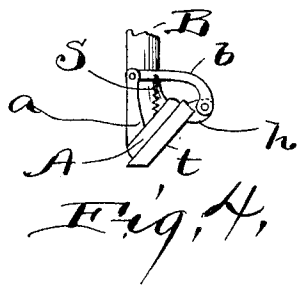
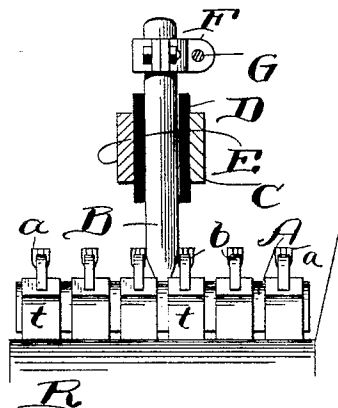
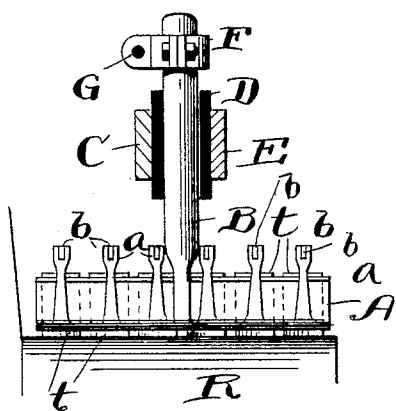
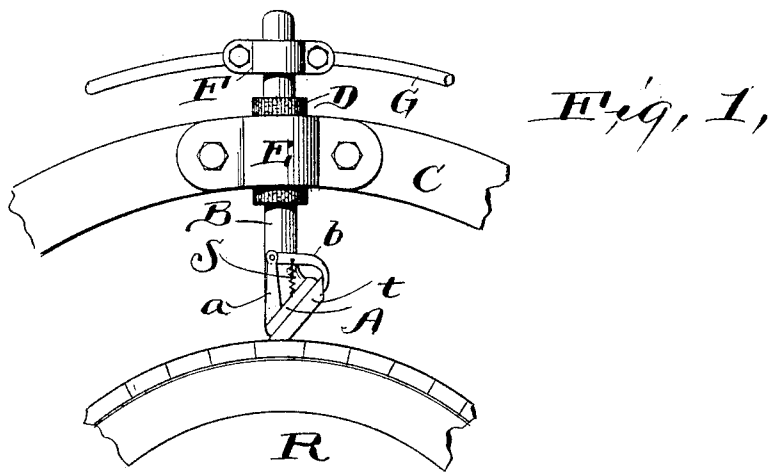


(No Model.)

S. H. SHORT.
BRUSH HOLDER FOR DYNAMOS OR MOTORS.

No. 582,884.

Patented May 18, 1897.



Witnesses,
E. B. Gilchrist
A. M. Rankin

Inventor,
Sidney H. Short,
By his Attorneys,
Thurston & Bates.

UNITED STATES PATENT OFFICE.

SIDNEY H. SHORT, OF CLEVELAND, OHIO.

BRUSH-HOLDER FOR DYNAMOS OR MOTORS.

SPECIFICATION forming part of Letters Patent No. 582,884, dated May 18, 1897.

Application filed February 16, 1897. Serial No. 623,759. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY H. SHORT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Brush-Holders for Dynamos or Motors; 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.

The object of my invention is to provide a brush-holder for dynamos or motors which shall be economical in construction and efficient in service, in which the brushes may be conveniently placed and effectively fed, and in which the relative position on the commutator of brushes in different holders will not be changed by uneven wearing of the brushes. The invention consists of a bar which is parallel with a commutator-bar and is adjustable in a radial direction, and has that one of its surfaces with which the brushes contact inclined at an angle less than a right angle to a tangent to the commutator at the point of brush-contact, in connection with means for holding a brush or brushes against said inclined surface and for feeding them toward the commutator as they wear away.

It also consists in the construction and combination of parts shown, constituting the preferred embodiment of the invention.

The drawings show my invention arranged in desirable form.

Figure 1 is an elevation of the same, looking at the end of the commutator. Figs. 2 and 3 are elevations, partly sectional, of the brush-holder, the former looking from the left of Fig. 1 and the latter from the right. Fig. 4 is a detail in elevation of the lower end of a brush-holder having a modified form of lever for holding and feeding the brush.

The commutator of a dynamo or motor is indicated at R.

A is a bar which lies parallel with a commutator-bar and is held in proper relation thereto by a radial shank B, carried by the rocker-ring C. An insulating-sleeve D surrounds the shank, and about this passes the clamp E, which connects the shank to the rocker-ring. Electrical connection with the other brush-holders is made through the

clamp F and the wires G, or in any other suitable manner. The lower surface of the bar A is inclined at an angle less than a right angle (preferably forty-five degrees) to a tangent to the surface of the commutator at the point of brush-contact, and the brush-holder should be so adjusted that the brush will contact with the commutator at the point where the radial line of the adjustment of the brush-holder intersects the commutator-surface. On the upper surface of the bar A is a lug *a*, to which is pivoted the hook or lever *b*. This lever is drawn downward by the spring S. The brushes, made of carbon or other suitable material, are shown in the drawings at *t*. There may be any convenient number of them, and there are as many levers *b* as there are brushes. The brushes rest against the inclined lower face of the bar A and are there held by the lever *b* alone.

In the arrangement shown in the first three figures the upper end of the brush is beveled and is engaged directly by the point of the lever *b*. As the brush wears away, the spring S causes the same to be continually fed to the commutator. The path of travel of the end of the lever and the bevel on the end of the brush cooperate to cause the lever, while it is feeding the brush forward, to continually hold the same in contact with the bar A. In the modification shown in Fig. 4 a brush having its upper end cut off squarely or at right angles to its sides may be used. In this case the end of the lever *b* is pivoted to a dog *h*, having a right-angle notch engaging with the corner of the brush.

It will be seen from the manner in which the bar A is held and adjusted and from the manner in which the brushes are fed forward that when once adjusted the different brush-holders will not change the presentation of their brushes to the commutator should the brushes wear unevenly. The arrangement of the lever allows a considerable proportion of the brush to be worn away. The brushes are easily placed in position by simply raising the lever by hand and placing the brush against the inclined lower face of the bar A and letting the lever descend upon the upper edge of the brush.

Having described my invention, I claim—

1. The combination of the commutator of

a dynamo or motor, with a radially-adjustable bar which is parallel with a commutator-bar and has an inclined lower face which is inclined at less than a right angle to a tangent to the commutator at the point of brush-contact, and means for holding a brush against said inclined face, and for forcing the brush inward into contact with the commutator-surface, substantially as and for the purpose specified.

2. The combination with a commutator of a dynamo or motor, of a radially-adjustable bar which is parallel to a commutator-bar and has its lower face at an angle less than a right angle to a tangent to the commutator at the point of brush-contact, a lug projecting from said bar and a lever pivoted thereto, and a spring for actuating the lever, the lever operating to hold a brush against the inclined face of said bar and feed it inward, substantially as described.

3. The combination with a commutator of a dynamo or motor, of a bar adjustably held substantially parallel to a commutator-bar by means of a shank projecting from the bar and held by the rocker-ring, said bar having an inclined lower face and having on its up-

per surface a series of lugs, a series of spring-actuated levers which are pivoted to said lugs, which engage with the brushes and hold the same against the inclined surface of said bar, and feed said brushes to the commutator, substantially as described.

4. In a brush-holder for a dynamo or motor, a bar adapted to be held substantially parallel with a commutator-bar, and having an inclined lower face, a lug projecting from said bar, a lever or hook pivoted to said lug and having its end engaging the beveled upper edge of a brush and a spring causing said lever to feed the brush, in combination with a brush having a beveled upper edge, which, when the brush is in position against the bar, diverges from the face of said bar more rapidly than does the path of travel of the engaging end of the said lever, for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

SIDNEY H. SHORT.

Witnesses:

E. L. THURSTON,
ALBERT H. BATES.