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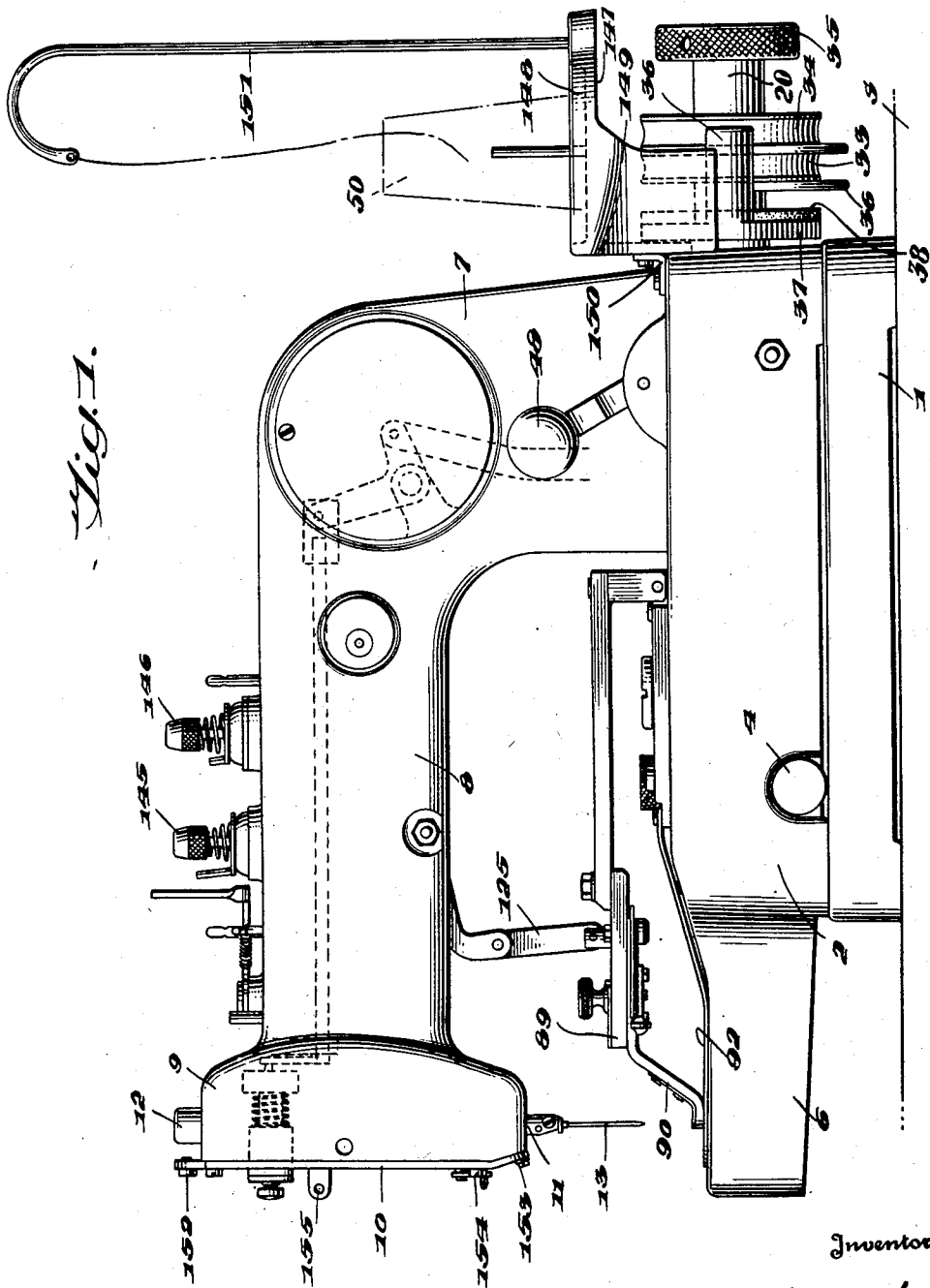
W. T. MAXANT

2,700,352

GUARDING MECHANISM FOR BUTTON SEWING MACHINES

Original Filed May 3, 1945

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 2.

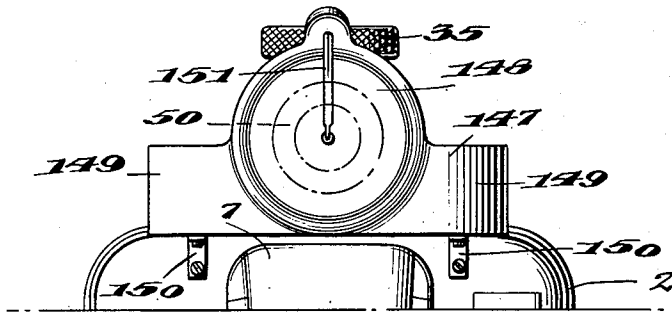
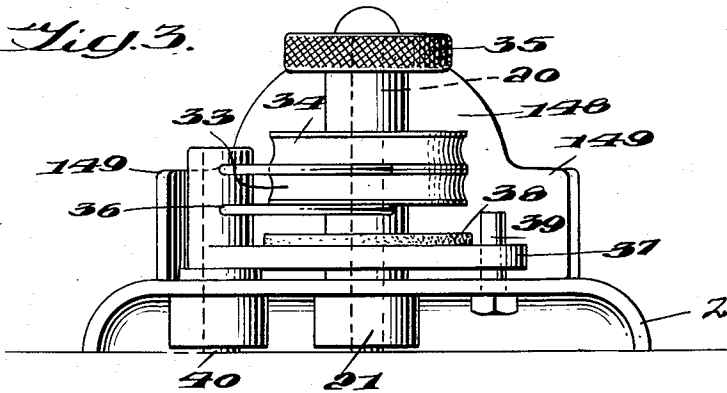


Fig. 3.



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1

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GUARDING MECHANISM FOR BUTTON SEWING MACHINES

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Original application May 3, 1945, Serial No. 591,656.
Divided and this application March 22, 1951, Serial No. 216,975

1 Claim. (Cl. 112—261)

This application is a division of my application filed May 3, 1945, Ser. No. 591,656, for Stop Motion Mechanism for Button Sewing Machines, now Patent No. 2,563,854, granted August 14, 1951.

This invention relates to improvements in button sewing machines, particularly of the character used for sewing flat buttons on work of various kinds, such as strips of cloth, articles of clothing, and the like. It relates more particularly to machines which are used for attaching either two-hole or four-hole buttons thereto by stitching through the eyes of the buttons and the cloth, especially such machines as are operated by power.

One object of this invention is to improve the construction of such button sewing machines by simplifying their structure, reducing the cost of manufacture and providing for more practical operation of the machine by the enclosing of the operating parts thereof, out of the way of the cloth and protected from the cloth or lint which would otherwise interfere with the functioning thereof.

This object may be accomplished according to one embodiment of the invention by the provision of a pulley guard that extends over the respective drive pulleys of the machine protecting the latter against liability of contact of the cloth therewith. This pulley guard preferably has flaring sides that partly embrace the pulleys and a top portion that may include, if desired, a spool stand formed integrally therewith.

This embodiment of the invention is illustrated in the accompanying drawings in which:

Fig. 1 is a side elevation of the button sewing machine with the pulley guard in place thereon;

Fig. 2 is a top plan view of a portion thereof; and

Fig. 3 is a bottom plan view thereof.

The machine is adapted for end operation with the operator facing the machine, and with the machine supported on a table, work-bench, or other support, generally designated at S. Accordingly, the machine is constructed with a machine bed designated generally by the numeral 1, adapted to be mounted on or secured to the support S.

A hollow base 2 is connected with the bed 1, by pivotal connections for swinging movement of the base 2, away from the bed 1 to gain access to the operating parts of the machine housed within the base. Normally the base is held in a closed position on the machine bed 1 by a thumb screw 4, which extends through an orifice in one side of the base 2 and engages a recess in a lug attached to the bed 1, which lug extends upwardly within the base 2.

The base 2 encloses the principal operating parts of the machine and confines these from entanglement of the cloth therewith, as well as presenting a more attractive appearance to the machine. The base 2 has a forward extension 6 on the front end thereof over which the button clamp is disposed as hereinafter described, which extension is of appreciably less width than the base, to facilitate the manipulation of the articles and to provide access to the button clamp by the operator.

The base 2 also supports the usual upstanding standard 7 fixed on the base, with an arm 8 extending horizontally from the upper end of the standard 7, which arm carries the usual sewing head 9 at the free end thereof. These parts are hollow and communicate at their lower end with the base 2. These parts comprising the standard 7, arm 8, and sewing head 9 are preferably cast integral and either secured rigidly on the base 2 or cast integral

2

therewith. The outer side of the sewing head 9 is initially open but is enclosed by a cover plate 10 which is detachably mounted thereon in the usual manner.

The sewing head 9 has the usual needle bar 11 mounted therein and guided at the top through a bushing 12 for reciprocating movement vertically through the head 9. The lower end of the needle bar 11 carries the usual sewing needle 13. The needle bar 11 is adapted to be reciprocated sufficiently far to project the needle 13 into the base extension 6 for cooperating action with sewing instrumentalities contained therein.

The drive shaft 20 is operatively connected with the needle bar 11 to reciprocate the latter axially a sufficient number of strokes to provide for the effective attachment of the button to the cloth. The particular means for transmitting motion from the drive shaft 20 to the needle bar 11 forms no part of the present invention and is not illustrated or described in detail inasmuch as it is set forth in the above mentioned application, Ser. No. 591,656, filed May 3, 1945, now Patent No. 2,563,854, to which reference may be had for a more complete description thereof.

At the opposite end, the drive shaft 20 projects through a bushing externally of the base 2, and has mounted on said projecting end of the shaft fixed and free pulleys 33 and 34, respectively, the former being fixed to the shaft 20 and adapted to receive a drive belt from a suitable source of power. On the extreme end of the shaft 20 is mounted a hand wheel 35 pinned to the shaft for manual turning thereof when desired.

The machine is provided with a shifter yoke, generally designated by the numeral 36, and formed by a pair of shifter arms which embrace opposite sides of the belt and shift the belt from one pulley to the other, either to drive the shaft 20 when the belt engages the pulley 33 or to run free of the shaft on the loose pulley 34. The shifter yoke 36 is connected with a brake shoe 37 which moves with the yoke and carries a lining 38 fixed to the brake shoe 37 to move the lining into frictional engagement with the pulley 33, so as to stop the rotation of the pulley and drive shaft 20 when the brake lining 38 is shifted into engagement therewith. The parts are so disposed that the lining will be shifted into engagement with the pulley 33 when the belt is shifted from this pulley onto the pulley 34 by axial displacement of the yoke 36.

The brake shoe 37 extends transversely of the base 2 and is guided at one end on a pin 39. The opposite end of the shoe 37 is formed integral with the support which carries the arms forming the shifter yoke 36. This support is mounted rigidly on a stop shaft extending in the base 2.

The button to be stitched onto the cloth is supported by a button clamp generally designated at 89 and usually provided with a pair of clamping jaws 90 for holding the button. The button clamp 89 is pivotally supported on the base 2 to be raised or lowered relative thereto by linkage generally indicated at 125, to receive between the button clamp and a cloth plate 92 the cloth to which the button is to be applied.

The usual thread tension devices may be used as indicated generally at 145 and 146, which tension devices may be of any well-known construction and need not be described in detail.

The thread is supplied from a spool 50 mounted on a stand generally designated at 147 at the back end of the machine, as shown in Figs. 1 and 2. This stand includes a flat supporting plate 148 and integrally cast flaring sides 149 formed in one integral piece with said plate, so as to extend over the top and down opposite sides of the pulleys 33 and 34. Thus the thread holder also forms a guard for the pulleys and belt as well as a support for the thread.

The thread holder 147 is detachably supported by brackets 150 secured upon the base 2. An upstanding hook member 151 is carried by the stand 147 and has an eyelet in the upper end thereof in position to overlie the spool mounted on the stand for guiding the thread therefrom.

The face plate 10 has the usual eyelets 152 and 153 (Fig. 1) in the upper and lower portions thereof, and an

3

intermediate thread guide generally indicated at 154. A thread guide is shown also at 155 projecting through a slot in the face plate 10 and carried by the needle bar 11.

Before starting the sewing operation, the material is placed beneath the button clamp upon the cloth plate 92 of the button clamp. This should be done when the button clamp is in its elevated position, which will afford ready access thereto for this purpose. The button is then inserted into the clamping jaws 90, and the button clamp 89 is lowered to the position shown in Fig. 1.

The operator then swings the hand lever 48, which controls the stop motion mechanism. This action frees the shaft 20 for rotation.

The forward movement of the stop motion shaft by the lever 48 slides the belt shifter 36 inwardly which not only shifts the belt from the pulley 34 to the pulley 33, but also releases the brake lining 38 from the face of the pulley 33 which frees this pulley and the shaft connected therewith for rotation by the belt. The drive shaft 20 is then operated by the pulley 33.

The rotation of the drive shaft 20 reciprocates the needle bar 11 through a stroke sufficient to direct the needle downwardly into the base extension 6 for co-operating stitching action with the sewing instrumentalities therein that are operated by the main shaft 20.

The particular means for controlling the stitches and the button clamp and for stopping the operation at the completion of the sewing cycle have not been illustrated

4

or described in detail because they are sufficiently set forth in the above-mentioned patent application, Ser. No. 591,656, now Patent No. 2,563,854.

The invention has been illustrated and described in one embodiment, but it is recognized that variations and changes may be made therein without departing from the invention as claimed.

I claim:

10 In a sewing machine having a base structure with a drive shaft journaled therein and projecting at an end therefrom, and a driving pulley mounted on said projecting end of the drive shaft, the combination therewith of a guard detachably secured on the base structure and including a top portion extending over the pulley and having depending sides in embracing and guarding relation with opposite sides of the pulley, said top portion having a flat top surface extending over the pulley adapted to support a spool of thread thereon, means on said flat top surface for holding the spool of thread in place thereon, and means mounted on said flat top surface and projecting upwardly therefrom for guiding the thread from said spool.

References Cited in the file of this patent

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