H. FOLSOM.

Wax-Thread Sewing-Machine.

No. 198,594. Patented Dec. 25, 1877.

Fig. 1.

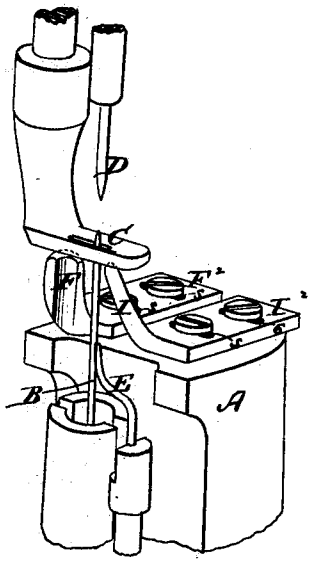


Fig. 3.

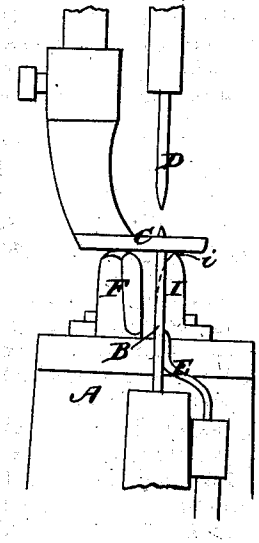


Fig. 2.

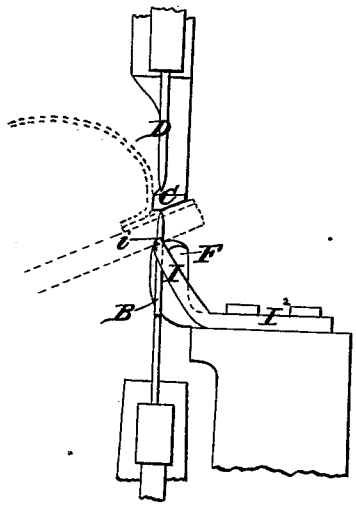
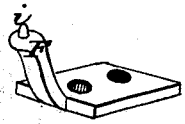


Fig. 4



Witnesses.

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HANNIBAL FOLSOM, OF STOUGHTON, MASSACHUSETTS.

IMPROVEMENT IN WAX-THREAD SEWING-MACHINES.

Specification forming part of Letters Patent No. **198,594**, dated December 25, 1877; application filed November 15, 1877.

To all whom it may concern:

Be it known that I, HANNIBAL FOLSOM, of Stoughton, in the county of Norfolk and State of Massachusetts, have invented certain Improvements in Wax-Thread Sewing-Machines, of which the following is a specification:

In the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view, showing my invention applied to the post of a wax-thread needle-feed sewing-machine. Fig. 2 represents an elevation of the same from the front of the machine. Fig. 3 represents an elevation of the same from the end of the machine. Fig. 4 is a perspective view of a modification.

Similar letters of reference refer to like parts in all the figures.

This invention relates to wax-thread sewing-machines for sewing the outer seam of boot and shoe soles, which employ a post for supporting the work, and in which the work is fed by a movement of the needle.

The ordinary post of a wax-thread needle-feed sewing-machine terminates in a plate which entirely surrounds the needle, and is provided with a slot or opening, through which the needle passes; consequently the plate forms an obstruction on the outer side and in front of the needle, against which the sole of a boot or shoe is liable to strike during the stitching operation, when the sole is inclined sharply, and while the sole is being stitched along the curved shank. It is well known that in order to stitch close to the side of the upper, the sole must be considerably inclined, and that to cause the line of stitching to follow the curve of the shank the boot or shoe must be turned or swung somewhat abruptly toward the right of the operator. While the sole is inclined under these conditions, the bottom of the boot or shoe sole will strike against the outer and front edges of the throat-plate, which will thus interfere with the free manipulation of the boot or shoe, and prevent the line of stitching from being carried so close to the upper as to be concealed by the latter along the shank, such concealment being necessary in consequence of the narrowness of the shank, which does not project from the side of the upper, like the main portion of the sole.

My invention has for its object mainly to facilitate the manipulation of a boot or shoe while it is being stitched, and by "manipulation" I mean inclining the sole, swinging the boot or shoe while it is inclined or in any position, and feeding the boot or shoe between stitches.

To these ends my invention consists in arranging the post of the machine wholly on the inner side of the needle, and dispensing with the throat-plate which usually surrounds the needle, and applying to the post thus arranged a peculiarly-arranged indicator, adapted to enter the channel in the sole immediately in front of the needle, and a rounded work-support and fulcrum located either at the rear or the inner side of the needle, these attachments co-operating with the needle, as will be described.

My invention also consists in certain details of construction concerning the indicator and support, and also the presser-foot, of a wax-thread needle-feed sewing-machine, all of which I will now proceed to describe.

In the drawings, A represents the post; B, the vertically and laterally moving needle; C, the presser-foot; D, the awl, and E the cast-off of an ordinary side-motion wax-thread machine for sewing the outer seam of boot and shoe soles, these parts being constructed and operating as usual, or in any desired manner, excepting the presser-foot, which is beveled on its under side, for a purpose which I will name hereinafter. I represents the indicator or finger, which is attached to the post A in any desired manner. In some cases I prefer to form the indicator on a spring-plate, which is attached to the post A, and holds the indicator upwardly with a yielding pressure, although, if desired, the indicator may be rigidly connected to the post, so as to be immovable or rigid.

The indicator is curved or inclined upwardly from the post A toward the needle, its outer and upper end terminating in an upwardly-projecting rounded nose, *i*, which is in the line of the feed, and is close to or nearly in contact with the front side of the needle when the latter is passing upwardly through the stock.

The nose *i* of the indicator, when in its nor-

mal position, projects, preferably, above the support on which the work rests on the post A sufficiently far to enter the groove in the outer sole of a boot or shoe.

The presence of the nose *i* of the indicator in the channel is indicated by the resistance it offers to any movement of the work crosswise of the channel, and the close proximity of the nose to the needle during the upward movement of the needle necessitates the passage of the needle through the groove when the indicator is engaged therewith. Thus the indicator enables the operator to know at all times when the work is in the right position with reference to the needle.

When the indicator is attached to the spring-plate it is enabled to yield to downward pressure, and thus accommodate itself to the position or inclination of the work, the depth of the channel, and any variations in the thickness of the sole.

The nose *i* of the indicator is rounded, and of such shape as to present no resistance to the turning of the work while the nose is engaged with the groove, the point acting as a pivot.

The inclination of the indicator from the post outwardly and upwardly toward the line of the horizontal movement of the needle produces an unobstructed space under the nose or point *i* on the outside and in front of the needle, in which to turn about laterally toward the right of the operator while stitching along the shank, the form of the indicator and the absence of the usual throat-plate inclosing the needle enabling the work to be freely manipulated.

F represents the support which I employ in connection with the indicator. This support is preferably composed of a block or arm of metal, rigidly attached to the post, and provided with a rounded nose, located either behind the needle, in line with the horizontal movement of the same, or at the inner side of the needle; or the support may be provided with a friction-roller, it being essential that it shall furnish a limited bearing for the work close to the needle, which will permit the feeding of the work with the minimum of friction, and constitute a pivot, on which the work may be turned freely in any direction.

The support is located at such height that its upper portion will support the work being sewed at a point under the presser-foot and close to the needle, the nose *i* of the indicator projecting above the bearing or supporting point of the support.

It will be seen that the support also serves to prevent undue pressure of the work upon the indicator, and the straining of the latter and the increase of friction which would result therefrom.

By the joint use of the support and indicator, in connection with the laterally-moving needle, I am enabled to dispense with the usual throat-plate, obviate the friction incident to the use of the throat-plate, and the obstruction to the inclination and turning of the work caused thereby, keep the needle in the channel at all times without difficulty, and turn the stock freely in all directions.

When the support F is located back of the needle, and in line with the horizontal movement thereof, as shown in Figs. 1, 2, and 3, I prefer to make the support and indicator on separate plates F^2 I^2, and adapt these plates for independent adjustment on the post, so as to increase or diminish the distance between them, thus enabling the position of the indicator and support to be varied with the length of the stitch taken by the machine, so that in case a long stitch is taken, as in sewing heavy goods, the support and indicator may be placed farther apart, and in taking short stitches on light work they may be placed nearer together, to prevent the leather from being bent between the support and indicator by the downward pressure of the awl. The support and indicator are rendered adjustable preferably by making slots *s s* in the plates on which they are located, and passing the screws which secure the plates to the post through these slots.

When the support is located on the inner side of the needle, I prefer to locate the support and indicator on a single plate, which is adapted to be secured to the top of the post, in place of the ordinary throat-plate. I am thus enabled to apply my improvements to a machine without any alteration of the latter, other than removing the throat-plate and shortening the post to the necessary extent. The indicator and support and their plate or plates constitute sewing-machine attachments which may be supplied to the market as articles of manufacture.

If desired, the indicator may be made in one piece with the support, as shown in Fig. 4. In this case the support should be constructed with a point or nose, *i*, rising from its work-supporting surface, and should be located in front of the needle, so that the nose *i* will enter the channel, as before.

The presser-foot is beveled on its under side along its inner edge, for the purpose of enabling the foot to bear mainly upon the work at the edge nearest the upper of the boot or shoe, the beveled under side enabling the boot to be inclined while being sewed, without causing the outer edge of the sole and welt to be bent downward by the presser-foot, and preventing the displacement or crowding in of the welt which would result from such bending.

I claim as my invention—

1. In combination with the reciprocating needle, and with the post arranged to support a bearing wholly at one side or back of the needle, the indicator I, inclined upwardly and outwardly from the post, terminating in a point, *i*, lying in close proximity to the needle, in line with the horizontal path thereof, and the

support F, arranged to constitute a bearing and fulcrum for the work at the rear or side of the needle, as set forth.

2. The support F and indicator I, in combination with means, substantially as described, for adjusting said support and indicator laterally, substantially as and for the purpose set forth.

3. The attachment for the post of a wax-thread needle-feed sewing-machine, consisting of the plate provided with the support F and the indicator I, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HANNIBAL FOLSOM.

Witnesses:
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