

(No Model.)

A. L. RIKER.

BRUSH HOLDER FOR DYNAMO ELECTRIC MACHINES OR MOTORS.

No. 520,169.

Patented May 22, 1894.

Fig. 1.

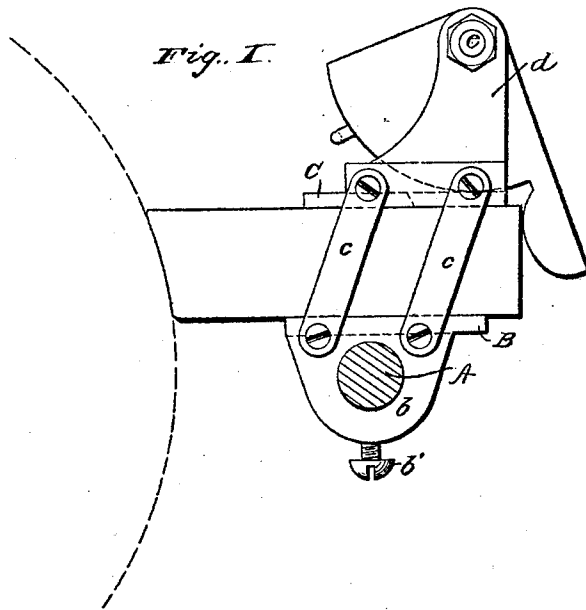


Fig. 3.

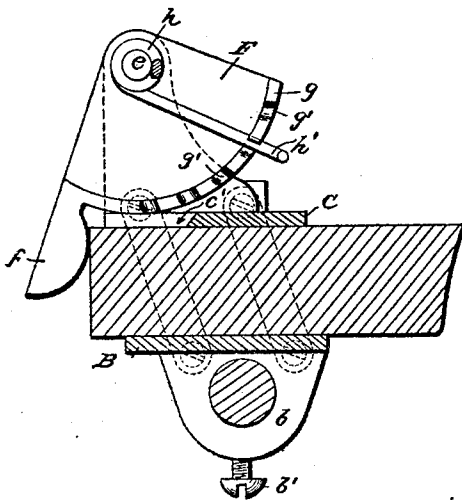


Fig. 2.

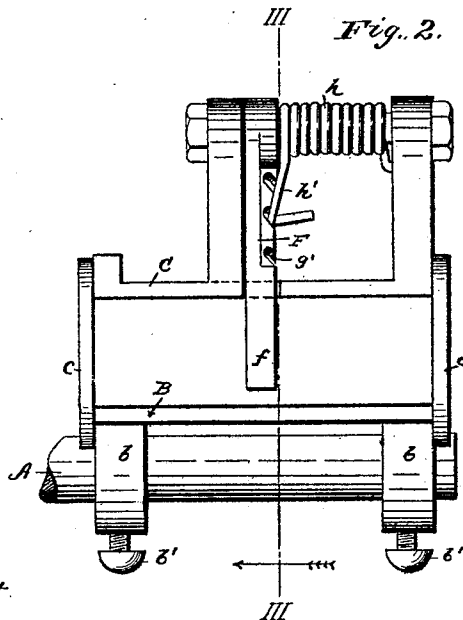
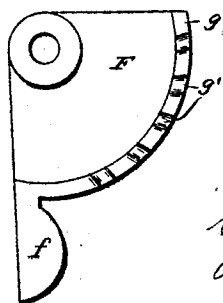


Fig. 4.



Witnesses.

W. R. Edsall
 Geo. Lewis.

Inventor

Audus L. Riker
 by J. P. Mauro
 his attorney.

UNITED STATES PATENT OFFICE.

ANDREW L. RIKER, OF NEW YORK, N. Y.

BRUSH-HOLDER FOR DYNAMO-ELECTRIC MACHINES OR MOTORS.

SPECIFICATION forming part of Letters Patent No. 520,169, dated May 22, 1894.

Application filed March 31, 1894. Serial No. 505,900. (No model.)

To all whom it may concern:

Be it known that I, ANDREW L. RIKER, of New York city, New York, have invented a new and useful Improvement in Brush-Holders for Dynamos, Motors, &c., which improvement is fully set forth in the following specification.

This invention has reference to brush-holders for dynamos, motors, &c.

Among the first requirements of a thoroughly practical brush-holder (particularly for carbon brushes) is that it make a firm contact with the brush or collector, so that the electrical current can pass from one to the other without undue resistance, and that such contact be maintained as the brush is worn away and fed forward. In many brush holders now in use means are provided whereby the brush is automatically fed forward, adjusted, &c., but in almost every instance at a sacrifice of the requirements above noted.

The objects of the present invention are to provide a self-adjustable, automatically-feeding brush-holder which makes a firm, constant and unvariable contact with the brush carried thereby. The most important features of the construction by which these results are accomplished are (first) the arrangement of the contact plates, between which the brush is clamped, whereby to whatever position they are shifted, their contact faces always retain parallelism with reference to each other; and (second) the feeding and clamping mechanism operated by a single spring.

The features already briefly mentioned as well as others of less prominence will be more fully appreciated by reference to the accompanying drawings, in which—

Figure 1, is a side elevation of my improved brush-holder. Fig. 2, is an end elevation thereof. Fig. 3 is a vertical section on the line III—III, Fig. 2, and Fig. 4 is a detail of the adjustment segment.

Referring to the drawings A represents the shaft or rod which passes through ears *b* on the stationary contact plate B being adjustably secured thereto by set screws *b'*. A movable contact plate C is hinged to the plate B by two parallel links *c*, at each end thereof. On the upper plate C are two upwardly

extending arms or brackets *d* connected at their upper ends by a shaft or arbor *e*. A recess *c'* is formed in the end of the plate C between the arms *d*.

F is a segmental adjustment plate having a depending feed-arm or follower *f* thereon, and a flange *g* (provided with a series of notches *g'* therein) along the side of the curved edge thereof. The adjustment segment is journaled on the shaft *e* at the corner near the intersection of the two straight sides thereof, so as to swing around said shaft. A coil spring *h* encircles the shaft *e*, one end being secured in one of the arms *d*, and a straight extension *h'* at the other end adapted to engage in one of the notches *g'* according to the tension to which it is desired to adjust the spring.

The parts being properly assembled, the operation of the device is as follows: The brush, preferably of carbon, is placed between the contact plates B and C, the follower or feed-arm *f* being in contact with the rear end thereof, while the forward end is in contact with the commutator, represented in dotted lines. In this position the tension of the spring is exerted to feed the brush forward as it wears away, and also to force the upper plate C rearwardly against the same, clamping it between the plates so as to make a firm sliding contact therewith, which remains constant during the forward movement of the brush. As the brush is fed forward the feed-arm passes into the slot *c'*. It is apparent that the tension of the spring *h* can be regulated at any time during the operation of the machine by shifting the extension *h'* from one notch *g'* to another.

One great advantage of my improved brush-holder is its self-adjustability, whereby brushes of varying thicknesses can be used without affecting the contact with the holder.

What I claim is—

1. A brush-holder comprising two contact plates hinged one to the other so that their contact faces are parallel in all positions of the plates with reference to each other, substantially as described.

2. A brush-holder comprising two contact plates connected at each end by two parallel links, substantially as described.

3. A brush holder comprising two contact plates connected and movable with reference to each other so that their contact faces retain parallelism in all positions of the plates, and means for clamping the brush between the plates with yielding pressure, substantially as described.

4. A brush-holder comprising two contact plates movable with reference to each other so that their contact faces retain parallelism in all positions of the plates, and a spring for holding the plates in firm contact with the brush and for feeding the latter to the commutator, substantially as described.

5. A brush-holder comprising two contact plates movable with reference to each other so that their contact faces retain parallelism in all positions of the plates, a spring for holding the plates in firm contact with the brush and for feeding the latter to the commutator and means for adjusting the tension of the spring, substantially as described.

6. A brush-holder comprising a relatively stationary contact plate and a movable plate connected therewith by two parallel links at

each end thereof, and a spring actuated, swinging follower or feed-arm on the movable plate, projecting below the contact face thereof, and engaging against the end of the brush, substantially as described.

7. A brush holder comprising a stationary contact plate and a movable plate connected therewith by two parallel links at each end thereof, an adjustment segment journaled on the movable plate having a series of notches therein, a depending follower or feeding-arm on the adjustable segment projecting below the contact face of the movable plate, and a spring for actuating the follower or feeding-arm one end of which is adapted to engage the notches in the segment for adjusting the tension of the spring, substantially as described.

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

ANDREW L. RIKER.

Witnesses:

ALLAN HART WHITING,
THOS. L. PROCTOR.