

[54] SNAP-ON ZIPPER FOOT

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[22] Filed: **Mar. 15, 1972**

[21] Appl. No.: **234,963**

[52] U.S. Cl. **112/240**

[51] Int. Cl. **D05b 29/08**

[58] Field of Search.....112/240, 235, 236, 239, 250, 112/251, 237, 238

[56] References Cited

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Primary Examiner—Jordan Franklin

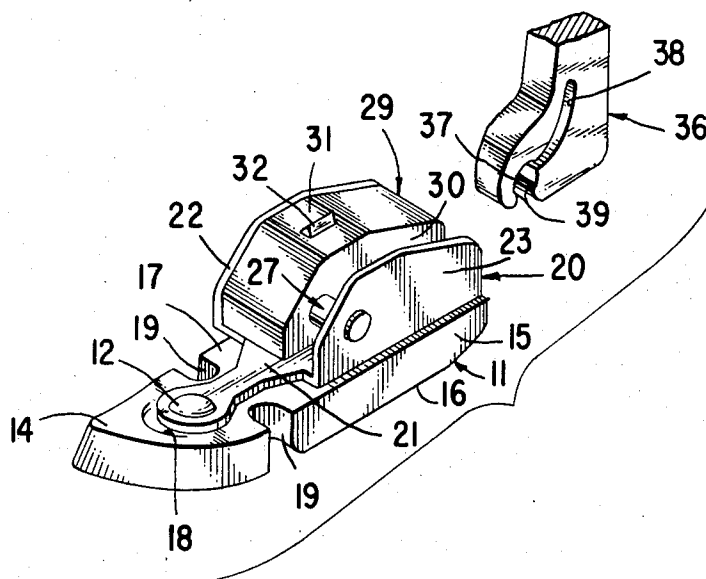
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[57] ABSTRACT

A sewing machine presser foot is disclosed which may be readily connected for positioning on either the right or the left side of the sewing machine needle. The presser foot is constructed with a U shaped bracket attached to a sole plate, the bracket having a pivot pin extending between the sidewalls. A shiftable spacer block is carried by the pivot pin leaving sufficient space between the block and a sidewall of the bracket for insertion of the presser foot shank. By inserting the presser foot shank on one or the other side of the spacer block the presser foot may be bodily shifted to one or the other side of the sewing machine needle.

1 Claim, 4 Drawing Figures



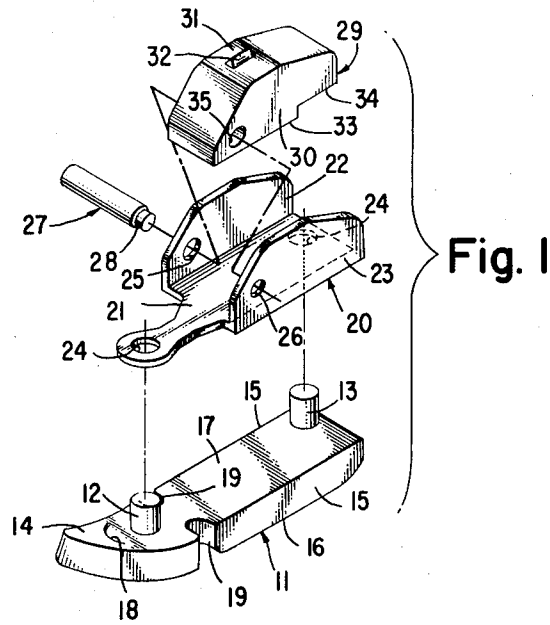


Fig. 1

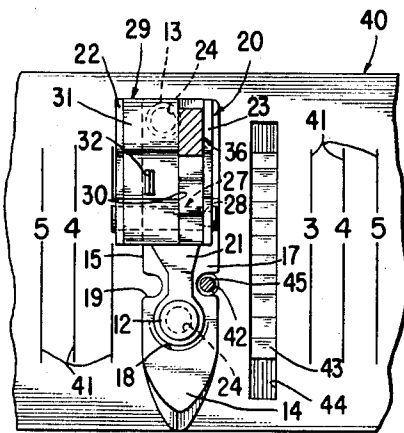


Fig. 3

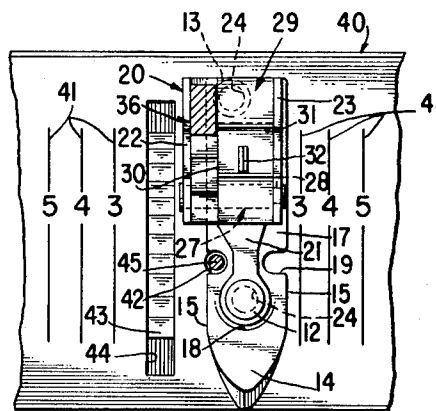


Fig. 4

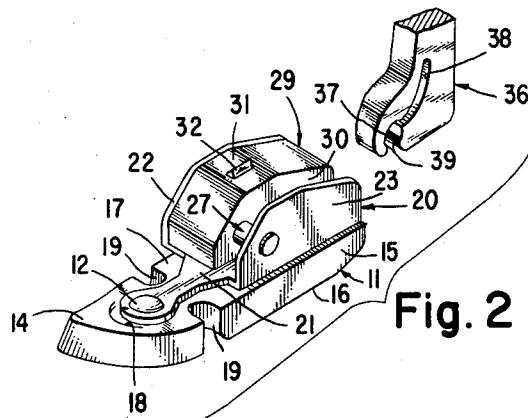


Fig. 2

SNAP-ON ZIPPER FOOT

BACKGROUND OF THE INVENTION

This invention pertains to a presser foot used in those sewing operations requiring the sewing needle to reciprocate adjacent to one side of the presser foot rather than through an aperture in the center portion of the presser foot sole plate. Such a presser foot is required in inserting zippers into an article of clothing or in making corded seams where the bulk of the zipper or the cord under the sole plate would create difficulties.

Most desirably, the presser foot should be convertible so as to be positioned on either side of the needle at the discretion and convenience of the sewer. However prior devices fulfilling the requirements of convertibility were quite bulky with attendant storage problems, fragility and susceptibility to damage affecting their usefulness. Some of these devices require careful positioning by an operator to insure proper alignment of the needle to the device to preclude harpooning of the device with consequent needle breakage and potential harm to the operator. The existing devices are also characterized by relatively high cost.

Accordingly, it is an object of this invention to provide a presser foot which may be readily and accurately converted to be positioned on the right or left side of a sewing machine needle.

It is a further object of this invention to provide such a device of approximately the same size as a conventional presser foot so that the operator's view of the work will not be unduly obscured.

It is a still further object of this invention to provide such a device which will be easy to manufacture from low cost materials and inherently dimensionally accurate.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawing illustrating a preferred form of this invention:

FIG. 1 is an exploded perspective view of the presser foot showing the various parts before assembly of the device,

FIG. 2 is an assembled perspective view of the presser foot showing a portion of the presser foot shank ready for insertion into the presser foot for positioning left of sewing machine needle,

FIG. 3 is a top plan view of the device in the left of the sewing machine needle position, and,

FIG. 4 is a top plan view of the device in the right of the sewing machine needle position.

In FIG. 1 of the drawing is shown the various parts that make up the presser device. In the preferred embodiment of the device a sole plate 11 is molded of a plastic material with a forward upstanding rod 12, and a rear upstanding rod 13. The sole plate is formed with a raised front portion 14, longitudinal sides 15 parallel to the direction of the sewing machine feed, a flat work engaging bottom 16, and a flat top portion 17. A countersink 18 at the base of the upstanding rod 12 extends the flat top portion 17 about the rod and into the raised front portion 14. The sole plate also has needle aperture 19 formed on each longitudinal side 15 thereof laterally opposite each other, behind the forward upstanding rod 12.

A bracket 20 having a base section 21 and two upright ears 22, 23 is formed preferably from sheet metal. The base section 21 is formed with two mounting holes 24 designed to be received on the upstanding rods 12, 13 on the sole plate, thereby to align the upright ears 22, 23 of the racket 20 with the longitudinal sides 15 of the sole plate.

The upright ears 22, 23 of the bracket 20 are formed with two holes 25, 26 laterally opposite each other on a common axis. One of these holes 26 is somewhat smaller than the other in diameter. A pivot pin 27 having an undercut end 28 may be inserted in hole 25 with the undercut end extending through the hole 26.

A spacer block 29, which may be made of synthetic plastic material, is formed with longitudinal sides 30, a top surface 31 from which projects a finger grip 32, a bottom surface 33 formed with a relief 34 in the rear section thereof, and a hole 35 passing through the block at right angles from one longitudinal side to the other longitudinal side. The hole 35 is sized to be a close slidable fit about the pivot pin 27 and is spaced from the bottom of the spacer block the same distance as the holes 25, 26 in the upright ears 22, 23 of the bracket 20 are spaced from the top of the base section 21 of the bracket. The distance between the longitudinal sides of the spacer block, i.e., the width of the block is approximately equal to the distance between the needle apertures in the sole plate.

Referring to FIG. 2, the assembly of the components is made by first placing the bracket 20 via the mounting holes 24 onto the upstanding rods 12, 13 of the sole plate 11. The upstanding rods may be ultrasonically peened over firmly to clamp the bracket onto the sole plate. The pivot pin 27 may then have its undercut end 28 placed through hole 24 in the upright ear 22 of the bracket; through hole 35 in the spacer block 29; and into hole 26 in the upright ear 23 of the bracket. Both ends of the pivot pin may then be upset to secure the pin in place in the bracket. When assembled, the spacer block 29 is freely slidable on the pivot pin between the upright ears 22, 23 of the bracket 20. The bottom surface of the spacer block 29 glides along the top surface of the base section 21 of the bracket 20 with the relief 34 in the bottom rear section of the spacer block providing clearance for the peened over rear upstanding rod, 13, of the sole plate.

There is sufficient space between the upright ears 22, 23 of the bracket 20 to accommodate the spacer block 29 and a conventional snap-on presser foot shank 36 in close fitting arrangement. The operation of the presser foot shank to attach itself to the presser foot is the subject of the U.S. Pat. No. 3,489,114 to which reference may be had and will be explained here in minimum detail. Close to the end of the presser foot shank there is formed a socket 37 approximating the diameter of the pivot pin 27. A narrow elongate slot 38 emanates from this socket and extends substantially lengthwise of the presser foot shank. Entry to the socket 37 is deterred by the constricting mouth defined by the protuberances 39 which deflect apart on the application of force by the presser foot shank against the pivot pin 27 due to the resilience imparted to the presser foot shank by the slot 38. When the pivot pin 27 is seated in the socket 37 the presser foot shank recovers from this deflection, bringing the protuberances 39 into con-

stricting relationship and thereby retaining the pivot pin in the socket 37.

In FIGS. 3 and 4 are shown a throat plate 40 of a sewing machine having seam guiding indicia 41 on both sides of needle hole 42. In both of these figures one leg of a feed dog 43 is shown projecting through the feed dog opening 44 in the throat plate 40, the right leg being visible in FIG. 3 and the left leg being visible in FIG. 4. (The conventional center chaining-off feed dog leg is not visible in either view). In FIG. 3 the presser foot shank 36 is shown inserted into the assembled presser foot on the right side of the spacer block 29 causing the sewing machine needle 45 to register with the needle aperture 19 on the right longitudinal side 15 of the sole plate 11. In FIG. 4 the presser foot shank 36 is shown inserted into the assembled presser foot on the left side of the spacer block 29 bringing the needle 45 into registry with the needle aperture 19 on the left longitudinal side 15 of the sole plate 11. To shift from one side to the opposite side requires only to remove the presser foot shank from the assembled presser foot, slide the spacer block to cover the space left open, and replace the presser foot shank in the space vacated by the displaced spacer block.

Having set forth the nature of this invention what I claim is:

1. A laterally shiftable presser foot for a sewing machine having a sewing needle, a feeding mechanism for feeding work fabric in a longitudinal direction and a presser bar with a presser foot shank attachable

thereto, comprising:

a sole plate having a top surface and a bottom work fabric contacting surface joined by longitudinal and lateral sides and having two needle apertures one on each longitudinal side hereof;

a bracket formed with a base section and two upright ears one on each side of said base section, said base section being attached to said top surface of said sole plate with said upright ears arranged substantially parallel with said longitudinal sides of said sole plate;

a pivot pin extending between and affixed to said two upright ears and parallel to a line joining the centers of said sole plate needle apertures; and

a spacer block embracing and slidable on said pivot pin between said two upright ears and having sides substantially parallel to said two upright ears, said block being of a width between said sides substantially equal to the lateral dimension between the centers of said sole plate needle apertures, said upright bracket ears being spaced apart a distance equal to the combined widths of said block and said presser foot shank,

whereby said spacer block may be shifted on said pivot pin to allow insertion of said presser foot shank on either side thereof thereby to bring said needle apertures selectively into alignment with said needle of said sewing machine on a elected longitudinal side of said sole plate.

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