

[54] **SLIDE FASTENER PRESSER FOOT ASSEMBLY**

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[51] Int. Cl. D05b 35/08

[58] Field of Search 112/235, 60, 61, 240

[56]

References Cited

UNITED STATES PATENTS

3,024,751	3/1962	Burgess.....	112/235
3,511,199	5/1970	Howell.....	112/235
3,511,201	5/1970	Howell.....	112/240
3,716,008	2/1973	Howell.....	112/240

3,726,243 4/1973 Howell..... 112/235
3,735,718 5/1973 Vizgirda et al. 112/235

Primary Examiner—Richard J. Scanlan, Jr.

[57]

ABSTRACT

A slide fastener presser foot assembly including a presser foot component having longitudinal guide channels for receiving the interengaging elements of a slide fastener to be sewn to material and having a top surface with laterally spaced bearing recesses therein, and a pivot mount component for slidably receiving a mounting shank adapted to be attached to a sewing machine presser bar assembly and carrying a pair of laterally spaced pivot bearings for engaging the bearing recesses in the presser foot component to pivotally mount the presser foot component on the pivot mount component.

10 Claims, 4 Drawing Figures

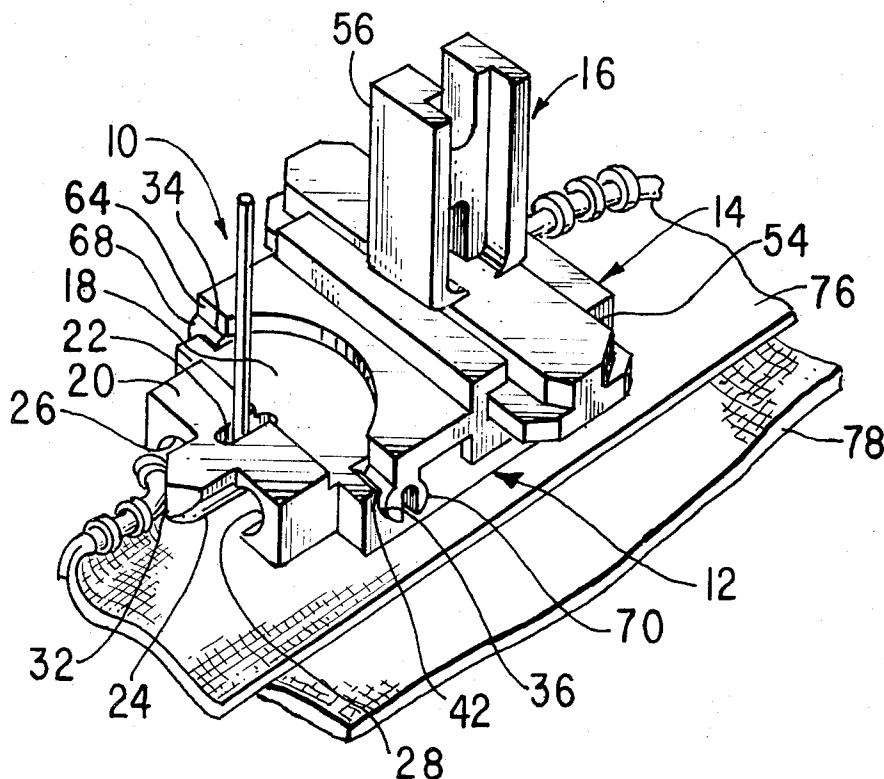


FIG. 1

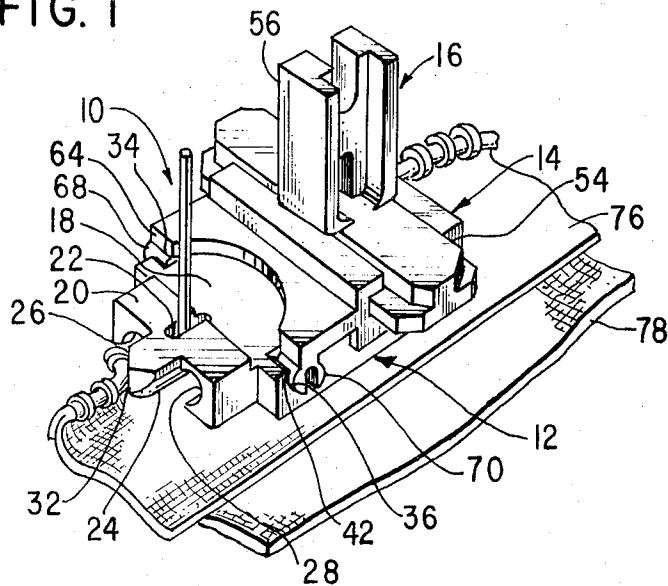


FIG. 3

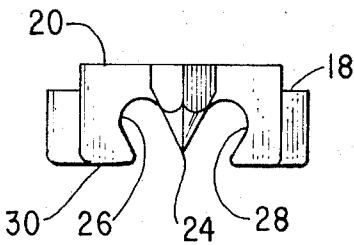


FIG. 2

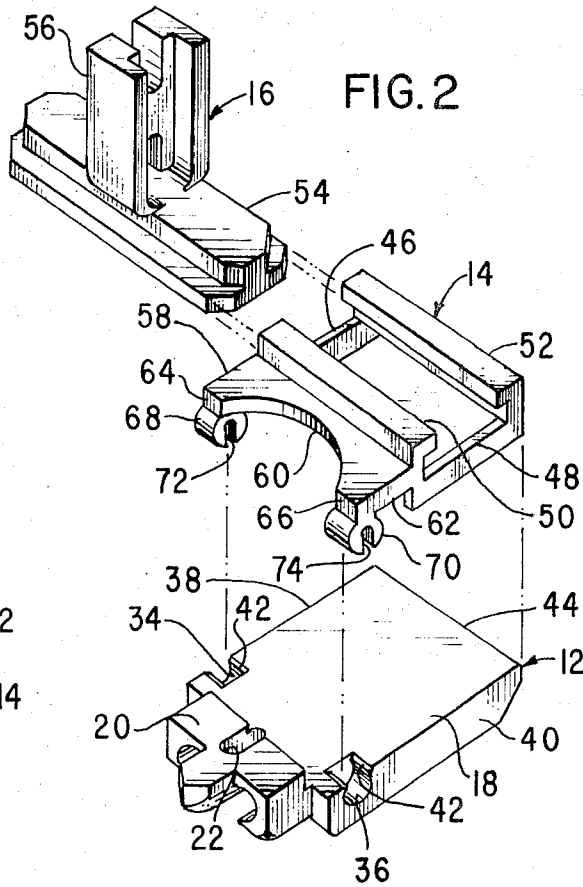
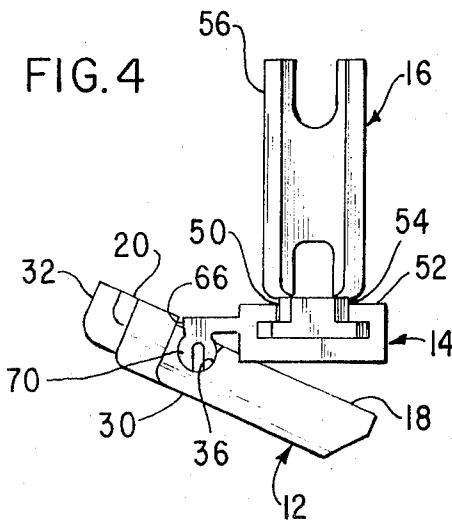


FIG. 4



SLIDE FASTENER PRESSER FOOT ASSEMBLY**BACKGROUND OF THE INVENTION****1. Field of the Invention**

The present invention pertains to the sewing of slide fasteners to material; and, more particularly, to a slide fastener presser foot assembly for attachment to a sewing machine presser bar assembly to facilitate the sewing of a slide fastener to material.

2. Discussion of the Prior Art

Most sewing machines utilize a presser foot to force material being sewn against an advance mechanism which is synchronized with the reciprocating movement of the needle to uniformly feed the material past the needle. A special slide fastener presser foot is normally utilized to sew slide fasteners onto material, such slide fastener presser foot being designed to permit lateral movement thereof to facilitate sewing of the slide fastener to the material adjacent each chain of interengaging elements and further having guides to position the interengaging elements to permit the sewing stitches to be positioned close thereto.

U.S. Pat. Nos. 3,511,199 and 3,646,899 are exemplary of slide fastener presser feet having channels therein to position the interengaging elements of slide fasteners of the hidden or seam-like type, the slide fastener presser feet being adapted to be attached to a conventional presser foot pivotally mounted on a presser bar assembly of a sewing machine. U.S. Pat. Nos. 3,024,751 and 3,511,201 are exemplary of slide fastener presser feet pivotally mounted on a shank adapted to be attached to a presser bar assembly of a sewing machine. However, while prior art slide fastener presser feet have provided pivotal operation during sewing, such slide fastener presser feet have not had the combined advantages of easy interchangeability of various slide fastener presser feet and simple inexpensive manufacture.

SUMMARY OF THE INVENTION

The present invention is generally summarized in a slide fastener presser foot assembly for use with a mounting shank adapted to be attached to a sewing machine presser bar assembly to sew a slide fastener to material including a presser foot component having a bottom surface, a top surface, guide channels recessed in the bottom surface, and first bearing means carried on the top surface; and a pivot mount component including means for slidably receiving a mounting shank adapted to be attached to the presser bar assembly and second bearing means for engaging the first bearing means to pivotally mount the presser foot component on the pivot mount component.

Accordingly, it is a basic object of the present invention to provide a slide fastener presser foot assembly including a presser foot pivotally mounted to permit better control of a slide fastener during sewing of the slide fastener to material.

Another object of the present invention is to construct a pivot mount having a slideway for receiving a slide carried by a mounting shank with a pair of laterally spaced, arcuate pivot bearings, such pivot bearings being aligned with laterally spaced, arcuate bearing recesses in a planar top surface of a slide fastener presser foot having longitudinal guide channels in a bottom surface thereof for receiving interengaging elements of a slide fastener.

A further object of the present invention is to provide a slide fastener presser foot assembly utilizing an adjustable, hinged slide fastener presser foot component for controlling a slide fastener during sewing application to material, the slide fastener presser foot being interchangeably mounted on a pivot mount component to permit various slide fastener presser feet to be similarly mounted thereon.

Some of the advantages of the slide fastener presser foot assembly of the present invention over the prior art are that the slide fastener presser foot is pivotally supported on a pivot mount without requiring additional components such as spring retainers and the like, the slide fastener presser foot requires no superstructure on the top surface thereby reducing mass and resulting in easier pivoting, and the slide fastener presser foot pivots to facilitate control of material and a slide fastener during sewing installation of the slide fastener.

Other objects and advantages of the present invention will become apparent from the following description of the preferred embodiment taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a slide fastener presser foot assembly according to the present invention during the sewing of a slide fastener to a marginal portion of material.

FIG. 2 is an exploded view of the slide fastener presser foot assembly of FIG. 1.

FIG. 3 is a front elevational view of the slide fastener presser foot component of FIG. 1.

FIG. 4 is a side elevational view of the slide fastener presser foot assembly of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A slide fastener presser foot assembly 10 according to the present invention includes as basic components a slide fastener presser foot 12 and a pivot mount 14 for slidably receiving a mounting shank 16 adapted to be attached to a sewing machine presser bar assembly (not shown), as illustrated in FIGS. 1, 2 and 3.

The slide fastener presser foot 12 is made as a one-piece molded plastic component having a generally rectangular outline with a planar top surface 18 having an offset head 20. An elongated slot 22 extends transversely through the slide fastener presser foot 12 at a central position adjacent head 20, the slot 22 being aligned with a V-shaped partition 24 separating a pair of angularly oriented guide channels 26 and 28 longitudinally recessed in a bottom surface 30 of a slide fastener presser foot. A projection 32 extends forwardly from head 20 and has a faceted, diamond-shaped configuration to smoothly engage the interengaging elements of a stringer of a slide fastener of the hidden or seam-like type to roll or turn the stringer into a plane defined by the plane of the corresponding guide channel 26 or 28. A pair of laterally spaced, semi-cylindrical bearing recesses 34 and 36 are formed in top surface 18 aligned with sides 38 and 40, respectively, of the slide fastener presser foot 12, each of the bearing recesses 34 and 36 having bevelled edges 42 terminating at the top surface 18. The recesses 34 and 36 are disposed adjacent head 20 at the front end of the slide fastener presser foot 12, and the top surface 18 is substantially planar from recesses 34 and 36 to a rear end 44 of the

slide fastener presser foot. The projection and guide channel structure of slide fastener foot component 12 is conventional and, accordingly, will not be described in detail; however, reference is made to U.S. Pat. No. 3,735,718 for greater detail with respect to the guide channel and projection structure, the disclosure of such patent being incorporated herein by reference.

Pivot mount component 14 has a pair of side walls 46 and 48 spaced to be contiguous with sides 38 and 40 of slide fastener presser foot 12 when the pivot mount and slide fastener presser foot are assembled, and a pair of opposed L-shaped projections 50 and 52 extend in transverse relation to side walls 46 and 48 to form a slideway for receiving a flanged base or slide 54 of mounting shank 16, an upstanding member 56, having an H-shape in side elevation, extending transversely from the longitudinal center of base 54 in order to permit the mounting shank 16 to be secured to a bolt through the top slot in the upstanding member 56, as is well known in the art. A front flange 58 extends from L-shaped projection 50 and has an arcuate recess 60 therein, and a bottom surface 62 of flange 58 is aligned with the bottom edges of projections 50 and 52 to rest on the top surface 18 of the slide fastener presser foot 12. Flange 58 has flat, front surfaces 64 and 66, and a pair of substantially cylindrical pivot bearings 68 and 70 depend from the bottom surface 62 of flange 58 adjacent front surfaces 64 and 66, respectively. The pivots 68 and 70 have central slots 72 and 74 therein, respectively, such that, with the pivot mount component 14 integrally formed as a one-piece, molded plastic component, the arcuate legs of the depending pivots 68 and 70 can be flexed inwardly for snap attachment of the pivot mount 14 with the slide fastener presser foot 12, the pivots 68 and 70 being aligned to be received in recesses 34 and 36 and having mating configurations relative thereto to pivotally mount the slide fastener presser foot 12 on the pivot mount 14. The pivot mount 14 requires minimal plastic material in that the slideway is formed over a window thereby requiring no bottom wall.

In use, the mounting shank 16 is attached to the presser bar assembly of a sewing machine such that the slide fastener presser foot assembly 10 is laterally movable by the sliding interaction between the slideway formed by projections 50 and 52 of pivot mount 14 and the slide 54 of the mounting shank 16. With the slide fastener presser foot assembly 10 properly positioned, a slide fastener stringer 76 can be sewn to the margin of a piece of material 78 by moving the slide fastener stringer and the material such that the projection 32 rolls or turns the interengaging elements of the stringer into one of the guide channels, such as guide channel 26 as shown in FIG. 1. The slide fastener presser foot 12 can pivot clockwise, looking at FIGS. 1-2 and 4, from a rest position with top surface 18 engaging the bottom edges of projections 50 and 52 and bottom surface 62 until the front surfaces 64 and 66 of the flange 58 abut the beveled edges 42 of the bearing recesses 34 and 36, respectively, during sewing operation such that the hinged or pivotal mounting of the slide fastener presser foot 12 on the pivot mount 14 increases control of the material and the slide fastener to obtain a precise application. The positioning of the bearing recesses 34 and 36 near the front of the slide fastener presser foot 12 coupled with the lack of any superstructure carried on planar top surface 18 facilitate pivoting of the slide

fastener presser foot, and the spacing of the front surfaces 64 and 66 from the head 20 permits pivotal movement of the slide fastener presser foot 12 limited only by abutment of the beveled edges 42 with the front surfaces.

Any slide fastener presser foot can be mounted on the pivot mount 14 by providing the slide fastener presser foot with cylindrical recesses and a planar top surface such that presser feet can be interchanged for various slide fastener applications. To this end, the slotted cylindrical configurations of the pivot bearings 68 and 70 in combination with the mating cylindrical bearing recesses 34 and 36 facilitate snap attachment of slide fastener presser feet constructed in accordance with the present invention with the pivot mount 14 since the arcuate arms of the pivot bearings can be deformed or flexed toward the center during mounting and removal of slide fastener presser feet.

Inasmuch as the present invention is subject to many variations, modifications and changes in detail, it is intended that all matter described above or shown in the accompanying drawings be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A slide fastener presser foot assembly for use with a mounting shank adapted to be attached to a sewing machine presser bar assembly to sew a slide fastener to material comprising

a presser foot component including first bearing means and having a bottom surface, a top surface, opposite sides and a longitudinal guide channel means recessed in said bottom surface for receiving interengaging elements of a slide fastener,

a pivot mount component including means slidably receiving the mounting shank and having second bearing means,

said first bearing means including a pair of laterally spaced recesses in said top surface of said presser foot component,

said second bearing means including a pair of laterally spaced pivots received in said recesses and engaging said first bearing means to pivotally mount said presser foot component on said pivot mount component, and

said pivot mount component including a pair of spaced side walls engaging the opposite sides of said presser foot component during pivotal movement of said presser foot component relative to said pivot mount component.

2. A slide fastener presser foot assembly as recited in claim 1 wherein said pair of recesses have bevelled surfaces adjacent said top surface of said presser foot component, and said pivot mount component includes a flange extending transversely from said slidably receiving means and having front surfaces adjacent said pair of pivots, said front surfaces being arranged to abut the bevelled surfaces of said pair of recesses so as to limit pivotal movement of said presser foot component relative to said pivot mount component.

3. A slide fastener presser foot assembly as recited in claim 1 wherein said recesses and said pivots have mating configurations.

4. A slide fastener presser foot assembly for use with a mounting shank adapted to be attached to a sewing machine presser bar assembly to sew a slide fastener to material comprising

a presser foot component including first bearing means and having a bottom surface, a top surface and a longitudinal guide channel means recessed in said bottom surface for receiving interengaging elements of a slide fastener,

a pivot mount component including means for slidably receiving the mounting shank and having second bearing means for engaging said first bearing means to pivotally mount said presser foot component on said pivot mount component,

said first bearing means including a pair of laterally spaced recesses in said top surface of said presser foot component and said second bearing means including a pair of laterally spaced pivots received in said recesses,

said recesses and said pivots having mating configurations, and

each of said pivots having a cylindrical configuration with a slot therein to define a pair of arcuate arms flexible toward the center to permit snap attachment of said presser foot component to said pivot mount component.

5. A slide fastener presser foot assembly as recited in claim 4 wherein said top surface of said presser foot component is substantially planar, and said pivot mount component has surface means for engaging said top surface of said presser foot component.

6. A slide fastener presser foot assembly as recited in claim 5 wherein said pivot mount component includes projection means defining a slideway adapted to slidably receive the mounting shank and a flange extending from said projection means, said pair of pivots depending from said flange.

7. A slide fastener presser foot assembly as recited in claim 1 wherein said top surface of said presser foot component is substantially planar.

8. A slide fastener presser foot assembly as recited in claim 1 wherein said pivot mount component has surface means engaging said top surface of said pressure

foot component.

9. A slide fastener presser foot assembly for use with a mounting shank adapted to be attached to a sewing machine presser bar assembly to sew a slide fastener to material comprising

a presser foot component including first bearing means and having a bottom surface, a top surface and a longitudinal guide channel means recessed in said bottom surface for receiving interengaging elements of a slide fastener,

a pivot mount component including means for slidably receiving the mounting shank and having second bearing means for engaging said first bearing means to pivotally mount said presser foot component on said pivot mount component,

said top surface of said presser foot component being substantially planar,

said pivot mount component having surface means for engaging said top surface of said presser foot component, and

said presser foot component having a pair of opposite sides, a front end and a rear end, and said first bearing means including a pair of recesses aligned with said opposite sides of said presser foot component adjacent said front end.

10. A slide fastener presser foot assembly as recited in claim 9 wherein said pivot mount component includes a pair of side walls engaging said opposite sides of said presser foot component, a pair of elongate projections extending transversely from said side walls to define a slideway adapted to slidably receive the mounting shank and a flange extending transversely from one of said projections, said flange having a bottom surface and said projections having bottom edges aligned with said bottom surface to engage said top surface of said presser foot component, and said second bearing means includes a pair of laterally spaced, cylindrical pivots carried by said flange.

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