so that, by examining a seam round the shoe you will find two rows of perforations in the upper and only one row in the sole. Now, by having the taper of the awl on one side, and the extreme point on the side of the awl next to the needle-plate *a*, it meets this difficulty by striking the upper at a point nearer to the needle-plate than the other awl, and then the one-sided point inclines it to move in the direction of the yielding upper, and when it has pierced said upper, and the upper has regained its first position, the hole in it will be found to be directly over the point of the needle, which in its next ascent will pass through said hole, so that the awl having a point with the taper on one side becomes indispensable for sewing the uppers to the soles of my patent shoes and boots.

I do not claim a tip constructed as described in the patent granted to F. D. Ballow, January 22, 1861.

Having thus described my invention, I will state my claim, as follows:

1. The needle-plate, with the curved edge and without a hole or slot for the needle to pass through, in combination with a presser, substantially as shown and as described.

2. In combination with the above, the awl *h*, constructed and operating as described.

3. The plate *a*, having a curved edge, *a'*, without a needle-slot or hole, and with the projections *c d*, as and for the purpose set forth.

WILLIAM WICKERSHAM.

Witnesses:

A. D. PARKER,
EDW. O. SHEPARD.