W. F. TROWBRIDGE.

Sewing Machine Presser Foot.

No. 202,303. Patented April 9, 1878.

Fig. 1.

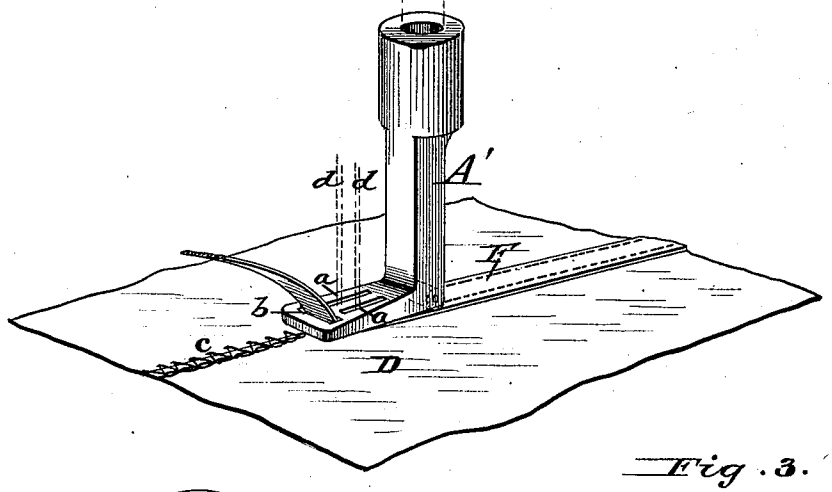


Fig. 2.

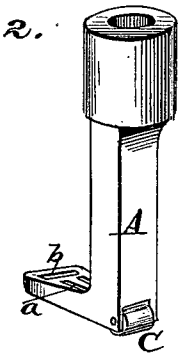


Fig. 3.

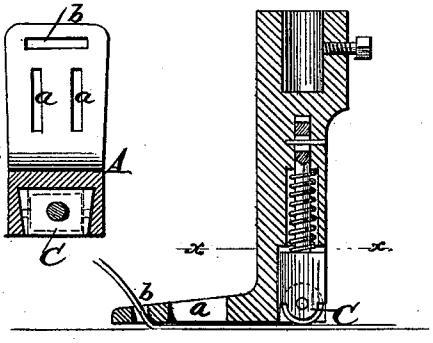


Fig. 4.

Fig. 5.

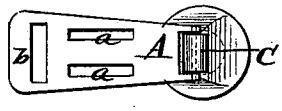


Fig. 6.

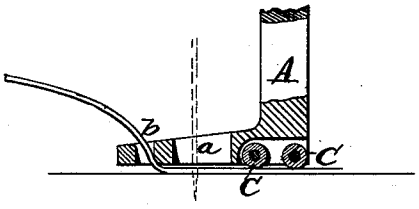
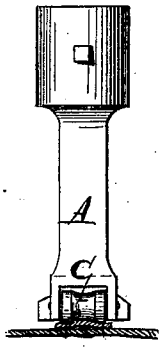


Fig. 7.



Attest:
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Atty.

UNITED STATES PATENT OFFICE.

WILLIAM F. TROWBRIDGE, OF HUDSON, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO WILBUR F. BRIGHAM AND HENRY J. WATKINS, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINE PRESSER-FEET.

Specification forming part of Letters Patent No. **202,303**, dated April 9, 1878; application filed February 1, 1878.

To all whom it may concern:

Be it known that I, WILLIAM F. TROWBRIDGE, of Hudson, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Sewing-Machine Presser-Feet, of which the following is a specification:

This invention relates to an improved sewing-machine presser-foot and stay-guide for use in stitching stay-straps or saddle-pieces over the uniting-seams of boots and shoes. The stay-strap or saddle-piece, as is well known, extends longitudinally of and over the seam to which applied, and is secured in place by two parallel lines of stitching, one on each side of the covered seam. These parallel lines of stitching have been formed simultaneously by a double-needle sewing-machine with waxed thread, and in the application of the strap there has been used a presser-foot having two needle-slots, and in front of said slots a transverse slot, through which the strap is fed, and by which it is guided, the rear portion of the presser-foot resting upon the strap as attached and the stitches as formed, pressing downward with sufficient force to flatten the stitches, close up the needle or awl holes, and cause the strap to lie snugly against the material to which applied. The waxed thread used is usually warmed, to soften the wax and render the thread pliable; and in practice I have found that in using the presser-foot above referred to, a sufficient quantity of this warm wax is scraped off the stitches and adheres to and spreads over the rear portion of the bottom of the presser-foot to materially interfere with and retard the feeding of the work, which it causes to adhere to said foot.

To overcome this difficulty, and also to produce a presser-foot which may be used in forming either straight or curved parallel seams, is the object of my improvement; and to this end it consists in the combination, with a sewing-machine flat-bottomed presser-foot, having cut through it two longitudinal parallel slots a suitable distance apart for the passage therethrough of the needles or awls of a double-needle sewing-machine, of a transverse friction roller or rollers, projecting below the bottom of the presser-foot in the rear of said slots, and having suitable bearings formed in the said foot, whereby the friction between the presser-foot and work is reduced, and the feeding of the work prevented from being retarded by wax scraped from the thread, and causing the strap or saddle-piece in process of stitching to adhere to the presser-foot, and, also, in using which, owing to the stay-guide not projecting below the surface of the foot, the work may be turned thereunder and guided so as to form either straight or curved parallel seams.

In the accompanying drawing, Figure 1 is a front, and Fig. 2 a rear, perspective view of a presser-foot constructed according to my improvement. Fig. 3 is a vertical section, showing the friction-roller provided with yielding or spring bearings. Fig. 4 is a section on line *x x*, Fig. 3. Fig. 5 is a bottom view of the presser-foot, and Fig. 6 a section of a modification; Fig. 7, a modified form of roller.

The letter A indicates a presser-foot for a double-needle sewing-machine, and *a a* are the longitudinal needle-slots, *b* designating a transverse guide-slot for a stay-strap or saddle-piece for covering a seam uniting two pieces of leather. C is a friction-roller, provided with suitable bearings in the rear of the needle-slots. The shank A′ of the presser-foot is adapted, in the ordinary manner, for attachment to the presser-foot bar of a double-needle sewing-machine, and the bottom of said foot I make perfectly flat, except that the periphery of the roller C projects slightly below the bottom surface.

The presser-foot having been properly secured to the bar, the work D, having its two parts joined by a seam, *c*, is placed upon the work-plate of the machine. The stay-strap is introduced downwardly through the guide-slot, and longitudinally under the foot far enough to be pierced by the needles or awls *d d* at their first downward movement. The end of the strap F is thus united to the work, which is, in the further operation of the machine, fed along, and passes under the roller C, which permits the work to be fed easily, while at the same time the spring of the press-

er-foot bar should be strong enough to press the roller upon the work with sufficient force to well flatten the stitches, close the needle and awl holes, and force the strap snugly and smoothly to place as attached, in the ordinary manner. The strap is drawn through the guide-slot *b* a proper distance at each forward movement of the feed, and the said strap is thus automatically laid in a proper position for attachment to the material, so as to evenly cover the uniting-seam and pass in a proper direction under the needles or awls of the machine.

It will be readily seen that by this construction very little wax will be scraped from the stitches, which are now subjected to a rolling friction chiefly, and that, even though the roller should become coated thickly, but little retardation of the work will occur—in practice not enough to occasion any inconvenience.

It will also be seen that after the strap passes downward beyond the surface of the foot there is nothing to prevent it and the work from being turned and guided in any direction desired, as in stitching a plain single seam upon a single-needle machine.

Although I ordinarily construct my improved presser-foot and guide-stay with one roller for pressing out the strap and closing up the needle or awl holes, it may have two, as shown in Fig. 5; and the roller or rollers may be so constructed as to conform to the contour of the seam over which the stay-strap is to be laid—as, for instance, one or more parallel grooves may be cut in the periphery of the roller or rollers, as shown in Fig. 7. I prefer to provide the roller or rollers with spring-bearing, as illustrated in Fig. 3; but they may have rigid bearings instead, without disadvantage to the proper operation of the presser-foot.

The presser-foot of a sewing-machine has heretofore been provided with a roller to rest upon the work, and it is old to sew parallel seams simultaneously, using a presser-foot with two needle-slots, and also to provide a presser-foot with a stay-guide; but such guides have extended in front of or so far under the foot as to embrace so much of the strap as to prevent it from being turned or guided to form other than straight seams.

Having thus fully described my invention, what I claim is—

The combination, with a sewing-machine presser-foot having cut through it two longitudinal parallel slots a suitable distance apart for the passage therethrough of the needles or awls of a double-needle sewing-machine, and a transverse slot across the toe thereof for the passage of stay-strap, of a transverse friction roller or rollers, projecting below the bottom surface of the said presser-foot in the rear of the needle-slots, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

W. F. TROWBRIDGE.

Witnesses:

ALBERT H. NORRIS,

JAMES A. RUTHERFORD.