Dec. 20, 1949 B. A. SCHMITT 2,491,622

SEWING MACHINE MECHANISM FOR PERFORMING DARNING OPERATIONS

Filed June 14, 1948

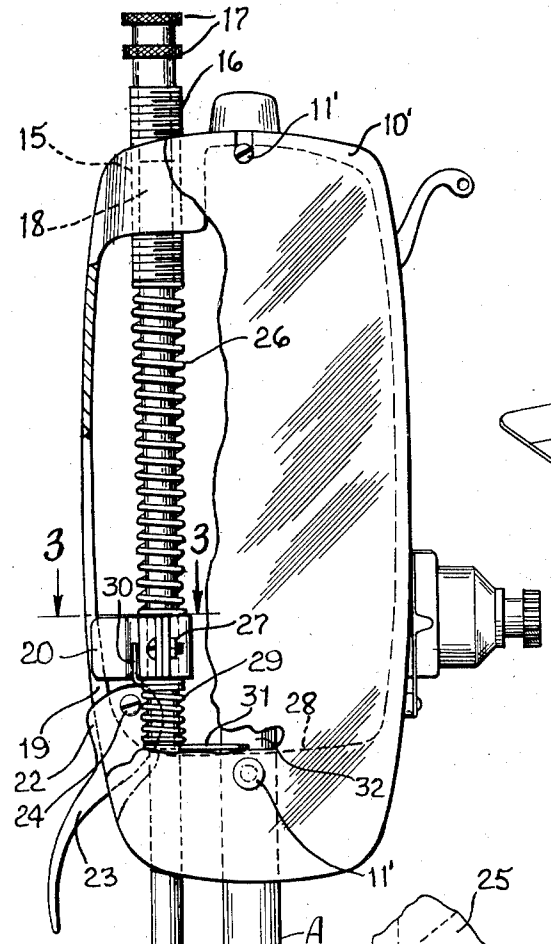


Fig. 1.

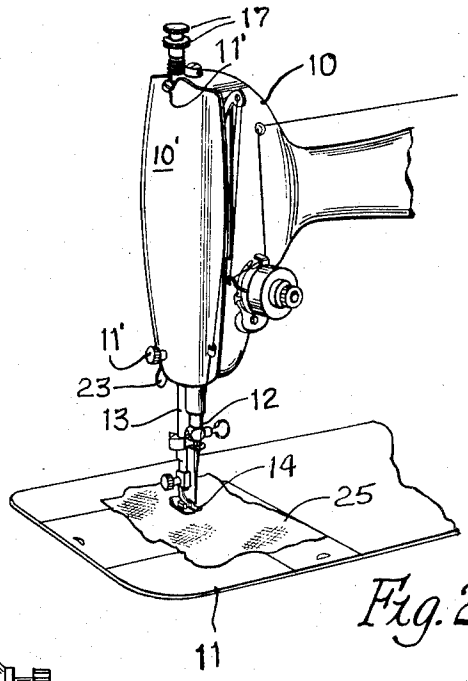


Fig. 2

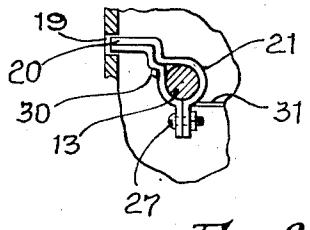


Fig. 3.

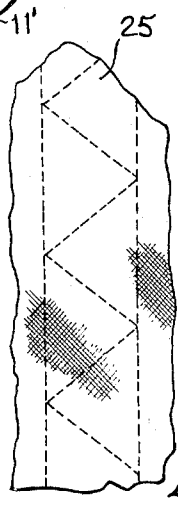


Fig. 5

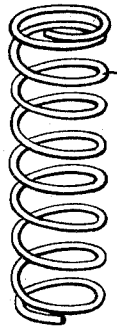


Fig. 4.

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SEWING-MACHINE MECHANISM FOR PERFORMING DARNING OPERATIONS

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1 Claim. (Cl. 112—236)

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My invention relates to sewing machine mechanisms for performing darning operations.

The principal object of this invention is to provide a simple and inexpensive arrangement whereby the sewing machine may by a simple adjustment be converted for darning purposes.

Ancillary to this object is the provision for accomplishing the same by an arrangement which requires the minimum modification of a standard sewing machine head and pressure foot.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

Fig. 1 is a fragmentary part sectional detail view of a sewing machine head with which my invention is associated;

Fig. 2 is a fragmentary perspective view of the sewing machine head and base showing the same converted for darning operation;

Fig. 3 is a fragmentary sectional detail view taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a perspective view of one of the springs embodied in the invention; and

Fig. 5 is a plan view of a specimen of decorative work which may be accomplished by my invention.

In order to appeal to the operator of a sewing machine, who generally is not mechanically inclined but who has been taught how to operate a sewing machine efficiently, it is most desirable that the parts of the sewing machine which must be adjusted by this operator require the minimum degree of effort and skill on his or her part.

With this in mind, I have provided an arrangement whereby by a simple adjustment, the sewing machine may be conditioned for darning purposes. This arrangement will now be described and explained.

In the drawings, wherein I have illustrated the preferred form of construction of my invention, the sewing machine comprises the usual hollow head 10 and base 11. This head includes the cover plate 10' removably secured thereto by the usual screws 11'. Associated with this head 10 is the needle bar 12 and pressure bar 13. The pressure bar 13 carries the pressure foot 14 which cooperates in the usual and well-known manner with the feed dogs (not shown) of the sewing machine for feeding the cloth being sewed. In carrying out the objects of my invention, I form in the head 10 a threaded bore 15. In this bore 15, I thread

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a nut 16. This nut 16 has a knurled head 17 to facilitate threading the nut 16 into the threaded bore 15. This nut 16 is preferably hollow and receives the upper end portion 18 of the pressure bar 13.

Formed in the head 10 is an elongated slot 19. Projecting into this slot 19 is a guide finger 20. This guide finger 20 provides a split sleeve 21 which embraces the pressure bar 13. This guide finger 20 is adapted to be engaged by the cam head 22 of a lifting lever 23 pivoted to the head as at 24 and operating in the lower end portion of the slot 19. This cam head 22 is adapted to engage the finger 20 when pivoted in a clockwise direction as viewed in Fig. 1, to move the pressure bar 13 upwardly to relieve the pressure of the foot 14 upon the goods 25. This operation of the lifting lever 23 is well-known in the art of sewing machines.

Embracing the pressure bar 13 and arranged between the nut 16 and the sleeve 21 is a spring 26. The parts providing this sleeve 21 are secured together by suitable nut and bolt 27.

Embracing the pressure bar 13 and arranged between the sleeve 21 and that portion of the head 10 indicated at 28 is a spring 29.

In conditioning the pressure bar 13 for sewing operation by the sewing machine, the nut 16 is adjusted against the spring 26 to compress the spring 29 to bring the pressure foot 14 properly down upon the feed dogs for effectively cooperating wtih those dogs to effectively feed the goods 25 being sewed upon.

To condition the machine for darning operation, the nut 16 is adjusted to permit the upward movement of the pressure bar 13 by the expansion of the spring 29, the degree of expansion being determined by the amount of space desired between the pressure foot 14 and the cloth-feeding dogs. This space should be of that degree which will permit the cloth 25 to be moved freely between the foot 14 and the feed dogs. In this position of the pressure bar 13 under the control of the spring 29, the sewing machine is now conditioned for darning purposes.

The spring 29 performs the additional function of yieldably holding the guide finger 20 from vibrating against a wall of the slot 19 during the operation of the machine. This is accomplished by bearing one end portion 30 of the spring 29 against the finger 20. After slightly tensioning the spring 29 when mounted upon the pressure bar 13, the opposite end portion 31 of the spring is placed to bear against the needle bar bushing 32 or other part of the head 10. The torsional

effects of the spring 29 holds the finger against one wall of the slot with sufficient yieldable pressure to prevent vibration of the finger and yet not to interfere with the smooth movement of the same in the slot 19.

In thus conditioning the sewing machine for this purpose, it will be apparent that there is required only a simple adjustment of the nut 16.

It will be apparent that the accomplishment of the object requires a minimum alteration in the sewing machine head and the employment of relatively few parts.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

The combination with a head of a sewing machine in which there is a guide slot, a guide finger movable in the slot, a sleeve provided by the guide finger, a pressure bar arranged in the head and carrying the sleeve, means for connecting the sleeve to the bar, spring elements embracing the bar on opposite sides of the sleeve for resisting the movement of the bar in opposite directions with respect to said head, and means adjustably carried by said head and acting on one of said spring elements to vary the resistance of said spring elements, one of said spring elements having one end portion bearing against said finger and an opposite end portion bearing against an element of said head for yieldably holding said finger against a wall of said slot.

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The following references are of record in the file of this patent:

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