(No Model.)

T. A. EDISON.

COMMUTATOR BRUSH FOR ELECTRIC MOTORS AND DYNAMOS.

No. 468,950. Patented Feb. 16, 1892.

Fig. 1.

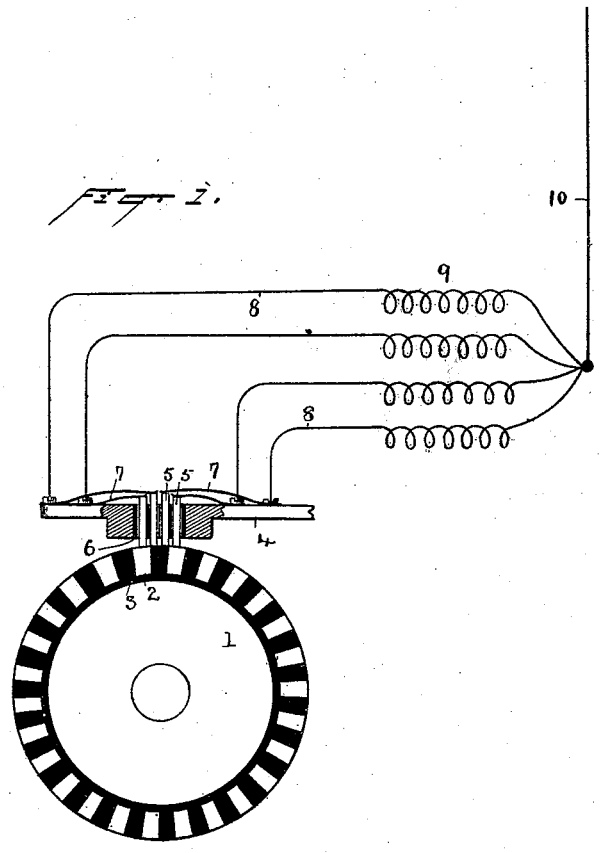
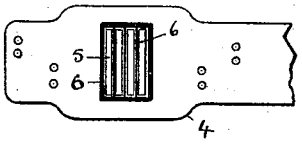


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, NEW JERSEY.

COMMUTATOR-BRUSH FOR ELECTRIC MOTORS AND DYNAMOS.

SPECIFICATION forming part of Letters Patent No. 468,950, dated February 16, 1892.

Application filed April 4, 1891. Serial No. 387,693. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, a citizen of the United States, residing at Llewellyn Park, in the county of Essex and State of New Jersey, (Case No. 916,) have invented a certain new and useful Improvement in Motors and Dynamos, of which the following is a specification.

In my patent, No. 276,233, dated April 24, 1883, are set forth the advantages of the use of current-collectors forming bridges of high resistance between the bars of the commutator-cylinder of a dynamo-electric machine or electro-dynamic motor, whereby the spark at the commutator-bars, due to the breaking of local circuits, is prevented, and in said patent is described the use for this purpose of current-collectors of inferior conducting capacity, making inferior contact at the surface of the commutator-cylinder.

In my patent, No. 298,954, dated May 20, 1884, is set forth a modified arrangement in which the high-resistance bridge between the commutator-segments is formed by resistance-conductors external to the brush.

The present improvement relates to a different arrangement of the resistances and current-collectors of the same general character as that last mentioned.

Figure 1 of the drawings illustrating the improvement shows an end view of a commutator-cylinder with one commutator-brush resting thereon, the second brush not being shown, the holder being partially in section. Fig. 2 is a plan view of the brush-holder and brushes, the springs being omitted.

1 is a commutator-cylinder having around it several conducting-segments 2 and insulating-segments 3, the conducting and insulating segments being of about the same width. Above the cylinder is a brush-holder 4, preferably of porcelain and held adjacent to the cylinder in any suitable manner, in which are supported several current-collectors 5, having a thickness of about equal to one-half the width of a segment. Four of these collectors are shown, and they are in the form of rectangular blocks or plates and are separated from each other by insulation 6, the collectors being so mounted that they can move up and down independently, but cannot turn in their sockets. Pressing on the end of each collector is a spring 7, each spring being connected by a wire 8 to a resistance 9.

10 is a wire leading from the resistance-wires to the current supply when the commutator is used on a motor, or to the circuit to be supplied with current when it is used on a dynamo. The second brush of the commutator, which is not shown, may be like the brush described. The several sections of the current-collecting device or brush being independently movable, will always bear on the surface of the cylinder and make good contact therewith, and the resistance-conductors will be thrown into circuit in such manner as to reduce the spark, when by passing from one segment to another a local circuit is formed, since the current in the local circuit will have to pass through one or more of the resistance-conductors in one direction and then through others of said conductors in the opposite direction.

Having thus described the invention, what I claim is—

1. The combination, with a commutator-cylinder, of a commutator-brush having several current-collecting devices, each independently movable in a direction toward and from the commutator-cylinder, and a resistance connected to each collecting device, substantially as described.

2. The combination, with a commutator-cylinder, of several current-collecting devices insulated from each other and independently movable, a spring bearing on the end of each collector, and a resistance connected to each of said collecting devices, substantially as described.

3. The combination, with a commutator-cylinder in which the insulating and conducting segments are of substantially equal size, of several current-collectors about half as thick as the commutator-segments, separated from each other, and a resistance connected to each collector, substantially as described.

4. The combination, with a commutator-cylinder, of a brush-holder, several current-collecting devices or brushes supported therein, but separated from each other by insulating material, and resistances connected to the brushes, substantially as described.

5. The combination, with a commutator-cylinder, of a brush-holder of insulating ma-

terial, such as porcelain, several current-collecting blocks supported therein and independently movable, and a spring pressing on each brush, substantially as described.

6. The combination of a brush-holder and several rectangular current-collecting blocks supported in said holder, said blocks being insulated from each other and independently movable toward and from the commutator-cylinder, substantially as described.

This specification signed and witnessed this 20th day of March, 1891.

THOS. A. EDISON.

Witnesses:
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