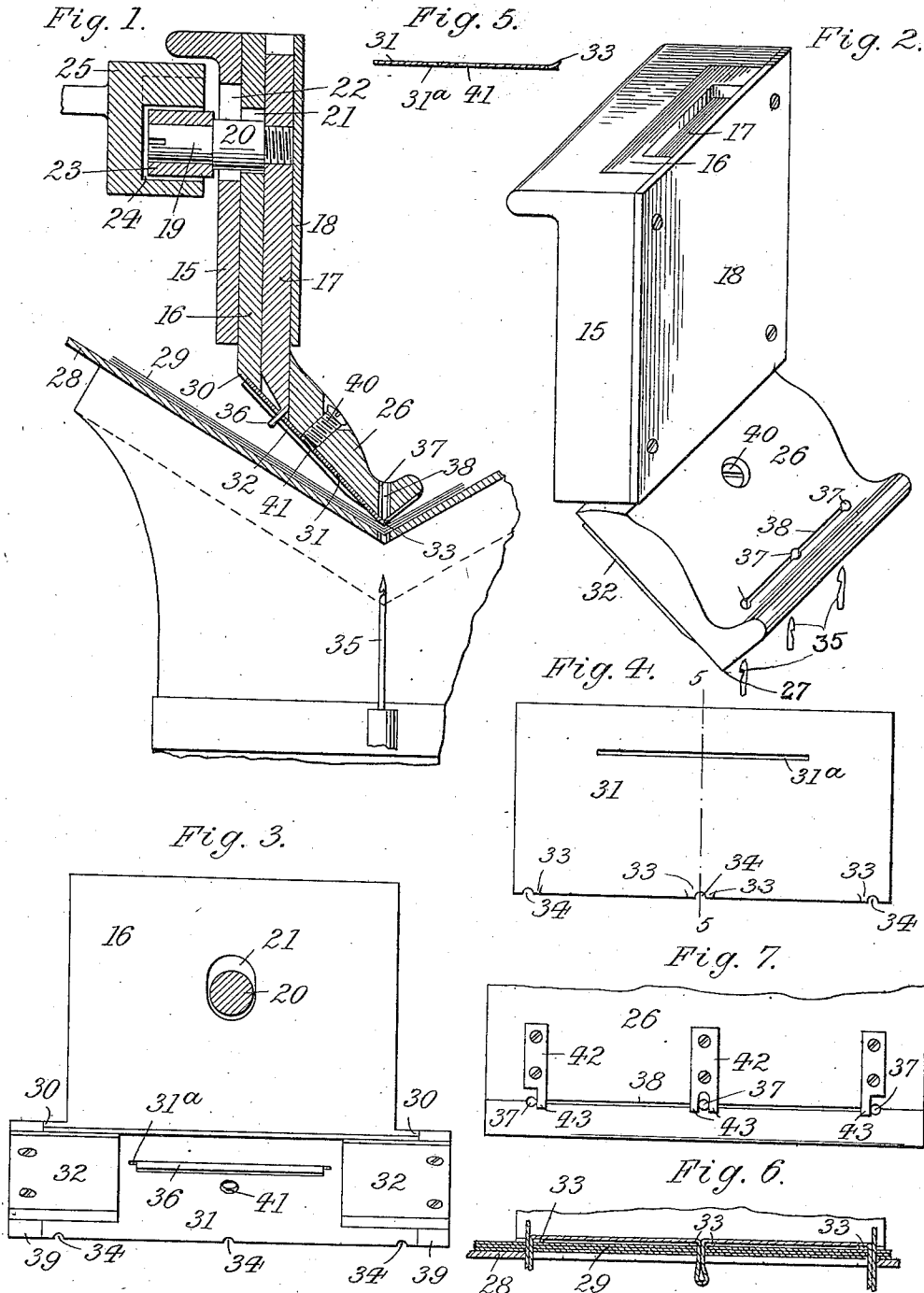


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PRESSER FOOT FOR PAMPHLET STITCHING MACHINES.
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HORACE L. ROBERTS, OF NEW YORK, N. Y.

PRESSER-FOOT FOR PAMPHLET-STITCHING MACHINES.

1,015,077.

Specification of Letters Patent.

Patented Jan. 16, 1912.

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To all whom it may concern:

Be it known that I, HORACE L. ROBERTS, a citizen of the United States, residing at New York city, Brooklyn, county of Kings, and State of New York, have invented new and useful Improvements in Presser-Foot for Pamphlet-Stitching Machines, of which the following is a specification.

This invention relates to an improvement in thread stitching machines for uniting the sheets or signatures of pamphlets, books and similar articles, such, for instance, as described in Patent #944,051 granted to me on December 21, 1909.

The invention comprises more particularly novel and effective means for properly guiding the thread while the same is drawn through the previously formed needle holes of the pamphlet, so that any objectionable widening of said holes and a tearing of the pamphlet fold is prevented.

In the accompanying drawing: Figure 1 is a vertical central cross section through my improved presser foot and coöperating parts; Fig. 2 a perspective view of the presser foot and needles; Fig. 3 a sectional rear view thereof; Fig. 4 a detail of the movable presser foot plate; Fig. 5 a cross section on line 5—5, Fig. 4; Fig. 6 a detail showing the thread partly drawn through the pamphlet; and Fig. 7 a modification of part of the presser foot.

In a recessed guide 15 which constitutes part of the machine frame, is mounted a vertically reciprocative shank 16. This shank is recessed for the reception of a plunger 17 while a suitable face plate 18 holds shank 16 and plunger 17 to guide 15. Into plunger 17 is tapped a pin 19, the enlarged stem 20 of which passes through slots 21, 22 of shank 16 and guide 15 respectively. At its outer end, pin 19 carries an antifriction roller 23, which engages the groove 24 of a segmental cam 25, said cam and its actuating mechanism being in all respects identical with the cam 58 and the parts coöperating therewith as described in the above cited patent.

From shank 16 projects forward and downward a V-shaped slotted foot 26, the lower longitudinal edge 27 of which is ar-

anged vertically above the furrow of table 28 supporting the pamphlet 29. The lower sides of presser foot 26 are inclined to a like extent and inclose an angle which is less than the corresponding angle formed by the inclined sides of table 28, as clearly illustrated in Fig. 1. In this way the downward pressure is concentrated along the fold of the sheets, while at the same time the free sheet sections are prevented from upturning and thus interfering with the proper operation of the machine. The lower rear side of foot 26 is recessed as at 30 for the reception of a slide 31, suitable guides 32 confining said slide within said recess. Along its lower edge, slide 31 is provided with three slightly up-turned prongs 33, having semi-circular notches 34 which permit the passage of the stitching needles 35. Near its upper end, slide 31 has a longitudinal slot 31^a which is permanently engaged by a tongue 36 projecting rearward and downward from plunger 17, so that tongue 36 extends at right angles to slide 31. Foot 26 is provided with three vertical perforations 37 with which notches 34 are adapted to register, said perforations being connected by a longitudinal slot 38.

Fig. 1 shows the presser foot in the position it occupies while the thread is drawn through the pamphlet, the means for supplying and stretching the thread above and along the table furrow being fully described in the above cited patent. It will be seen that in this position, slide 31 is so forced into the fold of the pamphlet, that prongs 33 extend forward beyond said fold. Thus when needles 35 draw the thread through the pamphlet, the thread will not slide along the pamphlet-fold but will be temporarily supported by prongs 33 (Fig. 6) so that any undue widening of the needle holes and a consequent tearing of the pamphlet fold is effectively prevented.

After the thread has been drawn almost entirely through the pamphlet and previous to its being finally locked, plunger 17 is raised by cam 25, while foot 26 will remain in its lowered position owing to its weight. During this upward movement of plunger

17, tongue 36 will raise slide 31 along foot 26 thereby withdrawing prongs 33 from the pamphlet fold, so that the stitch may be locked by the loopers. The withdrawal of slide 31 will continue until shank 20 impinges against the upper edge of slot 21 thereby taking along shank 16 and thus raising foot 26 to release the stitched pamphlet. After the next pamphlet has been placed upon table 28, shank 16 and plunger 17 descend in unison until the unrecessed outer sections 39 of foot 26 find a bearing upon the pamphlet, so that the continued descent of pin 19 will by tongue 36 cause a corresponding advance of slide 31 to project its prongs over the pamphlet fold, whereupon the operation described is repeated.

In some instances, say when stitching thick and heavy pamphlets, it is not necessary to withdraw prongs 33 after the completion of each stitch, but the prongs may be permanently secured to foot 26. In this case the operator draws the pamphlet slightly forward after the presser foot has been lifted off support 28, thus removing the pamphlet from the prongs. For locking plate 31 in position, a screw 40 is tapped into a perforation of foot 26, said screw when lowered engaging a corresponding opening 41 of plate 31 and thereby locking it in its lowered position. In lieu of locking plate 31 to the lower face of foot 26, the latter may be provided with fixed plates 42 having forwardly extending prongs 43 as illustrated in Fig. 7.

It will be seen that by the construction described, the thread will be properly supported while drawn through the needle holes, so that any undue widening or tearing out of said holes is prevented.

I claim:

1. In a stitching machine, an apertured table adapted to receive a number of sheets having a longitudinal fold, a series of needles adapted to pass through the table aperture, pierce said sheets and draw a thread therethrough, a presser foot having an inclined lower side, the lowermost edge of which is adapted to press the sheet fold against the table, and a series of prongs flanking the needles and extending forwardly and downwardly from the inclined lower side of the presser foot, thereby exercising an additional downward pressure upon the sheets in proximity to said needles, said prongs also constituting a support for the thread while the latter is drawn through the sheets.

2. In a stitching machine, a V-shaped apertured table having a pair of uniformly diverging sides and adapted to receive a number of sheets provided with a longitudinal fold, a presser foot having a pair of uniformly inclined lower sides, the angle formed

thereby being less than that formed by the diverging table sides, said presser foot having a plurality of communicating needle holes opening into its lower edge, means for lowering the presser foot upon the sheets to concentrate the pressure along the sheet-fold, a slide movably secured to one of the inclined sides of the presser foot and having a plurality of forwardly and downwardly extending notched prongs that flank the needle holes and exercise an additional downward pressure upon the sheets in proximity to said holes, and a plurality of needles adapted to draw a thread through the needle holes and over the prongs.

3. In a stitching machine, a table adapted to receive a number of sheets having a longitudinal fold, a symmetrical angular presser foot having a pair of lower inclined sides that form a lower edge and are deflected at a like angle from the table, said presser foot being provided with a plurality of communicating needle holes opening into its lower edge, a slide movably secured to one of the inclined sides of the presser foot and having a plurality of forwardly extending notched prongs that flank the needle holes, and a plurality of needles adapted to draw a thread through said holes and over the prongs.

4. In a stitching machine, a support adapted to receive the article to be stitched, a shank vertically reciprocative above said support and having a perforated foot, a plunger vertically movable on the shank, a slide carried by the foot and actuated by the plunger, said slide flanking the foot perforations, and a plurality of needles adapted to draw a thread through the foot and over the slide.

5. In a stitching machine, a support adapted to receive the article to be stitched, a shank vertically reciprocated above said support and provided with a V-shaped perforated foot having a pair of converging lower sides and flanking the foot-perforations, a slotted slide movable along one of said sides, a plunger slidably engaging the shank and having a tongue which engages the slide-slot, and a plurality of needles adapted to draw a thread through the foot and over the slide.

6. In a stitching machine, a support adapted to receive the article to be stitched, a slotted shank vertically reciprocative above said support and having a perforated foot, a plunger slidably engaging the shank, a pin on the plunger and accommodated within the shank slot, a slide carried by the foot and actuated by the plunger, said slide flanking the foot-perforations, and a plurality of needles adapted to draw a thread through the foot and over the slide.

7. In a stitching machine, a support adapted to receive the article to be stitched, a

slotted shank vertically reciprocative above
said support and having a perforated foot, a
plunger slidably engaging the shank, a pin
on the plunger and accommodated within
5 the shank slot, a slide carried by the foot
and actuated by the plunger, said slide flank-
ing the foot-perforations, a cam engaged by
the pin, and a plurality of needles adapted
to draw a thread through the foot and over
the slide.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."