(No Model.)

L. A. HARRISON.

PRESSER FOOT FOR SEWING MACHINES.

No. 438,623. Patented Oct. 21, 1890.

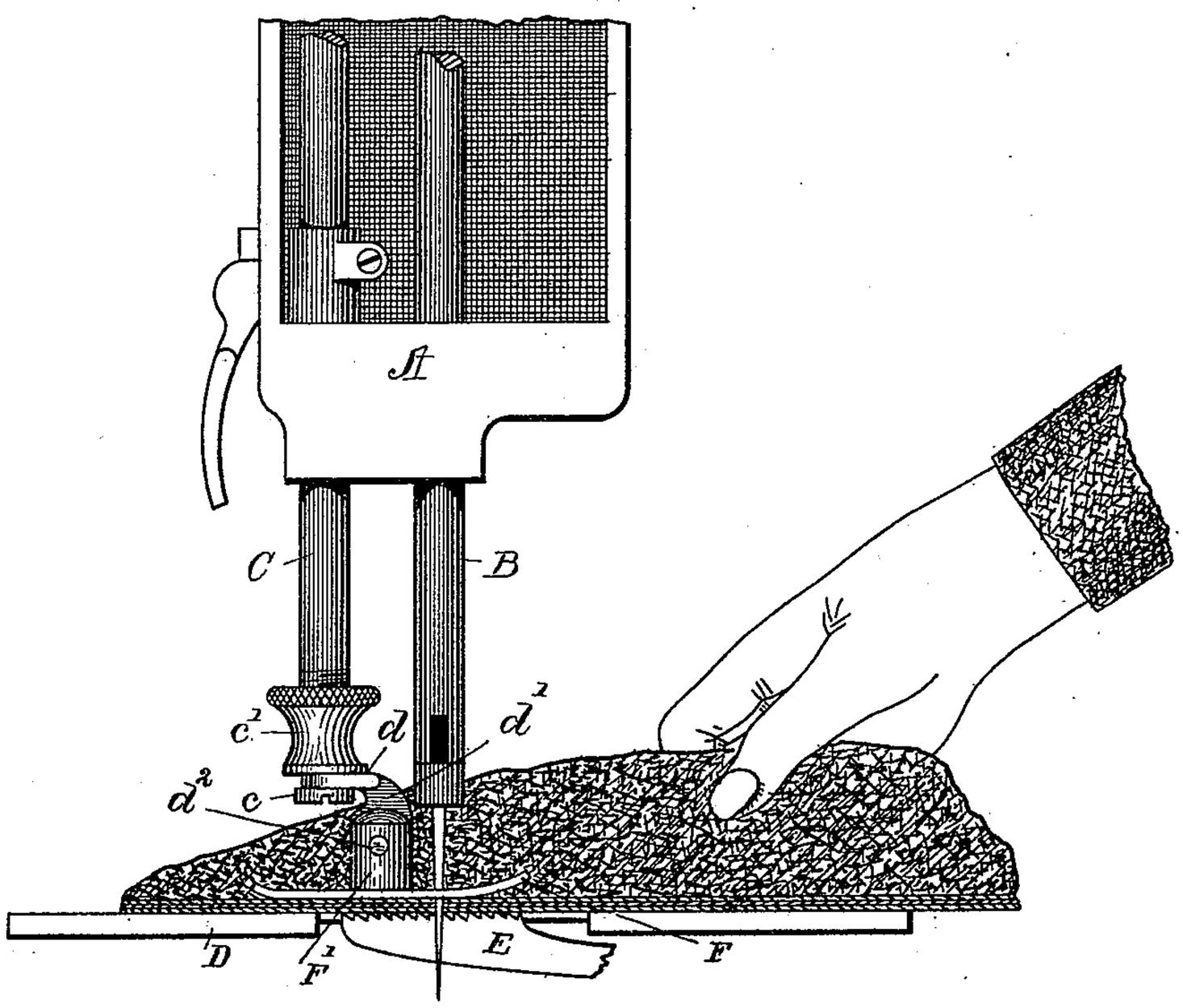

Fig. 1.

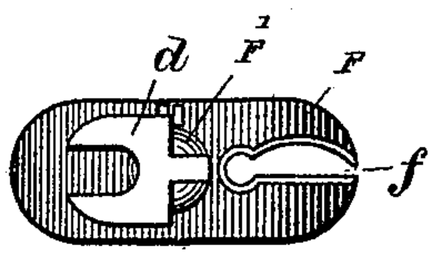

Fig. 2.

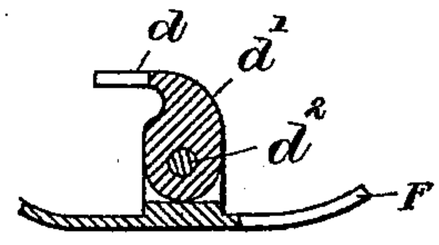

Fig. 3.

WITNESSES.

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LOUISA ANN HARRISON, OF BOSTON, MASSACHUSETTS.

PRESSER-FOOT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 438,623, dated October 21, 1890.

Application filed October 8, 1888. Serial No. 287,491. (No model.)

To all whom it may concern:

Be it known that I, LOUISA ANN HARRISON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Sewing-Machines, of which the following, reference being had to the accompanying drawings, is a specification sufficiently full and complete to enable others skilled in the art to make and use my invention.

In the drawings, Figure 1 is an elevation of the improvement which I have made and of the parts of a sewing-machine adjacent thereto. Fig. 2 is a plan of the improvement detached from the machine, and Fig. 3 is a vertical section of the same.

For the purpose of sewing seams, particularly overlapping seams, of heavy cloth, and more especially those of more than two thicknesses of cloth, it is important that all the thicknesses of cloth should be moved equally by the feed-dog, and as the feed-dog in its feeding reciprocation exerts an irregular pressure upon the presser-foot it is in practice difficult to feed the different layers of cloth evenly, particularly if they are thick and heavy. This improvement is intended to obviate this difficulty and does so to a very considerable degree, being practically perfect for woolen cloth of ordinary weights. The improvement resides in the structure of the presser-foot and in its attachment to the presser-bar.

In the drawings, A, Fig. 1, is the head of the machine. B is the needle-bar, C is the presser-bar, D is the work-plate, and E is the feed-dog. These are of ordinary construction, and the feed-dog E is the feed-dog of an ordinary four-motion-feed machine. Upon the lower extremity of the presser-bar C is a clamping-screw *c*. The presser-foot is provided with a yoke *d*, (shown in plan in Fig. 2,) which yoke fits around the shank of the screw *c* and is clamped between the inner surface of the head of said screw and the lower surface of the presser-bar or of a nut or collar *c'* upon the end of the presser-bar. From this yoke *d*, on the side from which the cloth is fed, is a curved neck *d'*, which is pierced at its lower end for the reception of a pivot d^2, as shown in the drawings, Figs. 1 and 3. The shoe of the presser-foot is marked F. It has a central boss F', which is slotted to receive the end of the curved neck *d'*, which is projected from the yoke *d*. The fit between the neck *d'* and the slot in the boss F' is not to be a close or snug fit, but such a fit as would allow a tolerably thin piece of writing-paper to be inserted between the boss and the neck, and the pivot d^2 should be fast to one of the parts—neck or boss—and have an easy fit in the other to accommodate slight lateral inequalities in the run of the seam. The shoe has a needle-throat *f*, and the toe and heel of the shoe F are turned upward, as shown in the drawings, Figs. 1 and 3. It will be observed that this shoe is thus hinged to the neck, which projects from the presser-bar a little in advance of the usual place of attachment of the presser-foot. A pivot d^2 is thus brought pretty close to the needle-bar, and is about the same distance in rear of the needle-bar that it is above the work. When the feed-dog E rises to take hold of the cloth, its principal pressure upon the cloth being a little in advance of the pivot d^2, the shoe F rocks a little upon the pivot d^2 and somewhat relieves the pressure at the point of first engagement, so that the upper surface of the cloth is not at the point of feeding resisted in its motion as much as it otherwise would be, and hence is fed more evenly and with less slip upon the lower surface of the cloth which is engaged by the feed-dog. It will be noticed that in an ordinary stitch the teeth of the feed-dog at the time of engagement with the work are disposed, as shown in Fig. 1, behind as well as in front of the pivot d^2, and thus the closest engagement of the teeth is with the work already sewed, and the pressure is lessened somewhat on the unstitched work. Probably this is one of the reasons why "reaming" is avoided by the use of this attachment.

I consider it important that the pivot d^2 should be somewhat nearer the needle than would ordinarily be the case if the pivot were immediately beneath the presser-bar, yet as there is a considerable variation in sewing-machines as to the distance of the presser-bar from the needle-bar this point cannot be stated more definitely than by saying that probably the pivot should be somewhat less than half an inch above the lower surface of

the presser-foot and somewhat more than one-quarter of an inch behind the needle-bar, it being desirable that the two measurements shall be nearly equal, and that the vertical measure, if either, should be slightly the greater, although this last is of comparatively small importance.

The needle-throat *f*, as will be observed by reference to Fig. 2, is enlarged or made wider than is necessary for the passage of the needle and the stitching by having a section of the foot upon the back side removed. This is to provide this additional width of throat. This affords means whereby the work may be observed close to or at the point of the operation of the needle, the enlargement of the throat acting as an observation-hole, so to speak.

I am aware that presser-feet have been pivoted to presser-bars before. The patent to Orville Brewster, of April 14, 1874, No. 149,714, shows such a device; but it differs from that herein shown in the arrangement and relation of the needle-throat to the foot, and in other particulars. Such a device is also shown by the patent to Albert Bingham, No. 135,194, dated January 28, 1873. But I do not claim the devices shown or described in said patents. My foot is wide, with straight and continuous sides, useful as guides in stitching. It has a central and longitudinal needle-throat, not a lateral one. The pressure on the cloth is always practically equal on both sides of the needle. There is no transverse notch to interfere with the run of the cloth. The broad slot from the front to the needle-throat allows inspection of the work as it is running, and the place of the stitches is absolutely free from pressure until the stitches are set.

I claim as my invention and desire to secure by Letters Patent—

1. A presser-foot F, for sewing-machines, made with straight and parallel sides and upwardly-curved ends, and provided on or near its median line with the boss F′, which presser-foot is pierced on its median line in front of said boss with a needle-throat, and is slotted from said needle-throat to its front edge, as shown at *f*, in combination with the neck *d′* and yoke *d*, attached to the presser-bar C, the pivot d^2, and the presser-bar C, substantially as described.

2. The combination of the yoke *d*, the neck *d′*, with the hinged presser-foot F F′, the presser-bar C, and suitable means for clamping in fixed relations said yoke and presser-bar, substantially as described.

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