(No Model.)

S. H. SHORT.

BRUSH HOLDER FOR DYNAMO ELECTRIC MACHINES.

No. 457,226. Patented Aug. 4, 1891.

Fig. 1.

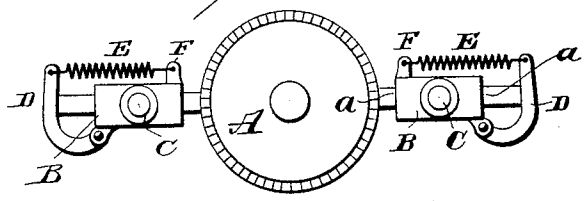
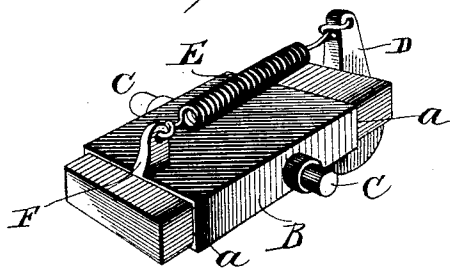


Fig. 2.



Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SIDNEY H. SHORT, OF CLEVELAND, OHIO, ASSIGNOR TO THE SHORT ELECTRIC RAILWAY COMPANY, OF SAME PLACE.

BRUSH-HOLDER FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 457,226, dated August 4, 1891.

Application filed December 18, 1889. Serial No. 334,214. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY H. SHORT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Brush-Holders for Dynamo-Electric Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in brush-holders for dynamo-electric machines or electric motors; and it consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of one embodiment of my invention. Fig. 2 is a view in perspective of the same.

A represents a commutator of any approved construction, and B B are brush-holders, each consisting of a rectangular metal box or holder having open ends *a a*, into which the brush of metal or carbon or other suitable material or compound is inserted and is free to be longitudinally adjusted within the receptacle. To each side of the box or holder and about in its longitudinal center is secured a stud or trunnion C, by which the holder is journaled in a suitable support. (Not shown.) To the under side of the holder is pivoted one end of a bent lever D, to the free end of which is connected one end of a spring E, the opposite end of which is connected with a projection F, attached to the holder. The bent lever engages the rear end of the brush and through the action of the spring serves to feed it endwise against the commutator as the brush is worn away.

The brush-holders are self adjustable with respect to the commutator. When the commutator is rotating in one direction, the friction created by the contact of the brush with the surface of the commutator creates a drag which will operate to tilt the brush-holder at a slight angle and to incline the brushes with respect to the commutator. Now should the commutator be rotated in the opposite direction the brushes will be forced into their holders and the latter caused to tilt and allow the brushes to pass the axis of the commutator, when the brushes will be forced outwardly and assume a slight angle to the commutator, as before, the relative adjustments of both brushes being reversed.

The brush-holders may be arranged so that their trunnions or pivotal supports shall be located in a horizontal plane cutting the axis of the commutator, or they may be located on opposite sides of such horizontal plane. By constructing and arranging the brush-holders so that they may instantly adjust themselves to the commutator in either direction of its rotation they are rendered specially adapted for electric motors, as well as for other purposes.

As it is evident that the construction and relative arrangement of the parts of my improvement might be varied without departing from the spirit of my invention, I would have it understood that I do not confine myself to the particular construction shown and described; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a commutator, of a box open at its ends and pivotally supported at points between its ends, so that the holder may oscillate or incline in either direction relatively to the commutator, a commutator-brush adapted to pass freely through said box, and means for causing said commutator-brush to bear on the commutator with a yielding pressure, substantially as set forth.

2. The combination, with a box having open ends and pivotally supported at points between its ends, of a commutator-brush passing freely through said box, an arm pivoted to said box, and a spring for causing said arm to press against the brush and press it through the box, substantially as set forth.

3. The combination, with a box having open ends, of a brush adapted to be moved longitudinally through the box, a lever pivotally

connected at one end to the box and adapted to bear at or near its free end against one end of the brush, and a spring connected at one end to the free end of the lever and at the other end to the box, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SIDNEY H. SHORT.

Witnesses:
A. B. CALHOUN,
JOHN C. DOLPH.