Dec. 27, 1966 A. MICALE 3,294,048

COMBINATION PLAIN FOOT AND SLIDE FASTENER FOOT FOR SEWING MACHINES

Filed Oct. 22, 1963 2 Sheets-Sheet 1

FIG. 1

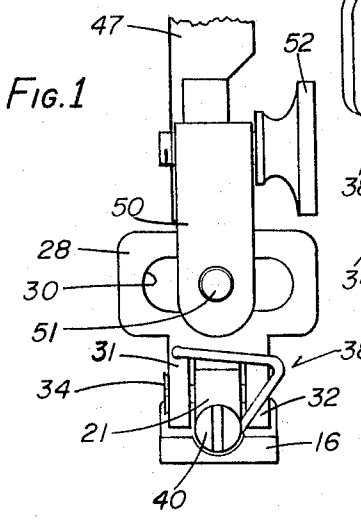


FIG. 2

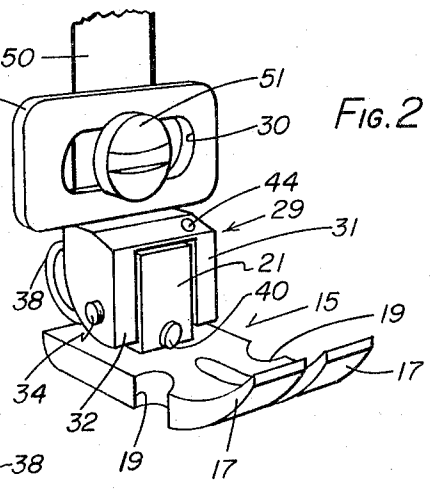


FIG. 4

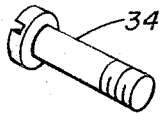


FIG. 3

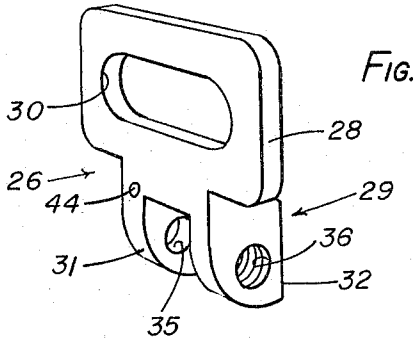


FIG. 7

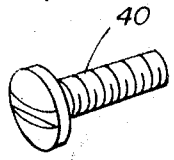


FIG. 6

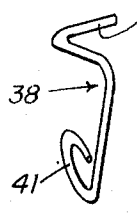
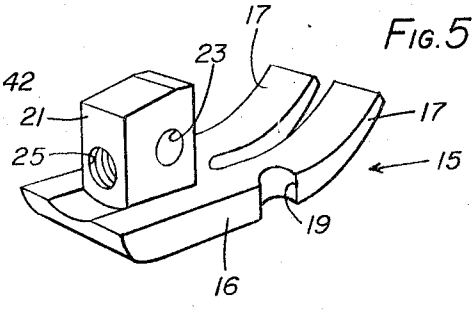


FIG. 5



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Dec. 27, 1966 A. MICALE 3,294,048

COMBINATION PLAIN FOOT AND SLIDE FASTENER FOOT FOR SEWING MACHINES

Filed Oct. 22, 1963 2 Sheets-Sheet 2

FIG. 8

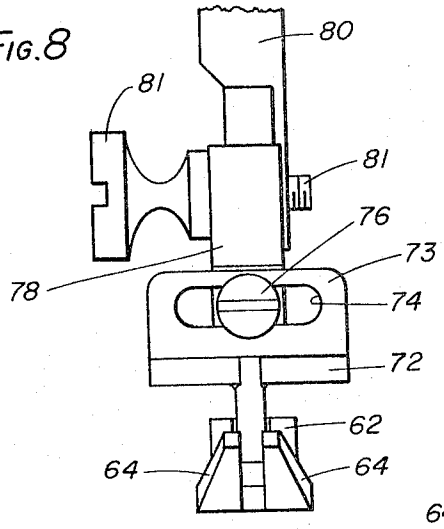


FIG. 9

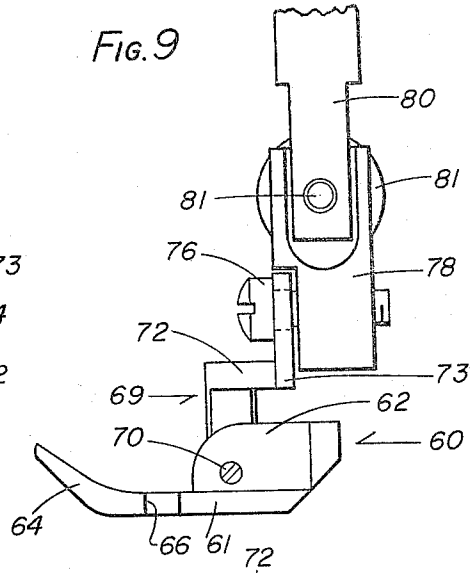
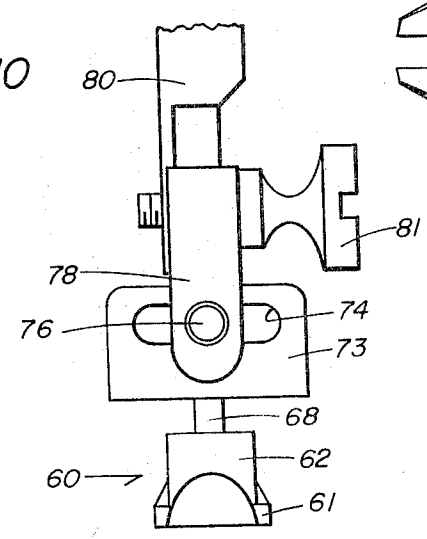


FIG. 10



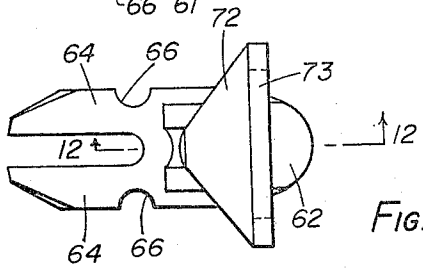
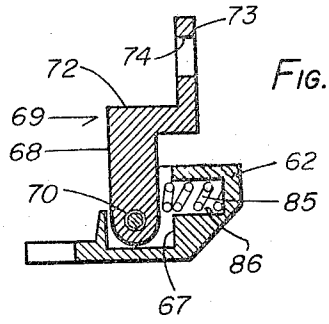


FIG. 11

FIG. 12



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3,294,048

COMBINATION PLAIN FOOT AND SLIDE FASTENER FOOT FOR SEWING MACHINES

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Filed Oct. 22, 1963, Ser. No. 318,031
4 Claims. (Cl. 112—240)

This invention relates to a sewing machine foot usable either as a plain foot or as a right or left slide fastener foot, thereby saving the expense of a separate slide fastener foot, which has heretofore been necessary, and also saving time necessary to change from one to the other.

Two forms of the invention are shown, one for light duty and the other for heavy duty.

The drawings illustrate the invention, and in these:

FIGURES 1–7 show the light duty form and FIGURES 8–12 the heavy duty form.

FIGURE 1 is a back view of the light duty form as secured to the foot bar of a machine;

FIGURE 2 is a front-side perspective view of the same;

FIGURE 3 is a perspective view showing the side and back of the component which serves as a hinge element and as an element for selectively connecting the foot to the foot bar of the machine in a desired position;

FIGURE 4 shows a threaded bolt which hinges the component of FIGURE 3 to the body of the foot;

FIGURE 5 is a perspective view of the body of the foot;

FIGURE 6 is a perspective view of a spring for connecting the body of the foot to the component of FIGURE 3;

FIGURE 7 shows a screw which secures the spring of FIGURE 6 to the foot body;

FIGURES 8, 9 and 10 are respectively front, side and back views of another form of the invention, which was devised for heavy duty, and these views show the foot attached to the foot bar of the machine;

FIGURE 11 is a plan view of the foot itself, and omits connecting parts shown in FIGURES 8, 9 and 10 to which the foot is there shown attached; and

FIGURE 12 is a section taken on line 12—12 of FIGURE 11.

Referring to the drawings, and at first to FIGURES 1–7, the body 15 of the foot (FIGURE 5) includes the foot proper 16 and a block 21 integral therewith and rising therefrom, the former being forked to provide spaced toes 17 between which the needle runs when the foot is used as an ordinary or plain foot. The present combination foot has a pair of opposed recesses 19 formed on the outer sides of the toes, opposite the inner end portion of the fork interspace. One or the other of the recesses 19 accommodates the needle, depending on the operation requird in sewing a slide fastener.

The block 21 has an unthreaded or plain transverse hole 23 and also a threaded hole 25 extending through the block from back to front. The greater part of the top surface of block 21 slopes downwardly toward the rear, to allow the rocking motion necessary to a foot.

A pivoted component 26 (FIGURE 3) of the foot has an upper portion 28, of oblong form, disposed with its long side horizontal, and it has an elongate aperture 30 from front to back. This component also includes, integral therewith, a lower part 29 which depends from, and extends in front of, the upper part 28, and has spaced sides 31 and 32. These sides straddle the block 21 at the sides of the latter and the threaded bolt 34 (FIGURE 4) passes through the plain hole 35 of side 31 and makes threaded connection with the threads in hole 36 of side 32, thereby hinging element 26 to the body 15 of the foot.

A bent wire spring 38 (FIGURES 1 and 6) is fastened to the back of block 21 by a screw 40 (FIGURE 7), which screw passes through a loop 41 formed at the lower end of the spring, and engages the threads in hole 25. The other end portion 42 of the spring is bent at right angles and enters a hole 44 which passes through side 31 to the top (FIGURE 2) of part 29. The spring is arranged to exert a yieldable forward pressure against hinge element 28, whereby the foot yields to the goods sewed, according to the thickness, and also presses thereon, the pivotal point being in front of the upper part 28, it being understood that the usual spring presses down on the foot bar and on the foot back of the pivot.

The described structure is adjustably secured to the foot bar 47, through the medium of a connector 50 (FIGURES 1 and 2). A screw 51, having a head of greater diameter than the slot 30, extends through said slot and through said connector, making threaded engagement with the latter. The connector is secured to the foot bar 47 (FIGURE 1) by a screw 52 (FIGURE 1).

For the more usual use as a plain foot, the screw 51 passes through slot 30 in the middle of the latter, and for use as a slide fastener foot, screw 51 is loosened and the foot shifted to the right or left of the screw, as desired, and the screw is then tightened, the needle passing through the right or left notch 19.

Referring now to FIGURES 7–12, which show an alternative form, the numeral 60 designates the body of the foot, which includes the foot proper 61 and, on the rear portion of it, and integral with it, a block 62. The foot proper has a pair of spaced toes 64, the interspace being for passage of the needle when the foot is used as what is known as a plain foot. The toes in this form are turned up at a larger angle than those of the light duty form previously described. In the outer sides of the toes, semicircular recesses 66 are formed to allow the passage of the needle when the foot is used as a slide fastener foot, the foot being shiftable to the right or left, as explained in the form described.

The block 62 has a vertical recess 67, to pivotally receive the lower end portion 68 of the pivoted component 69 which is held in the block by a small threaded bolt 70 passing through the sides of the block. The middle portion 72 of component 69 extends backward horizontally from the top of the lower end portion 68 and is of triangular formation (FIGURE 11). Element 69 comprises an upper portion 73 which rises from the rear end of portion 72 and is integral therewith. Portion 73 corresponds to top portion 28 of element 26 previously described, and has an elongate horizontal slot 74. A bolt 76 passes through slot 74, with its head against portion 73 and through an element 78 to fasten the whole foot to the foot bar 80, the latter being held to element 78 by a bolt 81. When the foot is used as a plain foot, the bolt 76 passes through the middle of slot 74, but when the foot is to be used as a slide fastener foot, bolt 76 is loosened and the foot is moved to the right or left relative to the bolt, as desired, and the bolt is then tightened; the needle then passes through one of the notches 66 at the sides of the foot.

Pressing the hinge element 68 forwardly to control the position of the foot is a coiled spring 85 (FIGURE 12) which is situated in a horizontal recess 86 in the block 62, which recess extends backwardly from the vertical recess 67. The spring is thus boxed in so that it cannot be displaced, which often happens with other constructions, due to wear.

What is claimed is:

1. The combination, with the foot bar of a sewing machine, of a foot having opposed, needle-accommodating notches in its outer sides, said foot comprising a

forked body portion and a component pivoted at its lower end to the body portion, the upper part of said component having an elongate horizontal aperture, releasable means passing through said aperture to fasten the foot to the foot bar, said foot being laterally slidable along said aperture relative to said releasable means so that the machine needle may pass through the fork interspace or through either of said notches, said body portion of the foot having a horizontal recess in its rear end portion, and a compressed spring in said recess pressing said component forwardly.

2. The combination, with the foot bar of a sewing machine, of a foot having opposed, needle-accommodating notches in its outer sides, said foot comprising a forked body portion and a component pivoted at its lower end to the body portion, the upper part of said component having an elongate horizontal aperture, releasable means passing through said aperture to fasten the foot to the foot bar, said foot being laterally slidable along said aperture relative to said releasable means so that the machine needle may pass through the fork interspace or through either of said notches, and a bent wire spring releasably secured to said body portion of the foot at the back surface thereof and extending into said pivoted component.

3. A foot for use with the foot bar of a sewing machine, said foot comprising a forked body portion and a component pivoted at its lower end to the body portion, said forked body portion having needle accommodating opposed notches in its outer sides, the upper part of said component having a horizontal aperture, said horizontal aperture being adapted to have releasable means passing therethrough to fasten the foot to the foot bar and to allow

lateral slidable movement of said foot along said aperture relative to said releasable means so that the machine needle may pass through the fork interspace or through either of said notches, said body portion of the foot having a horizontal recess in its rear end portion and a compressed spring in said recess pressing said component forwardly.

4. A foot for use with the foot bar of a sewing machine, said foot comprising a forked body portion and a component pivoted at its lower end to the body portion, said forked body portion having needle accomodating opposed notches in its outer sides, the upper part of said component having a horizontal aperture, said horizontal aperture being adapted to have releasable means passing therethrough to fasten the foot to the foot bar and to allow lateral slidable movement of said foot along said aperture relative to said releasable means so that the machine needle may pass through the fork interspace or through either of said notches, and a bent wire spring releasably secured to said body portion of the foot at the back surface thereof and extending into said pivoted component.

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