J. R. COOK.

ADJUSTABLE MOUNTING FOR ELECTRIC MOTORS.

APPLICATION FILED DEC. 15, 1916.

1,370,006. **Patented Mar. 1, 1921.**

2 SHEETS—SHEET 1.

Fig. 1.

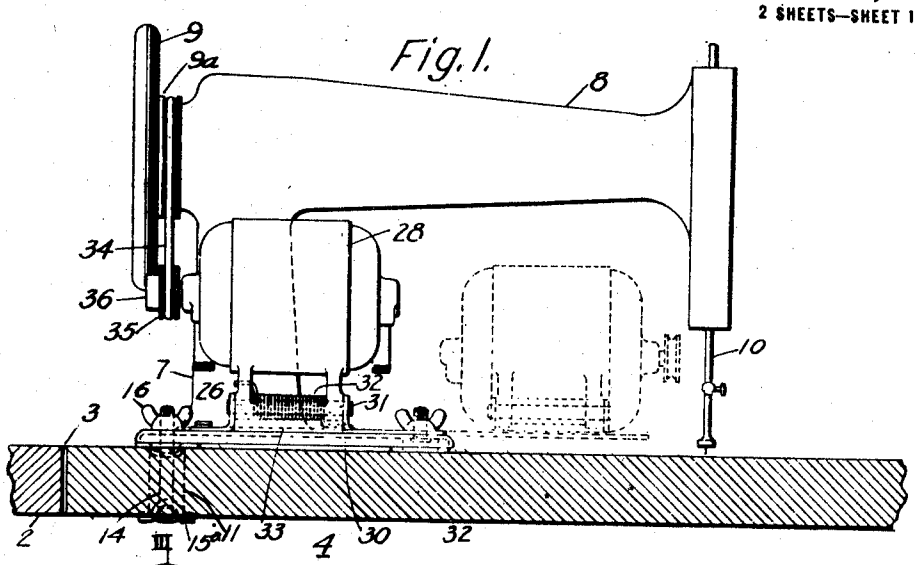


Fig. 2.

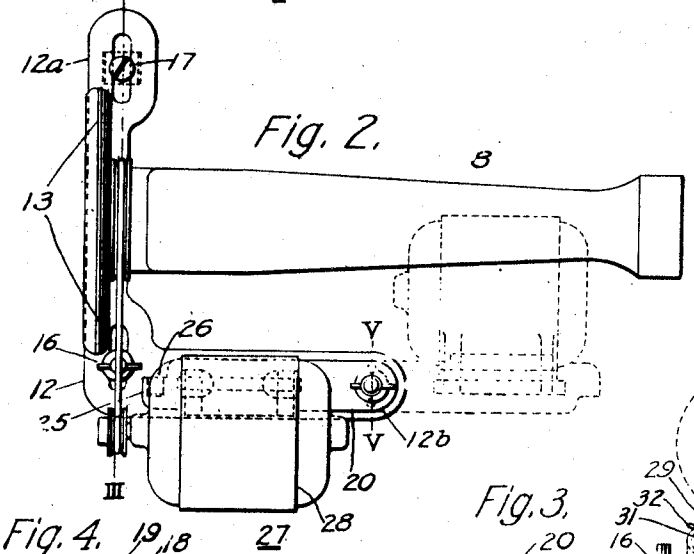


Fig. 3.

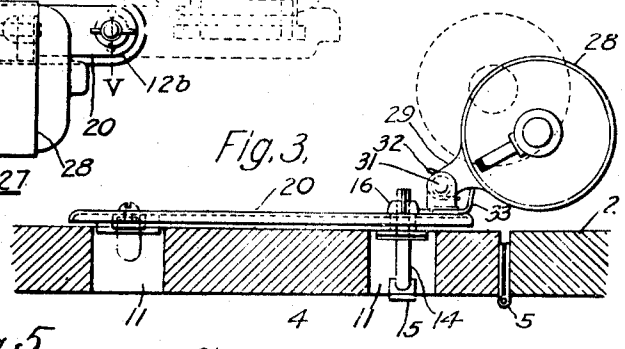


Fig. 4.

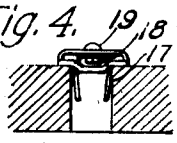
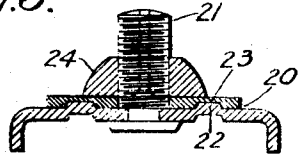


Fig. 5.



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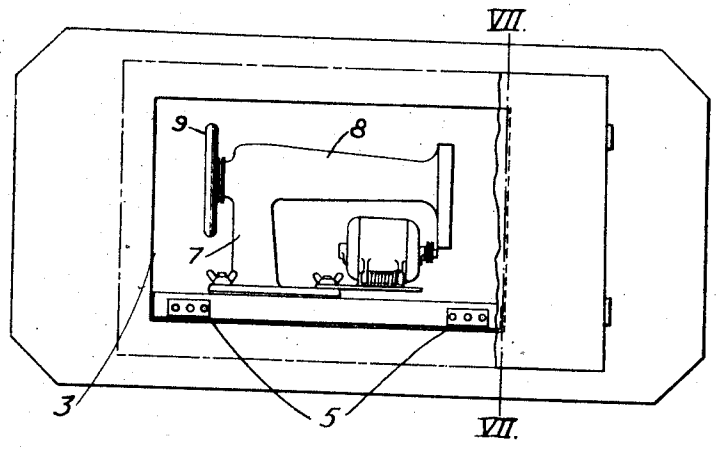


Fig. 6.

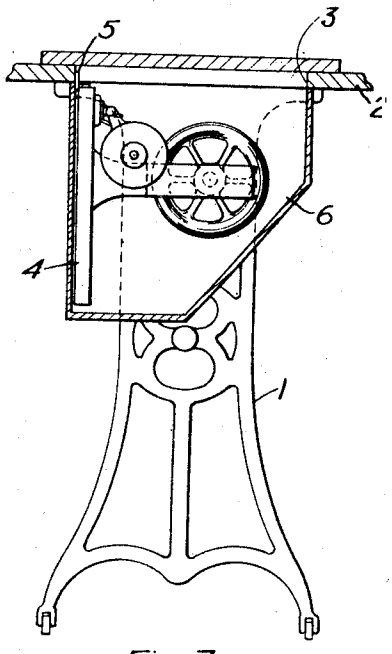


Fig. 7.

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ADJUSTABLE MOUNTING FOR ELECTRIC MOTORS.

1,370,006. Specification of Letters Patent. Patented Mar. 1, 1921.

Application filed December 15, 1916. Serial No. 137,222.

To all whom it may concern:

Be it known that I, JOEL R. COOK, a citizen of the United States, and a resident of Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Adjustable Mounting for Electric Motors, of which the following is a specification.

My invention relates to mountings for electric motors, and it has for its object to provide adjustable mountings for motors that are adapted to drive sewing machines or similar mechanisms.

Sewing machines of the most modern construction usually embody movable bases, for supporting the sewing machines proper, that are capable of being lowered with respect to the work tables when the machines are not in operation, so that no parts of the mechanims project above the surfaces of the work tables when the machine bases are in their lower positions.

Electric motors have heretofore been employed to drive sewing machine mechanisms but it has usually been customary to remove the motors from the machine bases when the latter are lowered or to allow the motors to project above the surfaces of the work tables at all times, thereby causing considerable inconvenience to the operators of the sewing machines.

According to my invention, I provide an adjustable mounting for the driving motor so that, when the motor is not operatively connected to the driving pulley of the sewing machine, it may be readily placed in such position that, when the machine base is lowered with respect to the work table, the motor will also be lowered and no portions thereof will project above the surface of the work table.

In the accompanying drawing, Figure 1 is a view, in side elevation, of a sewing machine mechanism having a driving motor operatively connected thereto; Fig. 2 is a plan view of the parts shown in Fig. 1; Fig. 3 is a sectional view along the line III—III of Fig. 2, with the sewing machine mechanism omitted; Figs. 4 and 5 are detail views respectively showing portions of the motor mounting; Fig. 6 is a plan view of the complete sewing-machine table showing the sewing-machine mechanism and the driving motor in lowered positions; and Fig. 7 is a sectional view along the line VII—VII of Fig. 6.

Referring to Figs. 1 and 7, the sewing machine comprises a supporting stand 1 upon the top of which is mounted a work table 2 that is provided with a substantially rectangular opening 3 within which is located a machine base 4. The machine base 4 is pivotally secured to the table 2 by suitable hinges 5 whereby the base may be lowered into a storage compartment 6 that is located below the work table 2. The sewing machine proper is mounted on the base 4 and comprises a pillar 7 and a horizontal arm 8 which supports the driving wheel 9 and contains the usual mechanism for transmitting motion from the driving wheel to the needle bar 10. The base 4 is provided with belt slots 11 arranged symmetrically with respect to the driving wheel in order to permit the passage of the driving belt that is usually connected to the foot-operated driving mechanism (not shown).

As best shown in Fig. 2, the motor mounting comprises an L-shaped plate member 12, the legs 12^a and 12^b of which extend respectively at right angles and parallel to the horizontal arm 8 of the sewing machine. The leg 12^a is provided with slots 13 that are adapted to substantially register with the belt slots 11. The plate member 12 is secured to the base 4 by means of a T-headed bolt 14 that extends through the registering pair of slots 11 and 13 adjacent to the corner of the member 12, a recessed cross bar 15, the oppositely extending arms 15^a of which engage the under side of the base 4 and a nut 16 coacting with the threaded end portion of the bolt 14 and the face of the member 12. The other pair of slots 11 and 13 are held in alinement with each other by means of a resilient U-shaped clip 17 that is adjustably secured to the leg 12^a by means of a nut 18 and a screw 19, the head of which bridges the slot 13, as best shown in Fig. 4. An arm 20 is pivotally secured to the end of the leg 12^b by means of an upwardly extending stud 21. The leg 12^b and the arm 20 are provided with corresponding projecting and recessed portions 22 and 23, respectively, that are circumferentially arranged at substantially 90° from each other about the stud 21, whereby the arm 20 may be secured in locking engagement with the mem-

ber 12^b, in any one of four positions, by means of a wing nut 24 coacting with the threaded portion of the stud 21. The arm 20 is provided with a reduced portion 25 that is adapted to fit beneath a punched-out tongue portion 26 of the leg 12^b so that the arm 20 may be firmly positioned in exact parallel relation to the horizontal arm 8 of the sewing machine.

As best shown in Fig. 2, an electric motor 27 comprises a cylindrical casing 28 that is provided with spaced radially-extending lugs 29, and the arm 20 is further provided with upwardly-extending wing portions 30 between which the supporting lugs 29 of the motor are adapted to fit. The motor 27 is secured in pivotal relation to the arm 20 by means of a pin 31 extending through alined openings that are provided in the lugs 29 and the wing portions 30, respectively. The motor is biased in one direction about the pivot pin 31 by means of a coil spring 32, the respective ends of which are in engagement with the arm 20 and one of the lugs 29. The degree of pivotal movement of the motor, under the action of the spring 32, is limited by a stop 33 that is provided on the support 20, as best shown in Fig. 3.

When it is desired to drive the sewing machine mechanism by the motor 28, the arm 20 is secured in the position shown in full lines in Figs. 1 and 2, a belt 34 being then placed over a pulley 9^a carried by the driving wheel 9 and a pulley 35 being mounted upon one end of the motor shaft 36. The length of the belt 34 is so adjusted that, when it engages the pulleys 9^a and 35, respectively, the motor frame 28 is drawn upwardly about its pivotal support against the action of the spring 32, the driving position of the motor 27 being substantially as shown in dotted lines in Fig. 3. In this position, the spring serves to continuously bias the motor pulley 35 away from the driven pulley 9^a, thus maintaining the belt 34 in a continuous state of tension.

When it is desired to render the motor inoperative and to lower the sewing machine proper into the storage chamber 6, the belt 34 is disconnected, the wing nut 24 is loosened and the arm 20 is swung through substantially 180° about the stud 21 to the position shown in dotted lines in Figs. 1 and 2. When the arm 20 is locked in this position by the wing nut 24 coacting with the projecting and recessed portions 22 and 23, respectively, the motor 28 is maintained beneath the horizontal arm 8. The base 4 is then lowered, as shown in Figs. 6 and 7, in which position the sewing machine mechanism and the motor are both entirely located within the storage chamber 6, and the opening 3 in the work table may then be closed by a hinged table top 37.

From the foregoing, it is apparent that my motor support may be readily applied to any type of sewing machine by reason of its relation to the belt holes that are always provided and, furthermore, that it may be most advantageously used in connection with sewing machine tables of the collapsible type by reason of the fact that both the motor and its support are capable of being lowered with the sewing machine mechanism.

While I have shown my invention in a simple and preferred form, it will be obvious to those skilled in the art that it is not so limited but is susceptible of various minor changes and modifications within the scope of the appended claims.

I claim as my invention:

1. The combination with a supporting base and a machine to be driven mounted thereon and provided with a pulley, of a dynamo-electric machine pivotally mounted on said base about a vertical axis and provided with a pulley belted to said first-named pulley, and means for biasing said dynamo-electric machine away from said first-named pulley.

2. The combination with a supporting base and a machine to be driven mounted thereon and provided with a pulley, of a motor pivotally mounted on said base about a vertical axis and provided with a pulley belted to said first named pulley, and a spring for biasing said motor away from said first named pulley to maintain the tension of said belt.

3. The combination with a supporting base and a machine to be driven mounted thereon and provided with a pulley, of a motor pivotally mounted on said base about a vertical axis and provided with a pulley belted to said first-named pulley, and a spring having its ends in engagement with said base and said motor, respectively, for biasing said motor away from said first named pulley.

4. The combination with a platform provided with an opening within which is located a supporting base capable of being lowered with respect to said platform, of a machine to be driven mounted on said base, and a motor for driving said machine, the said motor being adjustable with respect to said base so that it is adapted to occupy one position when operatively connected to said machine and another position when disconnected therefrom and said base is lowered.

5. The combination with a platform provided with an opening within which is located a supporting base capable of being lowered with respect to said platform, of a machine to be driven mounted on said base, and a motor for driving said machine, the said motor being adapted to occupy one position with respect to said base when operatively connected to said machine and to occupy another position when disconnected therefrom and said base is lowered.

6. The combination with a platform pro-

vided with an opening within which is located a supporting base capable of being lowered with respect to said platform, of a machine to be driven mounted on said base, a motor for driving said machine, and means for biasing said motor away from said machine when operatively connected thereto and for biasing said motor toward said machine when disconnected therefrom and said base is lowered.

7. The combination with a platform provided with an opening within which is located a supporting base capable of being lowered with respect to said platform, of a machine to be driven mounted on said base and provided with a pulley, a motor pivotally mounted on said base, and provided with a pulley, a belt for connecting said pulleys, and means for biasing said motor away from said machine when said pulleys are connected by said belt and for biasing said motor toward said machine when said belt is removed and said base is lowered with respect to said platform.

8. The combination with a platform provided with an opening within which is located a supporting base capable of being lowered with respect to said platform, of a machine to be driven mounted on said base and provided with a longitudinally extending rotatable shaft, a motor pivotally mounted in said base and means for biasing said motor away from said shaft when operatively connected thereto and for biasing said motor toward said shaft when disconnected therefrom and said base is lowered.

9. The combination with a supporting stand and a machine to be driven mounted thereon, of a driving motor for said machine pivotally mounted on said stand about axes parallel to the respective longitudinal and vertical axes of said motor.

10. The combination with a supporting stand and a machine to be driven mounted thereon, of a driving motor for said machine pivotally mounted about a longitudinal axis and a vertical axis with respect to said stand.

11. A mounting for a motor comprising a plate member and an arm pivotally mounted thereon, the said motor being pivotally mounted on said arm.

12. A mounting for a motor comprising a plate member and an arm pivotally mounted thereon, the said motor being pivotally mounted on said arm about an axis at right angles to the pivotal axis of said arm.

13. A mounting for a motor comprising a plate member and an arm pivotally mounted thereon about a vertical axis, the said motor being mounted on said arm about a horizontal axis.

14. A mounting for a motor comprising a plate member and an arm pivotally mounted thereon, the said motor being pivotally mounted on said arm, and means for biasing said motor away from said plate member.

15. A mounting for a motor comprising a plate member and an arm pivotally mounted thereon, the said motor being pivotally mounted on said arm, and a spring having its ends in engagement with said motor and said arm, respectively, for biasing said motor away from said plate member.

In testimony whereof I have hereunto subscribed my name this 24th day of Nov., 1916.

JOEL R. COOK.