Feb. 5, 1924. 1,482,518

F. M. LASERSON

SEWING MACHINE MOTOR

Filed Aug. 13, 1920

Fig. 1

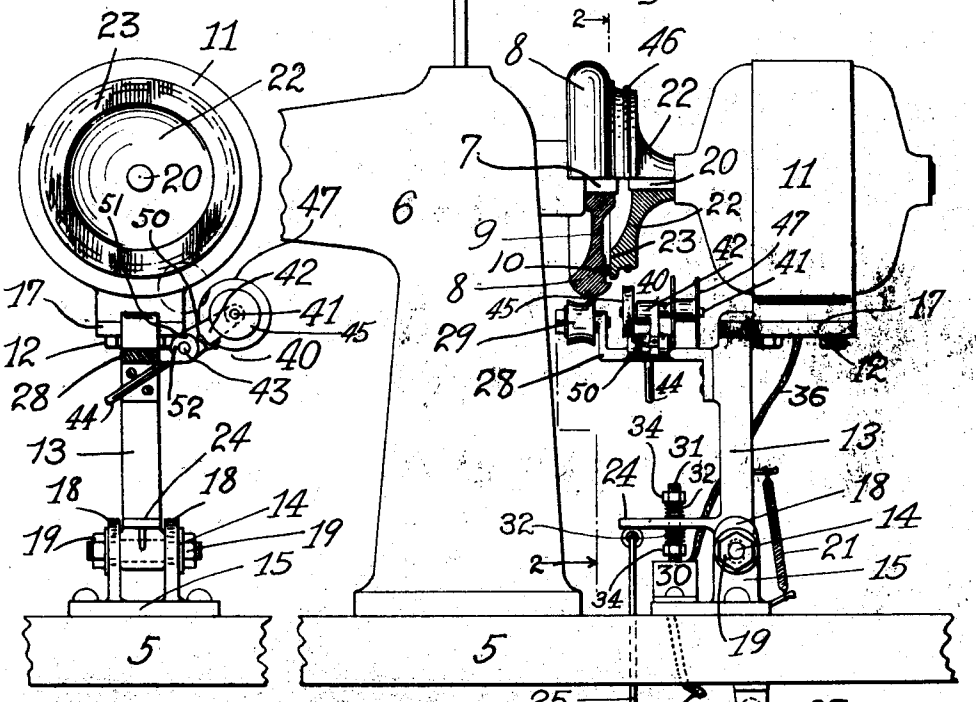


Fig. 2

Fig. 3

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UNITED STATES PATENT OFFICE.

FREDERICK M. LASERSON, OF BROOKLYN, NEW YORK.

SEWING-MACHINE MOTOR.

Application filed August 13, 1920. Serial No. 403,339.

To all whom it may concern:

Be it known that I, FREDERICK M. LASERSON, citizen of the United States, and resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Sewing-Machine Motors, of which the following is a specification.

This invention relates to sewing machine motors. The object of the invention is to provide a generally improved sewing machine motor attachment. The invention aims more particularly to provide a motor adapted for use with sewing machines in factories or places where a large number of sewing machines are operated, although the invention is not limited in its application to any particular type of sewing machine, nor is it of practical value only where a large number of machines are operated.

The advantages of the invention, its embodiment and the general and specific features thereof will be more fully understood from the following specification while reference is had to the accompanying drawing in which—

Fig. 1 is a fragmentary view of a sewing machine illustrating in elevation and partly in section my improved motor and the manner of connecting it to the machine.

Fig. 2 is a sectional detail view of the parts shown in Figure 1 taken on the line 2—2 of said figure.

Fig. 3 is a plan detail view of the bobbin winder and the motor stand, parts being omitted.

Referring to the drawing the reference numeral 5 denotes a bench or table of the kind usually found in factories and upon which there are usually mounted a number of sewing machines. These latter are as a rule driven by belts from a single driving shaft which in turn is driven by a motor of sufficient size and power to drive a relatively large number of machines.

It follows, that no matter how great a number of machines may be momentarily idle, the motor is kept running to drive the driving shaft for all the sewing machines. This feature involves a loss of power. Another disadvantage by such an arrangement is, that usually the main driving shaft is located underneath the bench or table and may cause injury to the operators. It is also difficult to clean such a driving shaft, repair it, oil it and the like.

The present invention provides a motor for each sewing machine so arranged that the motor is automatically disconnected from the supply of current when the sewing machine is not operating. In the drawing only one sewing machine and its motor has been shown but it will be understood that there will be furnished as many motors as there are sewing machines.

In the drawing the sewing machine is indicated in outline at 6, parts being broken away, the same being unnecessary for the understanding of this invention.

The numeral 7 indicates the sewing machine driving shaft to which is attached a driven flywheel 8 which is provided on its outer surface 9 with a friction member 10 which may have the form of a friction belt laid in a groove in the wheel as shown. The electric motor 11 is supported in any convenient manner as by bolts 12 upon a suitable supporting member 13 which latter is pivoted at 14 to a bracket 15 secured to the bench 5. The detailed arrangement, precise form and construction of the several parts are unimportant. The principle underlying my invention is that during the operation of the sewing machine, the motor is caused to drive the same by being brought into actuating contact therewith by means of an element under the control of the operator such as a foot operator treadle indicated by the treadle rod 16, and when the sewing machine is not running and the operator releases the treadle, the motor is caused to automatically disestablish its driving connection with the machine. This latter disestablishing movement may be caused by gravity for instance, the motor being mounted on the bracket 13 with relation to the pivot 14 in such a manner that the center of gravity of the motor and its associated parts lies outside the vertical line through the said pivot, whereby the motor will have a natural tendency to move away from the sewing machine as is obvious.

While I do not intend to limit the invention to its precise mechanical details, nevertheless, I have indicated in the drawing and described in the following description the preferred form of my invention.

The motor 11 is preferably secured to a suitable platform or bracket portion 17 of the member 13 which bracket overhangs to one side of the pivot 14. The latter is in the form of a stud or bolt which passes through slotted ears 18, 18 of the bracket 15 and is adjustably secured therein by nuts 19, 19. This is for the purpose of adjusting the height of the motor shaft 20 relative to the sewing machine shaft.

For the purpose of assisting gravity in tipping or moving the motor away from the sewing machine a spring 21 or similar means may be provided.

To the motor shaft 20 there is secured a driving disk or wheel 22 having a driving surface 23 adapted to engage the friction member 10 aforesaid to drive the machine.

The motor support 13 is provided with an arm 24 on the side opposite to the one on which the motor is mounted. A link 25 extends from said arm downwardly through the bench and to the treadle lever 26 pivoted at 27.

The treadle rod connects to the treadle lever as shown. The arrangement of the elements 25, 26, 27 and 15 is shown because it approximates the present treadle arrangement used on a great many machines.

The motor support 13 is further provided with a brake arm 28 which carries a brake wheel 29. The numeral 30 denotes a snap switch of any well known type. The handle 31 of said switch is extended upwards through the arm 24 and on opposite sides of said arm, the switch handle or stem 31 is provided with springs 32, 32 and adjusting nuts 34, 34. The current is supplied through a cable 35 to the switch 30 and from the latter to the motor by a cable 36.

During the operation of the sewing machine the parts are in the position shown in Figure 1 in which the treadle rod 16 is depressed, and the motor moved on its pivot 14 into driving engagement with the sewing machine, the driving disk 22 driving the flywheel 8 by frictional engagement with the friction member 10 as will be understood. At this time, the current is on of course, the switch being closed by the downward movement of the arm 24 in moving the motor to the left. When the operator takes the foot off the treadle (not shown), the spring 21 pulls the motor away from the sewing machine, or gravity alone will act to cause the motor to move away from the machine until the brake wheel 29 contacts with the flywheel 8 to stop the sewing machine and arrest the movement of the motor. At the same time, the current is automatically cut off in that the arm 24 has been lifted and pulled the switch stem upwards.

Thus it will be seen that it is entirely within the control of the operator to move the motor into driving engagement with the machine and that simultaneously with this movement the current is turned on automatically. Conversely, when the treadle is released, the motor is automatically disconnected from the machine and the current is automatically cut off. The springs 32 and nuts 34 on the switch stem permit of the desired adjustment in the operation of the switch.

In order to wind bobbins there is provided a bobbin winder 40 comprising a shaft 41 journaled in a bearing 42 pivoted at 43 on the brake arm 28. The bearing has a handle 44. The shaft 41 is provided with a driving pulley 45 adapted to be driven from a friction member 46 on the driving disk 22. 47 indicates a bobbin on the shaft 41. The normal position of the bobbin winder is as shown in the drawing. When the operator desires to wind bobbins, the handle 44 is pulled forward whereby the pulley 45 is brought into contact with the member 46, see dotted lines in Figure 2. The bobbins may be wound while the sewing machine is operated, or while the latter stands still, in which case, the treadle will be operated sufficiently to cause the motor to start but not strongly enough to bring the disk into driving engagement with the friction member 10.

When the bobbin is wound, the bobbin winder is moved into the position shown. A spring 50 on the bearing 42 may engage a notch 51 in the fixed pivot lug 52 to maintain the pulley 45 in engagement with the member 46. When the bobbin is disengaged from said member, the spring 50 easily snaps out of said notch.

It will be understood that the disclosure herein admits of changes and alterations in the detailed construction and arrangement shown without departing from the principle of the invention as defined in the scope of the appended claims and I do not wish to be understood as limiting myself to the exact disclosure set forth.

I claim:

The combination with a sewing machine having a driving shaft and a driving wheel on said shaft, of a friction driving member inserted in the face of said driving wheel, a bracket pivoted adjacent the said sewing machine, said bracket having a motor base extending in a direction away from the said sewing machine and a brake arm extending towards the said sewing machine, a brake member secured to said brake arm, a motor mounted on said motor base, the combined weight of the said motor and motor base tending to automatically move the said motor away from operative relation with the

said sewing machine and to move the said brake member into braking relation with the said sewing machine driving wheel, a spring for assisting the movement aforesaid, a driving wheel secured to the shaft of the said motor, and mechanism for operating the said bracket to cause the face of the said motor driving wheel to engage the said friction member in the face of the sewing machine driving wheel to drive the said sewing machine from the said motor with the motor shaft and the sewing machine driving shaft in axial alinement.

FREDERICK M. LASERSON.