A. H. DE VOE.

SEWING MACHINE PRESSER FOOT.

APPLICATION FILED MAR. 27, 1912.

1,081,586. Patented Dec. 16, 1913.

Fig. 1.

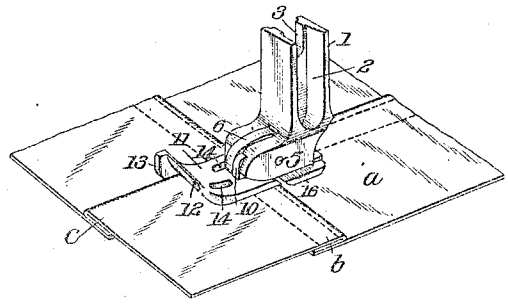


Fig. 2.

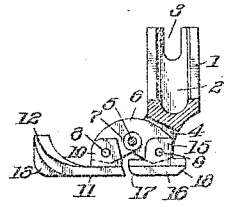


Fig. 3.

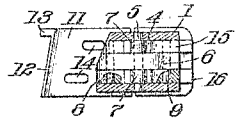


Fig. 4.

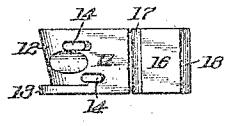
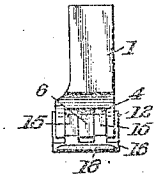


Fig. 5.



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SEWING-MACHINE PRESSER-FOOT.

1,081,586. Specification of Letters Patent. Patented Dec. 16, 1913.

Application filed March 27, 1912. Serial No. 686,480.

To all whom it may concern:

Be it known that I, ALBERT H. DE VOE, a citizen of the United States, residing at Westfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Sewing-Machine Presser-Feet, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has for its object to provide a sewing machine presser-foot which is adapted to readily pass over cross-seams in the material and to accommodate itself closely to the surface of the same so as to effectively perform its function of stripping the fabric from the needle to insure the proper presentation of thread-loops for the loop-taker and thereby prevent the skipping of stitches at the cross-seam.

According to the present invention, the presser-foot is constructed with a shank portion carrying at its lower end a tilting fulcrum-block mounted upon a transverse pivotal pin and carrying parallel fulcrum-pins upon which are mounted independently tilting forward and rearward foot-plates. The pivotally connected members of the presser-foot are preferably mounted within and securely guided by the parallel side-walls of a slot formed in the lower end of the shank to receive them.

In the accompanying drawings, Figure 1 is a perspective view of a presser-foot constructed in accordance with the present invention, with a section of material to which the same is applied. Fig. 2 is a side elevation of the presser-foot with the lower portion of the shank in section, Fig. 3 a top plan view, partly in section, Fig. 4 a bottom view, and Fig. 5 a rear end view of the presser-foot.

As represented in the drawing, the presser-foot is constructed with the shank portion 1 formed with the lateral socket 2 to receive the lower end of the presser-bar, and with the notch 3 for the shank of the fastening screw. The lower portion of the shank is formed intermediate its opposite sides with the parallel-sided slot 4 across which extends the pivotal pin 5, arranged crosswise of the presser-foot and therefore of the direction of feed of the work. Mounted upon the pin 5 within the slot 4 is the tilting fulcrum-block 6, the body portion of which is of a width considerably less than that of the slot 4, but is formed with oppositely projecting bosses 7 whose opposite extremities are distant from each other a space equivalent to the width of said slot. The block 6 carries at its ends, and upon opposite sides of the pin 5 the transverse fulcrum-pins 8 and 9 parallel with the pivotal pin 5.

Journaled upon the fulcrum-pin 8 are the spaced and apertured ears 10 rising from the rearward extremity of the forward foot-plate 11 formed with the upturned forward portion 12 having in one edge the forwardly and downwardly extending edge-guiding lip 13. The foot-plate 11 is shown provided with the needle-apertures 14 through the forward portions of which the respective needles of a twin-needle sewing machine pass. Journaled upon the fulcrum-pin 9 are the spaced apertured ears 15 rising from the upper face of the rearward tilting foot-plate 16 which is formed with the upwardly inclined forward and rearward extremities 17 and 18. The foot-plates are disposed in tandem arrangement, the one having needle-apertures being in advance of the other, and are therefore disposed in a line transverse to the pivotal pin 5.

The aggregate width of the fulcrum-block 6 and the pivotally connected ears 10 and 15 of the forward and rearward foot-plates respectively is the same as that of the slot 4 of the shank, as represented particularly in Figs. 3 and 5, thereby restricting the function of the pivotal pins to affording supporting fulcra for such members and providing rigid guiding elements upon the presser-foot shank for such parts under their operative conditions. The provision of the long bearing bosses 7 upon the fulcrum-block intermediate the ears 10 and 15 of the foot-plates provides a substantial bearing for such rocking member and insures durability of its pivotal connection with the shank. By the filling in of the slot 4 between its side-walls with the parts surrounding the pivotal pins 5, 8 and 9, the journals of the several tilting members are fully protected from penetration of lint and grit from the fabrics operated upon, and their durability is insured.

In practice, the lower edge of the fulcrum-block 6 is notched beneath the bosses 7 and upwardly inclined at the extremities so as to provide for sufficient amplitude of tilting

movement of the foot-plates for all working conditions, and the upper extremity of the slot 4 is also provided with sufficient clearance to permit the required movement of the fulcrum-block.

As represented in Fig. 1, the material *a* has a folded and stitched cross lap-seam *b* and a folded longitudinal lap-seam *c* which is partially stitched, the forward extremity thereof being represented as it is delivered from a lap-seam feller in advance of the presser-foot, and with a folded edge of the upper ply in contact with the guiding lip 13 of the foot-plate 11. In the stitching of the longitudinal seam, the material is fed beneath the presser-foot until the cross-seam encounters the upturned forward portion 12 of the foot-plate 11, when the latter is tilted upwardly until the edge of the cross-seam *b* comes beneath the fulcrum-pin 8, when the foot-plate reassumes its flat relation with the fabric upon the upper level, as represented in Fig. 1. In the continued progress of the material, the rearward foot-plate 16 performs a like movement, the fulcrum-block 6, which had been tilted by the ascent of the forward foot-plate to the upper level, regaining its initial relation with the presser-foot shank.

It has heretofore been proposed to construct a presser-foot with pivotally mounted work-engaging members, but in none of such presser-feet as heretofore devised has the skipping of stitches at cross-seams been effectively prevented. According to the present invention, not only are both the forward and rearward foot-plates rendered capable of independently adjusting themselves to the face of the fabric beneath them, so as to hold the fabric adjacent the needles down upon the throat-plate, but the approach and recession of these foot-plates relative to each other, consequent upon the tilting of the fulcrum-block 6 upon its pivotal pin 5, assists in the prevention of the skipping of stitches in its action upon the fabric in the movement of the cross-seams in the latter beneath the presser-foot.

In the stitching of certain kinds of heavy fabric, such as canvas or duck, a mass of lubricant for the needle-thread such as wax or paraffin is sometimes placed upon the presser-foot around the needle-holes. In the stitching operation, the movement of the thread with the needles through the needle-apertures causes the adherence thereto of particles of lubricant. In the thicker portions at the cross-seams, the tilting of a pivoted foot-plate causes fresh portions of the lubricant to be exposed to the thread, but by the bodily movement as well as the tilting of the forward foot-plate of the present improvement at such time, the application of lubricant to the thread is still more effective.

Having thus set forth the nature of the invention, what I claim herein is:—

1. A presser-foot comprising a shank-portion carrying a pivotal pin disposed crosswise of the presser-foot, a tilting fulcrum-block mounted upon said pin, fulcrum-pins carried by said fulcrum-block upon the opposite sides of said pivotal pin and disposed parallel with the latter, and independent tilting foot-plates each mounted upon one of said fulcrum-pins and arranged transversely to said pivotal pin.

2. A presser-foot comprising a shank-portion formed intermediate its side-faces with a vertical parallel-sided and open-bottomed slot disposed lengthwise of the foot, a transverse pivotal pin extending crosswise of said slot, a fulcrum-block of less width than that of said slot and journaled upon said pin, fulcrum-pins sustained by said block upon opposite sides of and parallel with said pivotal pin, and independent foot-plates arranged in a line parallel with said parallel-sided slot and formed with ears embracing said fulcrum-block and occupying the spaces between the same and the opposite walls of said slot and apertured to receive said fulcrum-pins.

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

ALBERT H. DE VOE.

Witnesses:
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