Aug. 2, 1949. B. ANTONELLI 2,478,073

ADJUSTABLE WORK GAUGING AND GUIDING PRESSER FOOT

Filed April 29, 1947

Fig. 1.

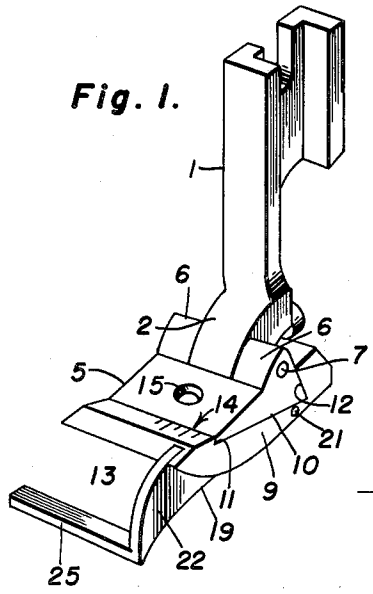


Fig. 2.

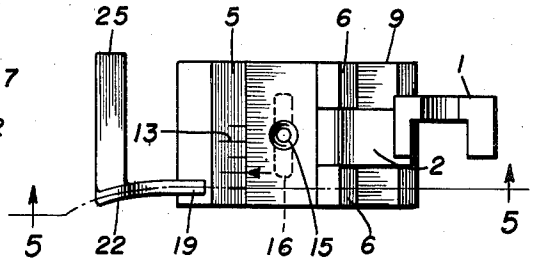


Fig. 3.

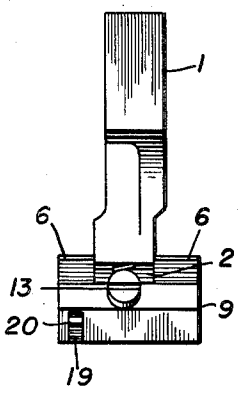


Fig. 4.

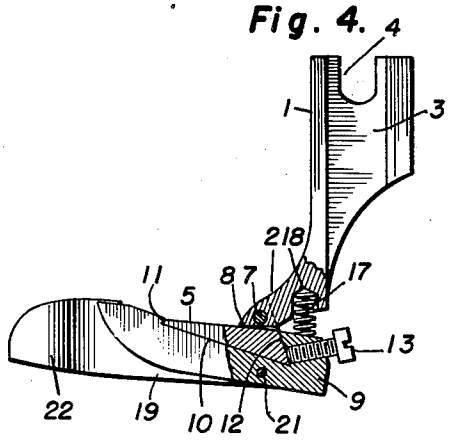
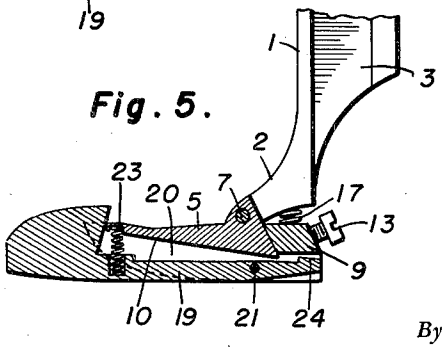


Fig. 5.



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ADJUSTABLE WORK GAUGING AND GUIDING PRESSER FOOT

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4 Claims. (Cl. 112—235)

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My invention relates to improvements in adjustable work-gaging and guiding presser feet for sewing machines of the type in which the presser foot is carried by a presser bar.

The principal object of my invention is to provide a presser foot of simple, efficient construction equipped for gaging and guiding the work variably relative to the needle to correspondingly place the stitch from the edge of the work when desired, but which is capable of operation in the manner of the usual presser foot, that is, without gaging and guiding when that is unnecessary.

Another object is to provide a presser foot of the character and for the purposes above set forth which is especially adapted to facilitate entering work thereunder and for turning of the work to stitch around corners, all without raising and resetting the presser foot.

Another object is to provide a presser foot equipped for gaging and guiding the work and providing for easy sliding and entrance of the work under the presser foot in a manner to achieve even stitching at the correct distance from the edge of the work without requiring close attention at all times by the operator.

Other and subordinate objects also comprehended by my invention, together with the precise nature of my improvements, and the advantages thereof, will be readily understood when the succeeding description and claims are read with reference to the drawing accompanying and forming part of this specification.

In said drawing:

Figure 1 is a view in perspective of my improved presser foot in a preferred embodiment thereof;

Figure 2 is a view in plan;

Figure 3 is a view in rear elevation;

Figure 4 is a view partly in side elevation and partly in section;

Figure 5 is a view in vertical section taken on the line 5—5 of Figure 2.

Referring to the drawings by numerals, according to my invention, as illustrated, a presser foot is provided comprising a shank 1 having a forwardly and downwardly inclined lower end 2, and the usual side channel 3 and side notch 4 for attaching the shank to the usual presser bar, not shown, of a sewing machine.

A horizontal guide block 5, of generally rectangular shape, is provided with a pair of upstanding, laterally spaced, rear edge ears 6 straddling the lower end 2 of the shank 1 and pivoted thereto by a horizontal pin 7 extending through said ears 6 and said end 2 transversely of

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the shank 1 and the said guide block so that the guide block 5 extends forwardly from said lower end 2 and is vertically swingable about an axis transverse to the line of feed of the work, not shown. A bottom stop face 8 on said lower end 2 of the shank 1 coacts with the top of the guide block 5 to limit upward swinging of said block.

A work-engaging presser foot member 9 of generally rectangular form with the usual round toe end construction is suspended from the guide block 5 for lateral sliding adjustment thereon. For this purpose, said presser foot member 9 is provided with a top, dovetail, cross groove 10 therein of flat bottom form, and said block 9 is provided with beveled front and rear edges 11, 12, whereby said groove 10 and block 5 interfit to form a dovetail connection between said block 5 and said member 9 providing for sliding adjustment of said member 9 laterally of the line of feed of the work, into different set positions.

A set screw 13 threaded into the heel end of the work-engaging presser foot member 9 for turning against the rear edge 12 of the guide block 5 provides for retaining said member 9 in different set positions.

A line of graduations 13 on the top of the work-engaging presser foot member 9, and a mark 14 on top of the guide block 5 provide for predetermining positions of adjustment of said member. A central hole 15 is provided in the guide block 5, and a horizontal cross slot 16 in said member 9 for passage of the needle, not shown, therethrough.

A coil spring 17 is recessed, as at 18, into the bottom of the end 2 of the shank 1 in the rear of the pin 7 and bears against the top of the work-engaging presser foot member 9 in the rear of the guide block 5, whereby said block and member are normally swung upwardly about the pin 7 into slightly forwardly and upwardly inclined position, as best shown in Figure 4, established by engagement of the stop face 8 with the top of the guide block 5.

A work gage bar 19 is fitted in a bottom slot 20 in the work-engaging presser foot member 9 extending from the front to the back thereof along the inboard side of said member, said bar being pivoted adjacent its rear end on a pin 21 extending horizontally through said bar and into said member, whereby the work gage bar 19 is swingable vertically in said slot 20. The work gage bar 19 has a vertical, enlarged outwardly and laterally turned front guide end 22 extending forwardly of said member 9 and designed to facilitate travel of the edge of the work along

said bar and under said member 9. A coil spring 23 in the front end of the slot 20 recessed into said bar 19 and said member 9, forwardly of the pin 21, tends to swing said bar 19 downwardly forwardly of said pin 21 and said member 9 into a normal position in which the same inclines downwardly and forwardly, slightly, relative to said member 9. A rear end stop boss 24 on said bar 19 is adapted to engage the top of the slot 20 in the rear of the pin 21, and thereby establish said normal position of said bar 19.

A guide finger 25 extends laterally from the front guide end 22 of the work gage bar 19 toward the outboard side of the work-engaging presser foot member 9, at the bottom edge of said bar, said finger 25 being thus spaced well forwardly of said member 9 and normally spaced by said bar 19 below the bottom of the work-engaging presser foot member 9 at the toe end of said member 9.

When the described presser foot is lowered, or set, by the presser bar of the sewing machine, in the usual manner, the work-engaging presser foot member 9 is straightened out, in opposition to the coil spring 17, for substantially flat bottom engagement with the work, not shown, with the heel of said member tensioned by the spring 17 and pressed against the work so that said member 9 is positioned for vertical swinging self-adjustment as the work is fed under the same. The edge of the work is fed over the guide finger 25, when it is desired to gage the stitching, with the edge of the work fed alongside and against the gage bar 19. The gage bar 19, when the foot is set, swings upwardly, in opposition to the coil spring 23 so that the same is tensioned downwardly relative to the work by said spring and is self-adjusting vertically as the work is fed past the same. The guide finger 25 facilitates sliding of the work under the work-engaging presser foot member 9. By adjusting the work-engaging presser foot member 9 on the guide block 5 laterally, as described, the gage bar 19 may be pre-set for variably gaging the stitching from the edge of the work as desired. Because the work-engaging presser foot member 9 and the gage bar 19 are self-adjusting, in the manner already described, it is rendered easy to turn the work under said member and bar as occasion may require. If it is not desired to gage the stitching, the described presser foot may be set to position the guide finger 25 and the gage bar 19 on top of the work.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claims.

What I claim is:

1. A presser foot structure for attachment to the presser bar of a sewing machine comprising a shank fitting said bar in upstanding position, a work-engaging presser foot member having a bottom slot therein, means pivotally suspending said member from the lower end of said shank for vertical swinging adjustment about a horizontal axis, a work-gaging bar pivoted in said slot for vertical guiding, play in said member and

having a front work-engaging end extending outwardly of said member for engaging an edge of the work, and a work guiding finger extending laterally from said end of said bar to underlie said edge.

2. A presser foot structure for attachment to the presser bar of a sewing machine comprising a shank fitting said bar in upstanding position, a work-engaging presser foot member, means pivotally suspending said member from the lower end of said shank for vertical swinging adjustment about a horizontal axis, a work-gaging bar pivoted in said member for vertical play and having a front work-engaging end extending outwardly of said member for engaging an edge of the work, and a work guiding finger extending laterally from said end of said bar to underlie said edge, said means including a dovetail sliding connection between said shank and member providing for lateral sliding adjustment of said member relative to said shank to adjust said bar laterally of the work.

3. A presser foot structure for attachment to the presser bar of a sewing machine comprising a shank fitting said bar in upstanding position, a work-engaging presser foot member, means pivotally suspending said member from the lower end of said shank for vertical swinging adjustment about a horizontal axis, a work-gaging bar pivoted in said member for vertical play and having a front laterally curved work-engaging end extending outwardly of said member for engaging an edge of the work, and a work guiding finger extending laterally from said end of said bar to underlie said edge, spring means for swinging said member in one direction to engage the work, and spring means for urging said bar downwardly of said member toward the work.

4. A presser foot structure for attachment to the presser bar of a sewing machine comprising a shank fitting said bar in upstanding position, a guide block of dovetail cross-section pivoted on said shank for vertical swinging into upwardly and forwardly inclined position about a horizontal axis, a presser foot member with a dovetail top groove therein fitting said block for sliding adjustment of said member laterally on said lock, said member having toe and heel ends, respectively, a spring between said shank and member urging said member and block into forwardly and upwardly inclined position to yieldingly engage the heel end of said member with the work, and a work guiding finger pivoted in said member and extending forwardly thereof and spring tensioned to swing downwardly of said member against the work.

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