Nov. 21, 1939. H. A. SCAVELLI ET AL 2,180,696

SEWING MACHINE

Filed Aug. 31, 1937

Fig. 1

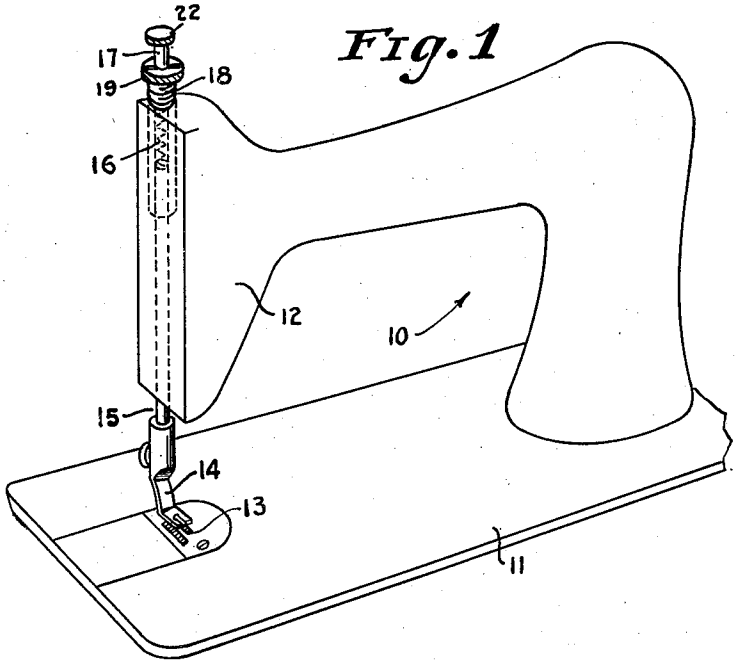



Fig. 3

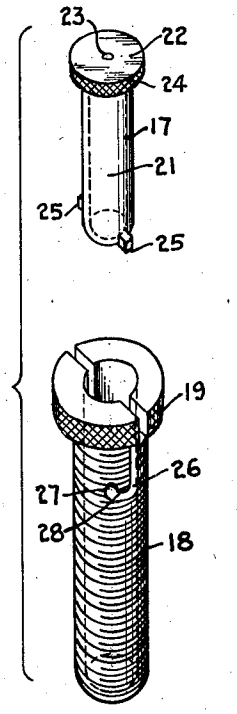
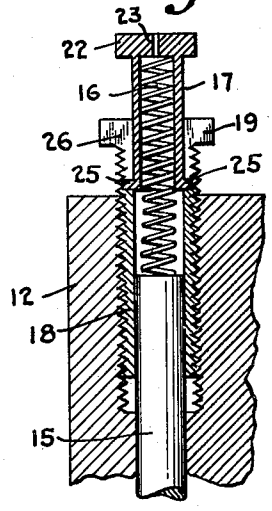



Fig. 2




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2,180,696

## SEWING MACHINE

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2 Claims. (Cl. 112—236)

This invention relates to improvements in attachments for sewing machines and more particularly to improved auxiliary mechanisms for permitting raising the presser foot thereof.

In the conventional type of sewing machine the goods are held between a so-called presser foot and a plurality of reciprocating dogs, the goods being moved by the dogs and so passed beneath the oscillating needle whereby they are sewn. The presser foot is mounted upon a presser bar usually vertically slidable in the head of the sewing machine and held in position by means including a spring positioned against the top of the presser bar and abutting against a threaded head whereby the tension can be adjusted. It is also usual to provide a lever actuated cam acting against a portion of the presser bar whereby the presser foot can be substantially raised when it is desired to disengage the material from the dogs in order to move same about under the foot.

When sewing substantially thick materials such for example as quilted goods or heavily padded materials, it is necessary to adjust the tension acting against the presser bar in order that the machine will work smoothly. This tension adjustment on machines of conventional types, is usually effected by turning the threaded head, bearing against the spring tensioning means, thereby raising the head and substantially relieving the tension acting against the presser bar. In the event however, that it is desired to move the goods about beneath the presser foot it is necessary to even further relieve the tension in order that the foot may be raised. It will be apparent that manipulation of a threaded head to effect these results is substantially a tedious process and time consuming.

It is an object of the present invention to provide means whereby the tension acting against the presser foot bar can be quickly and easily relieved or altered.

It is another object of the present invention to provide means for disengaging the material from the reciprocating dogs positioned in the base plate of the machine whereby the material can be sewn in any direction and without relation to the direction of movement of the reciprocating dogs. It is a feature of the device according to the present invention that this type of movement permits the user to darn, mend, monogram or embroider materials in a manner not feasible or possible with devices as heretofore known.

It is also an object of the present invention to provide means whereby the tension exerted against the presser bar can be substantially entirely released whereby the bar can be moved and it is a further feature of the device according to the present invention that this tension when relieved can be immediately restored by one simple movement instead of continued manipulation of a threaded head as has been heretofore necessary.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawing which forms part of the application.

Figure 1 is a perspective view showing a conventional type of sewing machine head with parts omitted for clearness and illustrating a preferred embodiment of the present invention.

Figure 2 is a vertical sectional view taken through a portion of the sewing machine head illustrated in Figure 1, and

Figure 3 is an exploded perspective view of the device according to the present invention.

In the portions of the conventional type of sewing machine illustrated in Figure 1, 10 comprises the sewing machine proper mounted on the base 11 and carrying the head 12. The reciprocating dogs utilized in moving the material under the sewing machine needle are generally indicated at 13, the goods being held against said dogs by the presser foot 14 carried on the presser bar 15 which is vertically slidable in the head 12. The upper end of the bar 15 abuts against the spring tensioning means 16 which is mounted within the cap 17 held in the threaded sheath 18 substantially as shown. The threaded sheath 18 is adapted to be received in and engage with the threads of a tapped opening in the head 12 in a manner whereby a portion of the presser bar 15 passes through the opening in the lower ends of said sheath and extends upwardly therein for a portion of the length thereof. The upward portion of the sheath is provided with a knurled head 19 formed integral therewith whereby rotative movement can be imparted to the sheath and accordingly whereby it can be advanced in and out of the head.

The cap 17 comprises a substantially cylindrical portion 21 and a cap portion preferably having an opening therein indicated at 23 which serves to prevent the formation of a pressure or vacuum in the air spaces included within said cylinder and also serves as a means for introducing oil in the even that it is desired to lubricate the presser bar mechanism. It is preferred that the cap 22 be provided with knurled edges

24 substantially as shown whereby rotative movement thereof will be facilitated. Near the lower end of the cylindrical portion 21 protruding lugs 25 are provided which are adapted to engage with openings 26 in the member 18 whereby the conventional bayonet type engagement is provided. It will be noted that the member 17 can be removed from engagement with the member 18 by positioning the lugs 25 in the vertical slot portions of the openings 26 whereby the member 17 can be raised out of engagement with the member 18. In the event that it is desired to hold the member 17 in substantially fixed position within the member 18 the lugs 25 are positioned within the horizontal portion of the openings 26 and by exerting a clockwise rotative movement thereto the lugs are positioned in the portions 27 of the openings 26 wherein they are held in substantially locked position by the abutments 28 and by the pressure in the tensioning means 16 tending to impart upward movement to the member 17.

In use the member 18 is positioned in threaded engagement within an opening in the sewing machine head substantially as illustrated in Figure 1 and the member 17 is positioned within the member 18 in substantially locked relationship whereby the lugs 25 are disposed within the restricted area 27. Under these conditions the spring tensioning means 16 acting against the presser foot bar 15 can be adjusted by rotative movement of the knurled head 19 whereby the member 18 is advanced upwardly or downwardly as desired in the head 12. When the tension acting against the presser foot bar has been adjusted to the desired value and it is desired to relieve the pressure, movement is imparted through the cap 22 whereby the lugs 25 are moved into the vertical slot 26 of the head 18 thereby causing the spring tensioning means 16 to move the member 17 upwardly within the sheath 18 and thereby substantially entirely relieving the pressure exerted by the tensioning means against the upper portion of the presser foot member 15. It will be noted that this method of relieving the tension exerted upon the presser foot bar is accomplished by relatively small rotative movement imparted to the member 17 and that when it is desired to restore the pressure a correspondingly small movement of said member effects the purpose. It will also be noted that relieving the pressure in the tensioning means does not alter the adjustment so that when the pressure is restored it is of substantially the same degree as it was at the point when it was relieved inasmuch as no rotative movement of the adjusting head 19 is necessary during the operation of relieving or restoring the pressure.

It is to be understood that this improvement is capable of extended application and is not confined to the exact showing of the drawing nor to the precise construction described, and therefore, such changes and modifications may be made therein as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

We claim:

1. In a sewing machine including a spring-pressed presser rod, the improvement which includes a presser-foot adjustment comprising a hollow cylindrical sheath axially adjustably mountable in a sewing machine head in coaxial relation to the free end of the presser rod, said sheath having a slot formed therein, opening at the free end of said sheath; a hollow cap slidably received within and engaging with parts of said sheath for holding the tensioning spring against the presser rod; and means, operable by rotation of said cap relative to said sheath, for releasing said cap to permit free sliding motion thereof with respect to said sheath, whereby free untensioned motion of the presser rod is permitted, said means comprising a stud carried on said cap riding in said slot formed in said sheath.

2. In a sewing machine including a spring-pressed presser rod, the improvement which includes a presser-foot adjustment comprising a hollow cylindrical sheath axially adjustably mountable in a sewing machine head in coaxial relation to the free end of the presser rod, said sheath having a slot cut from one end of said sheath substantially parallel to the axis of said sheath with an offset portion in the distal end thereof and opening through the free end of the sheath; a hollow cap slidably received within and engaging with parts of said sheath for holding the tensioning spring against the presser rod; and means, operable by rotation of said cap relative to said sheath, for releasing said cap to permit free sliding motion thereof with respect to said sheath, whereby free untensioned motion of the presser rod is permitted, said means comprising a projecting formation on said cap received in said slot.

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