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SEWING MACHINE OR LIKE MOTOR.

APPLICATION FILED MAY 31, 1919.

1,371,267.

Patented Mar. 15, 1921.

Fig. 1.

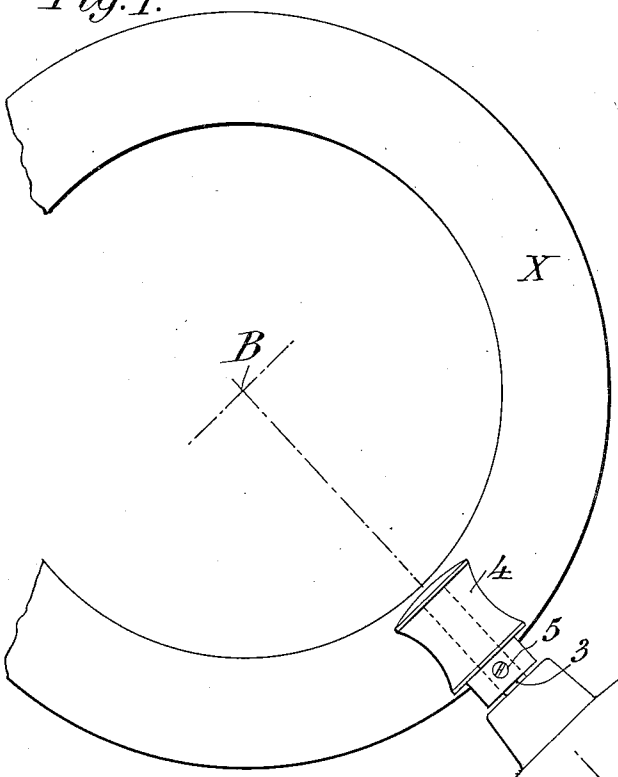
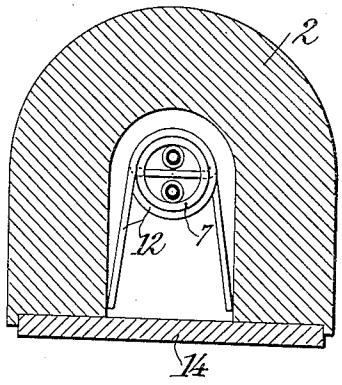
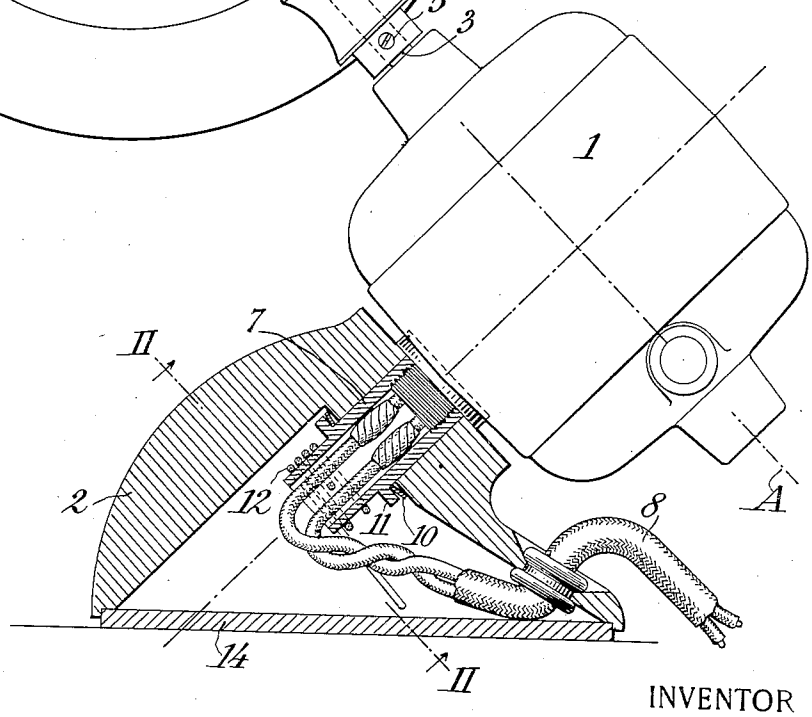


Fig. 2.





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SEWING-MACHINE OR LIKE MOTOR.

1,371,267. Specification of Letters Patent. Patented Mar. 15, 1921.

Application filed May 31, 1919. Serial No. 300,853.

To all whom it may concern:

Be it known that I, WILLIAM GENTRY SHELTON, a citizen of the United States of America, residing in the borough of Manhattan, city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Sewing-Machines or like Motors, of which the following is a specification.

This invention relates to electric motors especially applicable for driving sewing machines or the like, and aims to provide improvements therein.

The present invention provides a motor which may be readily applied to sewing machines, preferably in a manner to drive the sewing machine through the usual hand wheel of the sewing machine.

The invention further provides a motor of the character described capable of being readily positioned so as to drive the sewing machine without involving undue friction between the driving part of the motor and the driven part of the sewing machine.

The invention further provides a motor of the character described which may be of ample dimensions as regards the power and cooling of the motor.

The invention further provides a motor of simple and durable construction, which may be produced and sold at a relatively low price.

Other features of improvement will be hereinafter set forth.

An embodiment of the invention is illustrated in the accompanying drawing.

In said drawing Figure 1 shows said embodiment partly in elevation and partly in section, the device being shown in its operative position with respect to the hand wheel of a sewing machine.

Fig. 2 is a sectional view on the line II—II, Fig. 1.

Referring to the said drawing, numeral 1 designates an electric motor, and 2 a base upon which said motor is mounted. Said motor has a driving shaft 3, which is preferably the rotor shaft of the motor, and 4 is a driving pulley or wheel of essentially cylindrical type which is preferably axially adjustable on the shaft 3, as indicated by the set screw 5. The axis of the driving shaft 3 is inclined, the angularity being preferably in the neighborhood of 45° from the horizontal, whereby the device may be positioned so that the axis of the driving shaft 3 will coincide with a radius from the axis B of the hand wheel or driven part X of the sewing machine, said radius being thus intermediate between vertical and horizontal radii drawn from said axis of the driven part. Such an arrangement or disposition of the driving shaft of the motor permits of the motor being placed to one side of the perpendicular plane which cuts the axis of the driven part, so that its shaft 3 is substantially parallel to said hand-wheel X, this position providing a greater space than a position immediately under the hand wheel or driven part of the sewing machine, and hence permitting of the motor being made of the most advantageous size as regards the power required of it, and as regards the cooling, or dissipation of the heat developed by the motor into the surrounding air.

The motor is preferably so connected to its base as to be readily arranged to bring the driving pulley against either side of the hand-wheel of the sewing machine, for driving said hand-wheel in either direction, according to the designed direction of turning of the hand-wheel. To this end the motor is preferably pivotally connected to its base, by means of a tubular pin 7. The tubular pin 7 conveniently serves for the passage of the leading-in wires 8 to the motor. A spring washer or the like 10, is preferably provided between a part of the base and a part of the pin extension as for example a shoulder or annular flange 11, in order to maintain a tight connection between the motor and base.

A resilient connection 12 is preferably provided between the pin 7 and the base 2. The resilient means 12 is preferably a coil spring having one end connected to the pin 7 and the other end attached to the base. When the spring is lightly tensioned, as by turning the motor slightly upon its pivotal axis, its reaction presses the pulley 4 against the driven part of the machine. In practice there are preferably two springs 12 used, acting in opposite directions, the springs being preferably in equilibrium when the pulley 4 is midway of its arc of movement around the pivotal axis of the motor.

The base 2 is preferably made of considerable weight, and also preferably provided at its base with a friction pad 14. The motor and base are preferably portable.

Operation: In order to drive a sewing machine, or the like, the motor and its base

are placed upon the table or top of the sewing machine, near the hand wheel, and its position adjusted until the axis A of the driving part is substantially in an oblique plane A—B coinciding with the axis B of the driven part. The axis A of the driving part is preferably inclined, being preferably about midway between a horizontal and vertical position, hence having an angular inclination of about 45° from the horizontal. The driving pulley 4 may be adjusted axially upon the shaft 3 in order to bear to the best advantage against the driven part. Inasmuch as the hand wheels of different makes of sewing machines are of very nearly a standard size and height above the table of the sewing machine, a slight adjustment of the pulley 4 on its shaft is sufficient to adapt the present device for the general run of sewing machines.

In bringing the driving pulley 4 against the hand-wheel of the sewing machine, the motor is turned slightly on its axis against the pressure of the spring or springs 12, the reaction of the spring thereby forcing the pulley against the said hand-wheel, thus providing a good driving connection between the driving pulley and the hand-wheel.

By placing the motor so that the driving pulley bears on one side or the other of the driven part (hand-wheel) the driven part may be turned in one direction or the other in accordance with the designed direction of running of said driven part.

The starting and stopping and the speed of the motor are controlled in the usual manner through a so-called starting box, preferably manipulated by a treadle.

The inventive ideas may be embodied otherwise than as specifically illustrated and described herein.

What is claimed is:

1. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like by engaging a lateral face of the latter, the axis of said shaft being inclined and adapted to lie in a plane substantially parallel to said hand-wheel.

2. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like by engaging a lateral face of the latter, the axis of said shaft being inclined and adapted to lie in a plane substantially parallel to said hand-wheel, and means for pressing said pulley against either side of the hand-wheel.

3. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like, the axis of said shaft being inclined and adapted to lie in a plane substantially parallel to said hand-wheel with the pulley end directed upwardly.

4. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like, the axis of said shaft being inclined and adapted to lie in a plane substantially parallel to said hand-wheel with the pulley end directed upwardly, said motor being pivotally mounted on an inclined axis.

5. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like, the axis of said shaft being radially disposed to the axis of said hand-wheel, said motor being pivotally mounted on an inclined axis, said shaft axis and said motor axis being substantially perpendicular to one another.

6. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like, the axis of said shaft being radially disposed to the axis of said hand-wheel, said motor being pivotally mounted on an inclined axis, and resilient means adapted to turn said motor on its axis and thereby press said pulley against said hand-wheel.

7. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like, the axis of said shaft being radially disposed to the axis of said hand-wheel, said motor being pivotally mounted on an inclined axis, said pulley being adjustable in a radial direction on said shaft.

8. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like, the axis of said shaft being radially disposed to the axis of said hand-wheel, said motor being pivotally mounted on an inclined axis, said pulley being adjustable in a radial direction on said shaft, and resilient means adapted to turn said motor on its axis and thereby press said pulley against said hand-wheel.

9. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like, the axis of said shaft being radially disposed to the axis of said hand-wheel, said motor being pivotally mounted on an inclined axis, and resilient means acting on said motor in opposite directions around its axis and being in equilibrium when the motor is free to turn around its axis, said means

acting to press said motor to said point of equilibrium when turned in either direction around its axis from said point of equilibrium, whereby said motor may be disposed so that the driving pulley may press on either side of said wheel.

10. A sewing machine or like motor, comprising a shaft having a driving pulley thereon of essentially cylindrical type, adapted to drive a hand-wheel or the like, the axis of said shaft being radially disposed to the axis of said hand-wheel, said motor being pivotally mounted on an inclined axis, and resilient means adapted to turn said motor on its axis and thereby press said pulley against said hand-wheel, said motor having a base presenting a high coefficient of friction to the part on which the motor is set.

In witness whereof, I have hereunto signed my name.

WILLIAM GENTRY SHELTON.