June 24, 1958 S. J. HAMLETT 2,840,022

BOBBIN WINDER

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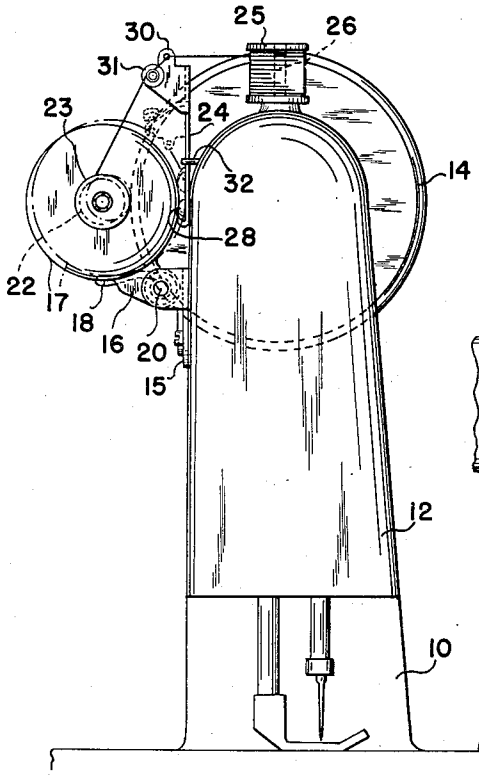


FIG. 1

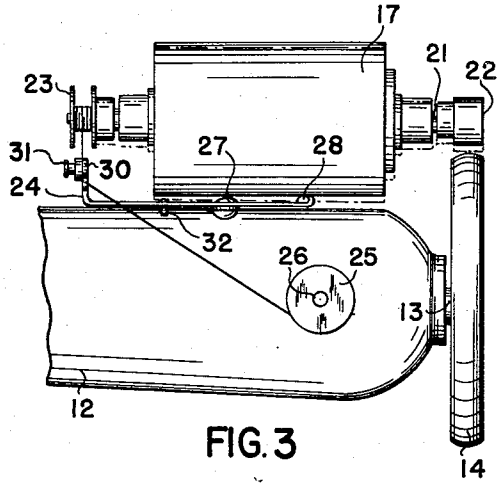


FIG. 3

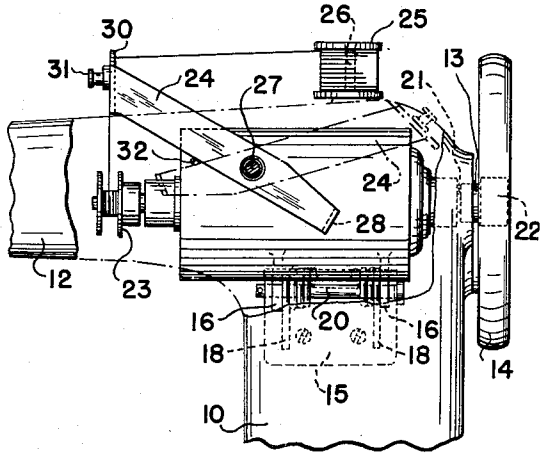


FIG. 2

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BOBBIN WINDER

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1 Claim. (Cl. 112—218)

This invention relates to a sewing machine, and more particularly, to an improved and novel bobbin winder mechanism for a sewing machine.

It is a general object of this invention to provide a bobbin winder mechanism for a sewing machine which is simple in construction, efficient in operation, and wherein the bobbin can be quickly and easily mounted in a bobbin winding position and operatively connected to the power source for the sewing machine.

It is another object of the invention to provide a bobbin winder mechanism for a sewing machine of the type where a power source or motor is operatively connected to a hand wheel through a friction driving member in contact with the hand wheel, and wherein the improved and novel mechanism for winding the bobbin includes a pivoted lever to engage and disengage the power source to correspondingly disengage and engage the driving member from the hand wheel and to utilize the power source to effect a bobbin winding operation when the power source is disengaged from the hand wheel.

Further and additional objects and advantages not hereinbefore referred to will become apparent during the description of the embodiment of the invention which is to follow.

Referring to the accompanying drawing illustrating said embodiment of the invention and forming part of this specification,

Fig. 1 is an end elevational view of a sewing machine head embodying the invention;

Fig. 2 is a fragmentary side elevational view of the sewing machine head with a portion of the side of the machine broken away to show the bobbin winding mechanism on the opposite side of the head; and

Fig. 3 is a fragmentary top plan view of the sewing machine head as illustrated in Fig. 2 and shows in full lines the motor when operatively disengaged from the hand wheel and in bobbin winding position.

The sewing machine head comprises the usually vertically extending standard **10** supported by the sewing machine bed **11**, and having at its upper end the integral horizontally extending arm **12**. The sewing machine head rotatably mounts in suitable bearings a horizontal main shaft **13** extending lengthwise of the arm **12** of the head and having permanently fixed thereto a hand wheel **14** as is well known. The rear side of the standard **10** has secured thereto a bracket **15** to which is pivotally connected the supporting arm **16** that is secured to and mounts the electric drive motor **17** for the sewing machine. Associated with the bracket **15** and the supporting arm **16** there is provided spring means **18** mounted on the pivot pin **20** in a conventional manner so as to constantly urge the motor **17** towards the machine head. The motor **17** mounted in this manner is movable towards and away from the standard **10**.

The motor **17** in this instance is provided with a drive shaft **21** which is adapted to extend from both ends of the motor housing so as to operatively engage the hand

wheel **14** during a sewing operation and also to receive a bobbin to effect a bobbin winding operation. The right hand end of the driving shaft **21**, as shown in the drawings, is provided with a friction driving member or pulley **22** suitably secured thereto. The pulley **22** may be made of soft rubber or the like so as to frictionally drive the hand wheel **14** upon being positioned into contact therewith, in preparation for a sewing operation. The opposite end, the left hand end of the drive shaft **21** also extends from the motor housing and is adapted to receive the bobbin **23** by means of a spring clip or other convenient conventional means.

A control lever **24** is provided for moving the drive motor **17** away from the machine head against the action of spring **18** to cause the driving pulley **22** to respectively engage and disengage the hand wheel **14** in response to the positions of the control lever. When the motor **17** is disengaged from the hand wheel **14** it is then utilized to drive the bobbin **23**, supported on the driving shaft **21**, to receive thread from a spool **25** mounted on a stub shaft **26** provided on the top portion of the machine head in a conventional manner. The control lever **24** is pivotally mounted intermediate its ends by means of the pivot pin **27** secured to the back side of the sewing machine head to allow the lever to move between the motor **17** and the machine head.

The control lever **24** is provided with flanges **28** and **30** at each end. The flange **30**, is provided to project farther than the flange **28** so as to receive a thread guide **31** at the extremity thereof. The height of the flange **28** is arranged so that upon pivoting the lever **24** between the drive motor **17** and the machine head, the motor is moved away from the machine head to cause the disengagement of the pulley **22** with the hand wheel **14**. A pin **32** or stopping means is provided on the machine head to limit the rotation of the lever **24**, as may be readily seen in Fig. 2.

From the above structural arrangement, the operation of the bobbin winder mechanism should be readily apparent. Upon positioning the spool **25** on the shaft **26**, the thread is passed from the spool through the thread guide **30** and secured to the bobbin **23**. The control lever **24** is then positioned with the flange **28** abutting the motor **17** so as to move the driving pulley **22** out of engagement with the hand wheel **14** as shown in full lines in Fig. 3. The machine may now be started and the energization of the drive motor **17** will cause the thread from the spool **25** to be transferred onto the bobbin **23**. Upon transferring the desired amount of thread onto the bobbin **23** the machine may be stopped and the bobbin **23** positioned on the shuttle for the machine in preparation for the sewing operation. The lever **24** may then be adjusted so as to cause the disengagement of the flange **28** from the motor **17**, whereupon the driving pulley **22** is operatively connected with the hand wheel **14** by the action of spring **18** as shown in broken line position and the machine is then ready for the ensuing sewing operation.

Although a preferred embodiment of the invention has been illustrated and described, it will be understood the invention is not to be limited thereto, and may take various modified forms coming within the scope of the appended claim.

Having thus described my invention, I claim:

In a sewing machine head having a hand wheel connected to the operating shaft that is located in the horizontal arm of the head, a drive motor pivotally mounted on the side of the head and having a spindle both ends of which project from the motor housing and the axis of which is parallel to but spaced radially from said operating shaft, one of said spindle ends mounting a friction driving element adapted to engage the hand wheel con-

nected to said operating shaft and the other of said spindle ends being adapted to mount a bobbin, spring means normally urging said motor toward said head to engage said driving element with said hand wheel, a lever pivoted to said head intermediate the ends of the lever and provided on one end thereof with a flange which when said lever is swung in one direction is interposed between said head and motor and directly engages said motor to exert a force thereon to move it against the action of said spring means and disengage said driving element from said hand wheel, said lever being provided at its other end with a flange portion mounting a thread guide adapted to guide a thread to the bobbin mounted on said other end of said spindle, and stop means carried by said head and engageable by said lever to limit movement of the latter in the direction wherein said flange is interposed between said head and motor or in the opposite direction.

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