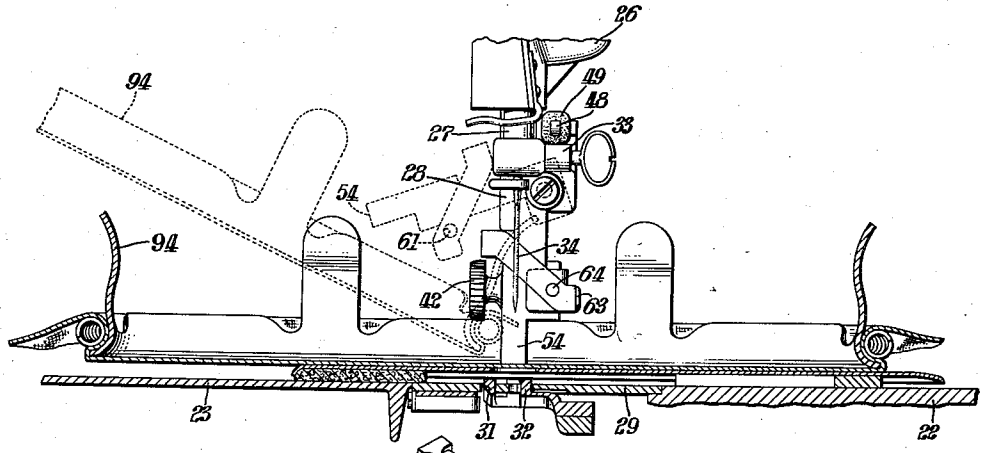
Jan. 19, 1954 J. P. ENOS 2,666,405

HINGED PRESSER-FOOT

Filed June 5, 1951

2 Sheets-Sheet 1

Fig. 1.



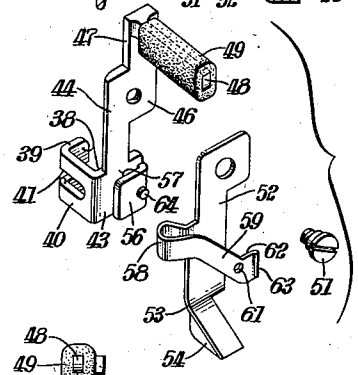


Fig. 2a.

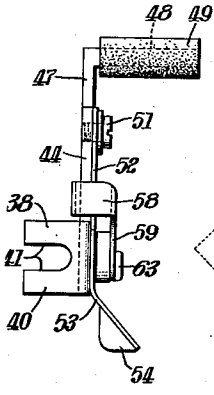


Fig. 3.

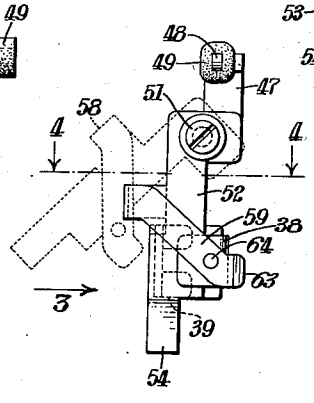


Fig. 2.

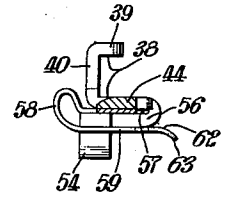


Fig. 4.

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HINGED PRESSER-FOOT

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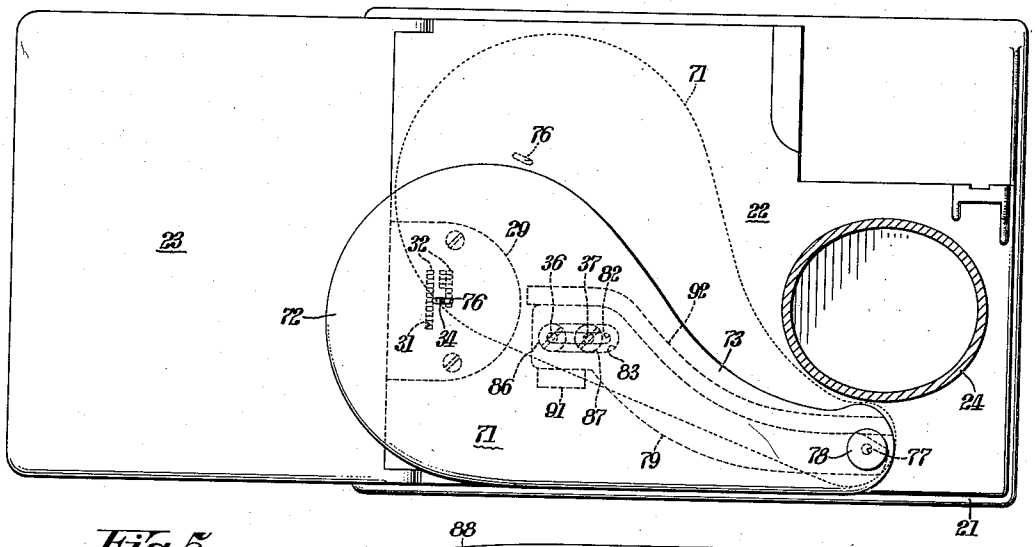


Fig. 5.

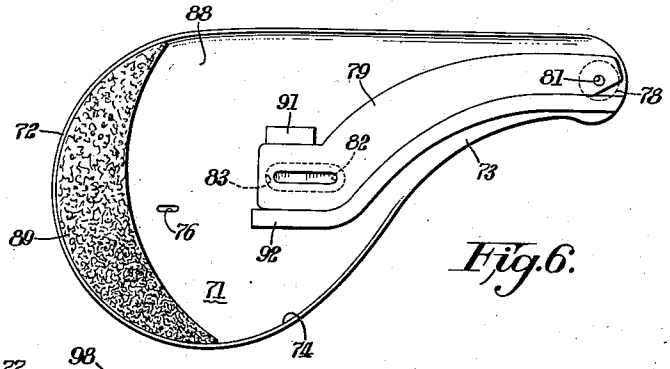


Fig. 6.

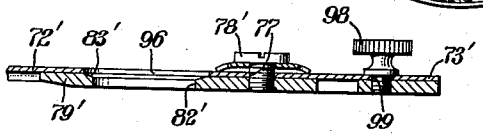


Fig. 9.

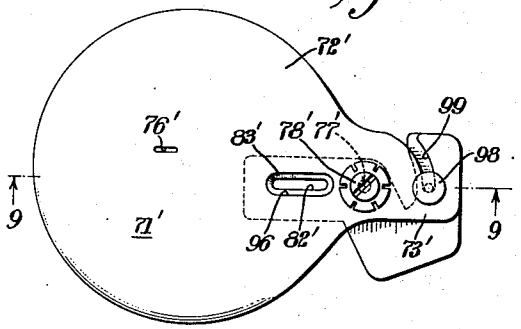


Fig. 7.

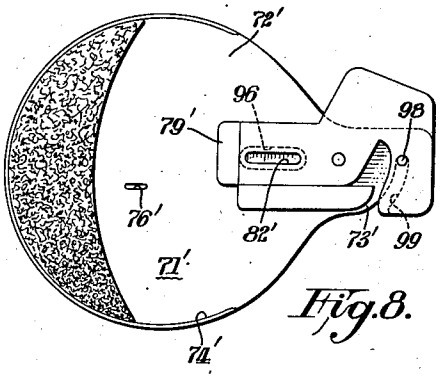


Fig. 8.

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UNITED STATES PATENT OFFICE

2,666,405

HINGED PRESSER-FOOT

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Application June 5, 1951, Serial No. 229,978

4 Claims. (Cl. 112—235)

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This invention relates to sewing machines and more particularly to darning or embroidering attachments designed for use with a number of different types of family sewing machines.

When a family type sewing machine is used for darning or embroidering it is desirable either to render the work feeding mechanism of the sewing machine ineffective in a manner such as is described in U. S. Patent No. 1,879,191, or if the sewing machine is not equipped for rendering the feeding mechanism ineffective, it is desirable to cover the feed-dog of the sewing machine so that the work being darned or embroidered will not be engaged by the feed-dog. One type of feed-dog cover-plate formerly used is shown in U. S. Patent No. 1,122,999. Darning and embroidering is usually done with the help of a work-holder similar to that shown in Patent No. 2,325,515. When such a work-holder is used, it is desirable to provide some means by which the work-holder may easily be passed under the presser mechanism of the sewing machine. This is especially necessary when the available space below the bottom of the presser mechanism is reduced by the use of a feed-dog cover-plate of the type forming the subject of the present patent application. One means that might possibly be used for providing increased space below the presser-bar of a sewing machine is disclosed in U. S. Patent No. 349,439. Devices heretofore generally used have for the most part been designed for use with one particular type of sewing machine and thus one object of the present invention is to provide improved darning and embroidering attachments for use with a number of various types of sewing machines.

Another object of the invention is to provide an improved feed-dog cover-plate that may be attached to any one of several types of sewing machines.

A further object of the invention is to provide an improved presser-foot that is especially adapted for use during darning and embroidering operations.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

Fig. 1 is a fragmentary front elevation of a sewing machine, partly in section, and showing a presser mechanism and a feed-dog cover-plate embodying the present invention;

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Fig. 2 is a front elevational view of the presser-mechanism shown in Fig. 1;

Fig. 2a is an exploded perspective view of the presser-mechanism shown in Fig. 2;

Fig. 3 is a side elevational view of the presser-mechanism as seen in the direction of the arrow 3 of Fig. 2;

Fig. 4 represents a section of the presser-foot taken on the line 4—4 of Fig. 2;

Fig. 5 is a top-plan view of the bed-plate of one type of sewing machine showing the feed-dog cover-plate secured thereto, the bracket-arm of the machine being shown in section;

Fig. 6 is a bottom plan view of the feed-dog cover-plate shown in Fig. 5;

Figs. 7 and 8 show a modified form of feed-dog cover-plate; Fig. 7 being the top plan view and Fig. 8 being a bottom plan view thereof; and

Fig. 9 is a section taken on the line 9—9 of Fig. 7.

Referring more specifically to the drawings, wherein Figs. 1 through 6 disclose a preferred embodiment of the invention as applied to a sewing machine having a substantially rectangular bed-plate or base 21, providing on its upper side a work-support plate 22 and having a hinged extension plate 23. A hollow standard 24 (Fig. 5) rises from the bed 21 and carries an overhanging bracket-arm (not shown) terminating in a head 26 (Fig. 1) and housing the usual reciprocating needle-bar 27 and presser-bar 28.

The work-support 22 is provided with a throat-plate 29 having feed slots 31, through which operates a serrated feed-dog 32. The needle-bar 27 has held thereto by a clamp 33, a reciprocatory needle 34, which cooperates with sewing instrumentalities (not shown) but which are disposed below the throat-plate 29 to form stitches in a well known manner. The work-support plate has a pair of threaded holes indicated generally in Fig. 5 by the numerals 36 and 37. These holes 36 and 37 are conventionally provided in most family-type sewing machines and are intended for locating and securing various forms of attachments to the work-support plate 22.

Presser-mechanism

The presser-mechanism, as best seen in Figs. 2 through 4, comprises a conventional U-shaped attaching shank 38 of which one leg 39 and a bridge 40 are provided with a notch 41. When the presser-mechanism is supported from the presser-bar 28, the U-shaped shank 38 embraces the lower end of the presser-bar 28 and is secured thereto by a clamp-screw 42 located in the notch 41. The other leg 43 of the U-shaped shank 38 has formed integral therewith an up-

standing post 44 having an offset ear 46 substantially midway of its length. The upper end 47 of the post 44 has an integrally formed horizontally extending bar member 48 embraced by a resilient tube 49 which may be of rubber. The tube 49 is positioned to be engaged and lifted by a portion of the needle-bar clamp 33 each time the needle-bar approaches the upper limit of its travel. A pivot screw 51 threaded into the offset ear portion of the upstanding post 44 hingedly supports a presser-arm 52 which is forwardly offset as at 52 and carries at its lower or free end a presser-foot 54 which depends below and to one side of the presser-foot shank 38. The leg 43 of the U-shaped shank 38 also has an integrally formed, folded back wing 56 that provides a vertically extending slot 57 for receiving a portion of the presser-arm 52. Intermediate the ends of the presser-foot carrying arm 52 there is formed a backwardly extending loop 58 from which depends the free end of a presser-foot latching member in the form of a spring latch arm 59. This arm 59 extends downwardly at an angle of approximately 45 degrees, and at its lower end is provided with a hole 61; the extreme end of the arm 52 being bent outwardly as at 62, to form a handle piece 63. The hole 61 in the latch arm 59 is positioned to be entered by a pin or complemental latch-element 64 carried on the outer surface of the previously mentioned folded back wing 56. Engagement of the hole 61 by the pin 64 holds the hinge presser-arm 52 in its operative position.

Cover-plate

A feed-dog cover-plate 71, which is best shown in Figs. 5 and 6 and is designed to fit most family-type sewing machines, is in the form of a dished plate which is substantially pear-shaped in outline, and has a circular portion 72, a neck or shank-arm portion 73, and a depending rolled edge 74. The circular portion 72 of the plate 71 is apertured by an elongated slot 76 positioned to allow passage of the needle of the sewing machine. The shank-arm 73 of the plate 71 is provided with a hole 77 for accommodating a threaded thumb-screw 78 for pivotally mounting the plate 71 upon the free end of a curved base-plate 79 which has a threaded hole 81 entered by the screw 78. The other end of the base-plate 79 has an elongated fastener screw receiving slot 82 that is fashioned to register with the standard attachment-holes 36 and 37 in the bed-plate of the sewing machine. The elongated slot 82 is countersunk in its upper face as at 83 and thereby accommodates the heads of a pair of flathead machine screws 86 and 87. The under surface 88 of the free end of the plate 72 is covered by an adhesively held crescent shaped felt pad 89 which extends slightly below the level of the rolled edge 74, thereby providing a non-scratching surface for engaging the upper, usually painted surface, of the work-support plate 22. A lug-member 91 is secured to and depends from the lower surface 93 of the plate 71, while a curved rib member 92 depends from the same surface 93. These depending members 91 and 92 act as guides to properly position the plate 71 with respect to the base-plate 79.

Operation

When it is desired to perform darning or embroidering operations, the presser mechanism of this invention is secured in place by the clamp-screw 42. Next by removing the thumb screw 78, the feed-dog cover-plate 71 is disconnected from the base-plate 79. Then the anchor-plate 79 is secured by means of the screws 86—87 to the work-support 22 in the position shown in Fig. 5. Thereafter, the feed-dog cover-plate 71 is again secured to the base-plate 79 by the thumb-screw 78 care being taken that the end of the base-plate 79, which contains the slot 82, is positioned between the lug 91 and the rib 92. This positions the elongated needle-slot 76 in register with the needle 34. Then the operator presses the handle 63 of the spring latch 59 sufficiently to disengage the hole 61 from the pin 64. This permits swinging the presser-arm 52 from the lowered operative position shown in solid lines in Figs. 1 and 2 to the upper or raised inoperative position shown in dotted lines. In the raised position, every part of the presser-arm 52, the offset 53 and the presser-foot 54 are above the lowermost end of the shank 38. Then the needle-bar 27 and the needle 34 are moved, in a known manner, to the highest position. This permits the operator to slide the work to be darned or embroidered, and which preferably is carried on a work-holder, similar to that indicated in Fig. 1 by the numeral 94, beneath the sewing machine head 26. Then the presser-arm 52 is swung from the dotted position shown in Figs. 1 and 2 to the position shown therein by solid lines. The sewing machine is now ready to perform darning or embroidering operations. When it becomes necessary to raise the hinged extension-plate 23 of the bed-plate of the machine, in order to replace the lower thread supply or to store the sewing machine in a cabinet, the thumb-screw 78 is loosened sufficiently to permit movement of the cover-plate from the position shown by solid lines in Fig. 5 to the position shown by dotted lines.

Modification

The modified form of feed-dog cover-plate, shown in Figs. 7, 8 and 9, is designated as 71' and comprises an inverted dished and generally circular portion 72' having rolled edges 74' and from one side of which extends a shank-arm 73'. The under side of the plate 71' has a crescent shaped felt pad similar to that discussed in connection with Figs. 5 and 6. The circular portion 72' of the plate 71' is apertured by two elongated slots 76' and 96. The slot 76' is positioned to allow passage of the needle and the other slot 96 is in register with and permits access to another elongated slot 82', presently to be discussed. The shank arm 73' of the feed-dog cover plate 71' is provided with a hole 77' for accommodating a pivot screw 78' by which the plate 71' is pivotally mounted upon a support member or base-plate 79' that is held to the support plate 22 of the sewing machine by a pair of screws (not shown but similar to screws 86 and 87 previously mentioned). These screws enter the previously mentioned threaded holes 36—37 in the machine bed-plate. The screws 86 and 87 pass through a slotted hole 82' which is countersunk as at 83', and the screws are accessible through the plate 71' by means of the previously mentioned oblong hole or screw access slot 96 in the cover-plate 71'. The base-plate 79' has threaded thereto a thumb-screw 98 positioned in a curved notch 99 formed in the outer end of the shank 73' of the cover-plate arm 71' and by which the cover-plate 71' can be locked in place. When the thumb screw 98 is loosened, the cover-plate 71' may be swung on the screw 78', thereby to move the plate

71' from above the hook or shuttle of the particular sewing machine with which the same is being used.

The modified form of cover-plate 71' is used in much the same way as the feed-dog cover-plate 71 shown in Figs. 5 and 6; the major difference being that the anchor-plate 79' is, by means of the screw 78' semi-permanently secured to the feed-dog cover-plate 71', and in that access to the fastening screws 86 and 87 (not shown in Figs. 7 and 8) are obtained through the oblong hole 96 in the feed-dog cover-plate 71.

Having thus set forth the nature of the invention, what I claim herein is:

1. A presser mechanism for sewing machines having a presser-bar and a needle-bar, comprising an attaching shank, a post rising from said shank, a horizontal bar secured to the upper end of said post and positioned for engagement by a portion of said needle-bar, a presser-foot carrying arm pivotally mounted upon said post for swing out movement of the presser-foot from an operative position below to an inoperative position above the level of the lower portion of said shank, a presser-foot latching member carried by said presser-arm, and a complemental latch-element carried by said shank.

2. A presser mechanism for sewing machines, comprising, an attaching shank, a post rising from said shank, an offset ear substantially midway of said post, a presser-foot carrying arm pivotally mounted upon said post adjacent said offset ear for swing out movement of the presser-foot from an operative position below to an inoperative position above the level of the lower portion of said shank, a presser-foot latching member carried by said presser-arm, and a complemental latch-element carried by said shank.

3. A presser mechanism for sewing machines, comprising, an attaching shank, a post rising from said shank, a presser-foot carrying arm pivotally mounted upon said post for swing out movement of the presser-foot from an operative position below to an inoperative position above the level of the lower portion of said shank, a folded back portion formed integral with said shank thereby forming a vertically extending slot for receiving a portion of said presser-foot carrying arm, a presser-foot latching member carried by said presser-foot carrying arm, and a complemental latch-element carried by said shank.

4. A presser mechanism for sewing machines, comprising, an attaching shank, a post rising from said shank, a presser-foot carrying arm pivotally mounted upon said post for swing out movement of the presser-foot from an operative position below to an inoperative position above the level of the lower portion of said shank, a folded back portion formed integral with said shank thereby forming a vertically extending slot for receiving a portion of said presser-foot carrying arm, a presser-foot latching member including a spring loop formed integral with an intermediate portion of said presser-foot carrying arm and depending therefrom at an angle of forty-five degrees, and a complemental latch-element carried by said folded back portion.

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