F. DIEHL & H. L. ZABRISKIE.

PORTABLE MOTOR SUPPORT.

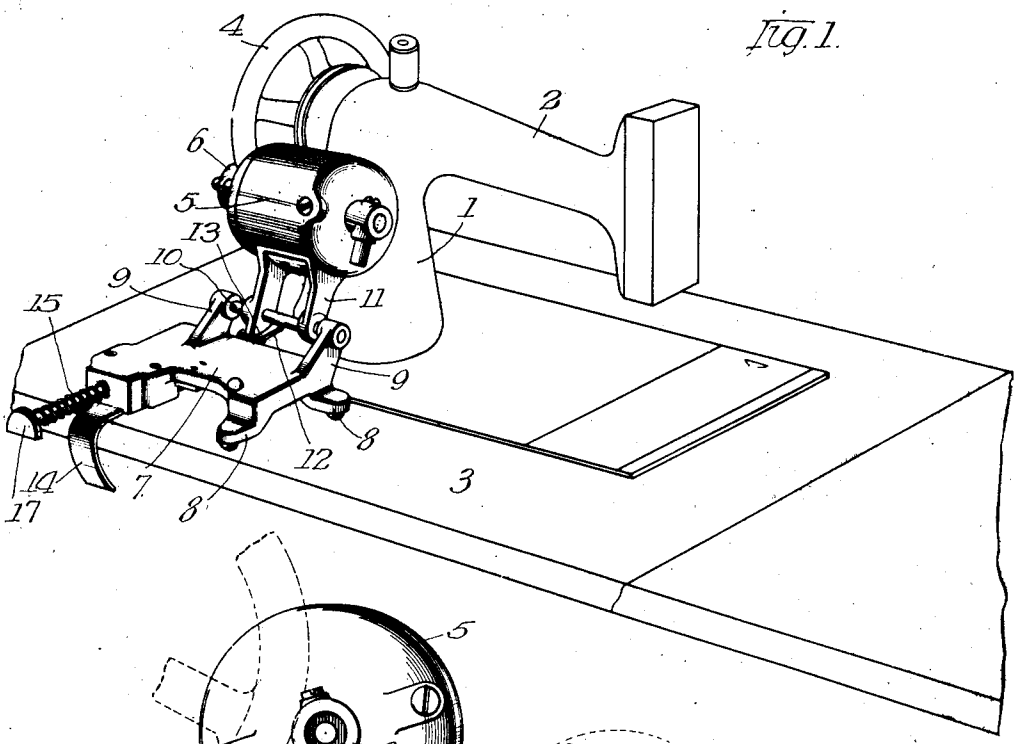
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1,207,719.

Patented Dec. 12, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



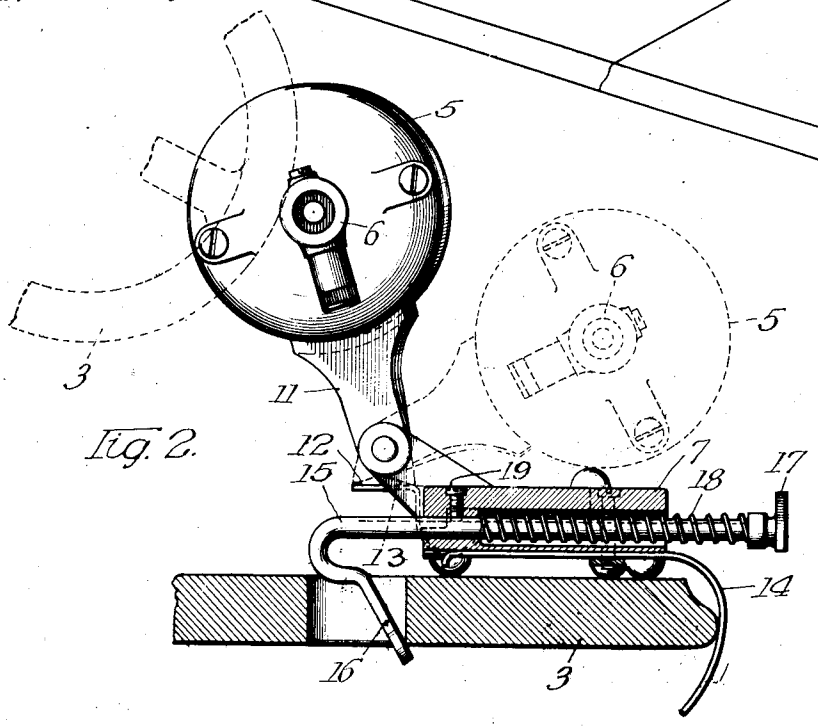


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

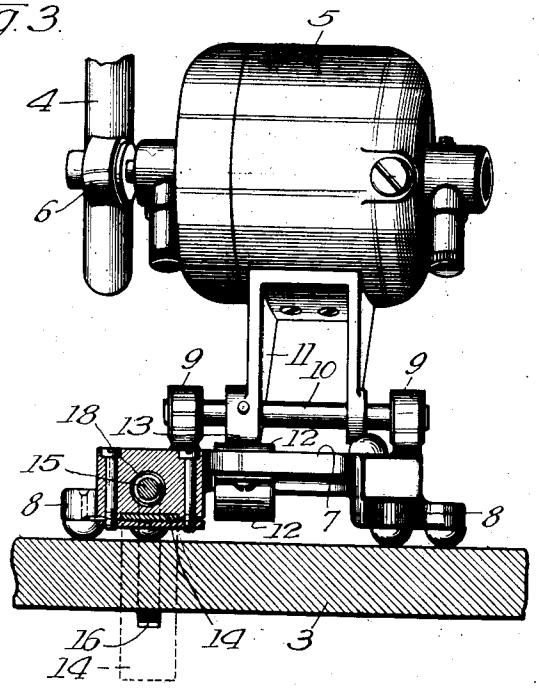
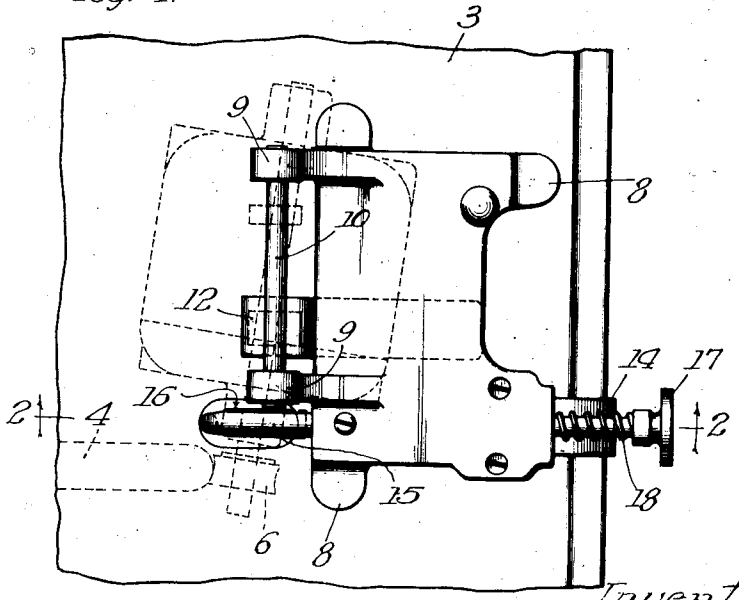


Fig. 4.



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UNITED STATES PATENT OFFICE.

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PORTABLE MOTOR-SUPPORT.

1,207,719. Specification of Letters Patent. Patented Dec. 12, 1916.

Application filed May 10, 1916. Serial No. 96,531.

To all whom it may concern:

Be it known that we, FREDERICK DIEHL and HENRY L. ZABRISKIE, citizens of the United States, residing, respectively, at Elizabeth and at Westfield, both in the county of Union, State of New Jersey, have invented new and useful Improvements in Portable Motor-Supports, of which the following is a specification.

This invention relates to portable motor supports.

It relates particularly to supports for motors used for driving sewing machines.

Electric motors are frequently used for operating sewing machines for which purpose a support must be provided for the motor to maintain it in driving relation to the machine. This support should be portable and readily applicable to various types of sewing machines without requiring alteration in the machine or the support. It should enable the motor to be readily moved to and away from driving position without requiring that the support be removed from the machine. It should be simple, inexpensive and capable of holding the motor firmly in driving position.

One of the objects of the present invention is to provide an improved portable motor support.

Another object is to provide an improved support for sewing machine motors which may be readily clamped between the edge of a sewing machine table and an opening therein, preferably the belt hole, and which will enable the motor to be readily moved to and away from driving position.

Other objects and advantages of the invention will hereinafter appear.

The accompanying drawings illustrate an embodiment of the invention.

The views of the drawings are as follows: Figure 1 is a perspective view of the portable motor support applied to a sewing machine. Fig. 2 is a cross section view through a portion of the motor support showing the manner in which it is clamped to the sewing machine table. Fig. 3 is a partial cross section and a rear end elevation of the support. Fig. 4 is a top plan view.

The sewing machine with which the support is illustrated has a frame comprising a standard 1 and arm 2, said frame being mounted upon a table 3. The frame carries a fly wheel 4 operatively connected to the mechanism of the machine.

The motor for driving the machine comprises a small electric motor 5 of any suitable type having a friction drive wheel 6 connected to the armature shaft and adapted to frictionally engage the fly wheel of a sewing machine. It is to be understood that the type of motor employed may be varied to suit the requirements.

The support for the motor comprises, in general, a base 7 upon which the motor 5 is pivotally mounted, said base being adapted to rest on the table 3 and being fastened to said table by means which grips the edge of the table and the edge of the belt hole therein. The base 7 which rests on the table is provided with feet 8 having rubber pads thereon to prevent damage to the table top when the support is placed in position.

The pivotal mounting for the motor is constructed as follows: Extending upwardly from the forward end of the base 7 is a pair of spaced arms 9 forming bearings for a shaft 10 which has fixed thereto a U-shaped motor-carrying member 11, the base of which member is attached to the casing of motor 5 and the arms of which are rigidly fixed to shaft 10. This simple structure permits the motor to be readily moved on the base to and away from driving position.

When the motor is in retracted position it rests on the top of the base as shown in dotted lines in Fig. 2. When it is in driving position it is substantially directly above the axis of the pivotal support.

The shaft 10 is located on the base so that when the support is placed in position on a sewing machine, the shaft is substantially parallel with the axis of the sewing machine balance wheel. The U-shaped member 11 accordingly swings in a plane approximately parallel to the plane of the balance wheel but said member is shaped so that when the motor is swung to driving position its axis is at an angle to the axis of the balance wheel. The relative positions of the motor and balance wheel are shown in dotted lines in Fig. 4.

When the motor is moved to driving position it is automatically biased to such a position that its drive wheel 6 is maintained in frictional engagement with the rim of balance wheel 4 by means of a flat spring 12

which engages a cam surface 13 on one of the arms of the U-shaped member 11. The spring 12 is attached to the front end of base 7 in any suitable manner and extends forwardly therefrom. The cam surface 13 is shaped so that the pressure of the spring 12 thereon biases the motor to driving position. The high point on the cam surface passes across an imaginary vertical plane through the axis of shaft 10 as the motor is moved from one of its positions to the other. As soon as the high point on the cam surface passes this plane in either direction the pressure of the spring 12 tends to bias the motor about its pivot in the direction in which it is moving.

The base is arranged to be fastened to the sewing machine table as follows: A hook member 14 is attached to the under side of the base 7, the hooked end of the member extending from the rear of the base and being shaped to hook over the edge of a sewing machine table. The member is adjustably fastened to the base so that the distance that the hooked end extends from the base may be varied to enable the support to be readily applied to tables of different widths. The position of this member determines the position of the motor support on the sewing machine table and the location of the motor with relation to the balance wheel of the machine. By adjusting the member 14 the support may be properly positioned for various widths of tables. The portion of the member which extends over the edge of the table has considerable width in order to obtain a broad grip on the edge of the table to steady the base. A second hook member 15 is carried by the base, said member having a hooked end 16 extending to the front of the base and shaped so that it may be inserted in an opening in the table, the opening usually employed being the belt hole. The member is of relatively small diameter so that it may be easily hooked into a small belt hole.

The body of the member 15 is slidably mounted in an opening in the base 7, the member extending beyond the rear of the base and having a knob 17 attached thereto. The walls of the opening in the base prevent lateral movement of the member and rotary movement thereof is prevented by means of a screw 19 which extends into a recess in the top of the member.

The slidable hook member 15 is surrounded by a spiral spring 18, one end of which bears against a shoulder on the base and the other end of which engages the knob 17. This spring normally biases the member 15 to such a position that its hooked end 16 is adjacent the base 7. If the hooked end is moved away from the base the spring 18 exerts a force thereon tending to move it toward the base. Accordingly when the hooked end 16 is inserted in an opening in a sewing machine table the spring causes it to grip the table, the hooked end being inclined so that the force exerted thereon also tends to cause the base 7 to more firmly seat itself on the table top.

The support is applied to a sewing machine by simply pressing the knob 17 inwardly to force the hooked end 16 of member 15 outwardly a sufficient distance to enable it to be inserted in the belt hole in the table top. The support is then allowed to rest on the table, the spring 18 automatically causing the hooked members to grip the table and hold the base in position. The distance of the support from the sewing machine balance wheel may be varied by adjusting the position of member 14 on the base, this distance being generally determined for one type of machine and then, if the support is to be applied to machines having different widths of tables it is adjusted to suit the requirements. After the support is placed on the table the motor may be swung to or away from driving position, the spring 12 automatically biasing the motor so that its drive wheel is in frictional engagement with the balance wheel.

It is to be understood that the structure shown is for purposes of illustration only and that other structures may be devised which embody the invention and come within the spirit and scope of the appended claims.

What is claimed is:—

1. The combination with a sewing machine of an electric motor and means for movably supporting the motor in driving relation to the machine, said means being adapted to be clamped to the sewing machine table between the edge thereof and an opening therein.

2. The combination with a sewing machine of an electric motor and means for pivotally supporting the motor so that it can be moved into and out of driving connection with the machine, said means being adapted to be clamped to the sewing machine table between the edge thereof and an opening therein.

3. The combination with a sewing machine of an electric motor having a friction drive wheel, means for pivotally supporting the motor so that its drive wheel may be moved into and out of frictional engagement with the fly wheel of the machine, said means being adapted to be clamped to the sewing machine table between the edge thereof and the edge of the belt hole therein.

4. A portable driving means for sewing machines comprising an electric motor, a base upon which said motor is mounted, said base having means thereon for clamping it to a sewing machine table between an edge of said table and one of the belt holes

therein, said motor being mounted on said base so that it can be moved into and out of driving connection with the machine.

5. A portable driving means for sewing machines comprising an electric motor having a friction drive wheel, a base carrying said motor, means on said base for clamping it to a sewing machine table between an edge of the table and one of the belt holes therein, said motor being pivotally mounted on said base so that its drive wheel may be moved into and out of engagement with the balance wheel of the machine.

6. A portable driving means for sewing machines comprising an electric motor, a base carrying said motor, means on said base adapted to clamp a sewing machine table between an edge of said table and one of the belt holes therein, said motor being mounted on said base so that it is movable into and out of driving connection with the machine and means for automatically biasing the motor to driving position.

7. A portable driving means for sewing machines comprising an electric motor having a friction drive wheel, a base carrying said motor, means on said base adapted to clamp a sewing machine table between an edge of said table and one of the belt holes therein, said motor being automatically biased to a position where its drive wheel is maintained in engagement with the balance wheel of the machine but being movable to a disengaged position.

8. A portable driving means for sewing machines comprising an electric motor having a friction drive wheel, a motor supporting base adapted to rest on a sewing machine table and be fastened thereto, and means for pivotally mounting the motor on the base so that the motor may be swung about an axis substantially parallel to the axis of the balance wheel of the machine to move the motor to and away from driving position, the axis of the motor when in driving position being above the axis about which the motor swings and at an angle to the axis of the balance wheel and the motor drive wheel being in frictional engagement with the balance wheel.

9. A portable support for motors comprising a base on which a motor may be mounted, a member projecting from said base adapted to be hooked over the edge of a table, and a second member movably mounted on said base and adapted to be hooked in an opening in said table, said second member being normally biased toward the first so that when the members are placed in position on said table the motor supporting base is automatically clamped to the table.

10. A portable support for sewing machine motors comprising a base for supporting an electric motor, a member projecting from said base adapted to hook over the edge of a sewing machine table, and a second member projecting from said base adapted to hook in one of the belt holes in said table.

11. A portable support for sewing machine motors comprising a base for supporting an electric motor, a member projecting from said base adapted to hook over the edge of a sewing machine table, and a movable member carried by said base adapted to hook in a belt hole in said table, said movable member being normally biased toward the first member to thereby clamp the base to the table.

12. A portable support for sewing machine motors comprising a base adapted to rest on a table, a motor-carrying member pivotally mounted on said base, said member having a cam connected thereto, means on the base coöperating with the cam to bias the member to certain positions, and means on the base for clamping it to the sewing machine table.

13. A portable support for sewing machine motors comprising a base adapted to rest on a sewing machine table, a motor-carrying member pivotally mounted on said base, said member having a cam surface thereon coöperating with a spring on the base whereby the member is biased to certain positions, and means on the base for clamping it to the sewing machine table.

14. A portable support for sewing machine motors comprising a base adapted to rest on a sewing machine table, a motor-carrying member movably mounted on the base, a relatively wide hook member adjustably attached to the bottom of said base and projecting from the rear thereof to hook over the edge of a sewing machine table, a second hook member of relatively small diameter having a hooked end projecting from the front of the base for insertion in an opening in the table, the body portion of said second hook member being slidably mounted in an opening in the base and projecting from the rear thereof, and means for yieldingly maintining the second hook member with its hooked end adjacent the base.

In witness whereof, we have hereunto subscribed our names in the presence of two witnesses.

FREDERICK DIEHL.
HENRY L. ZABRISKIE.

Witnesses:
GUSTAVE C. MARX,
JOHN H. BARKER.