

(No Model.)

W. S. BISHOP.  
BRUSH HOLDER FOR DYNAMOS.

No. 405,002.

Patented June 11, 1889.

Fig. 1.

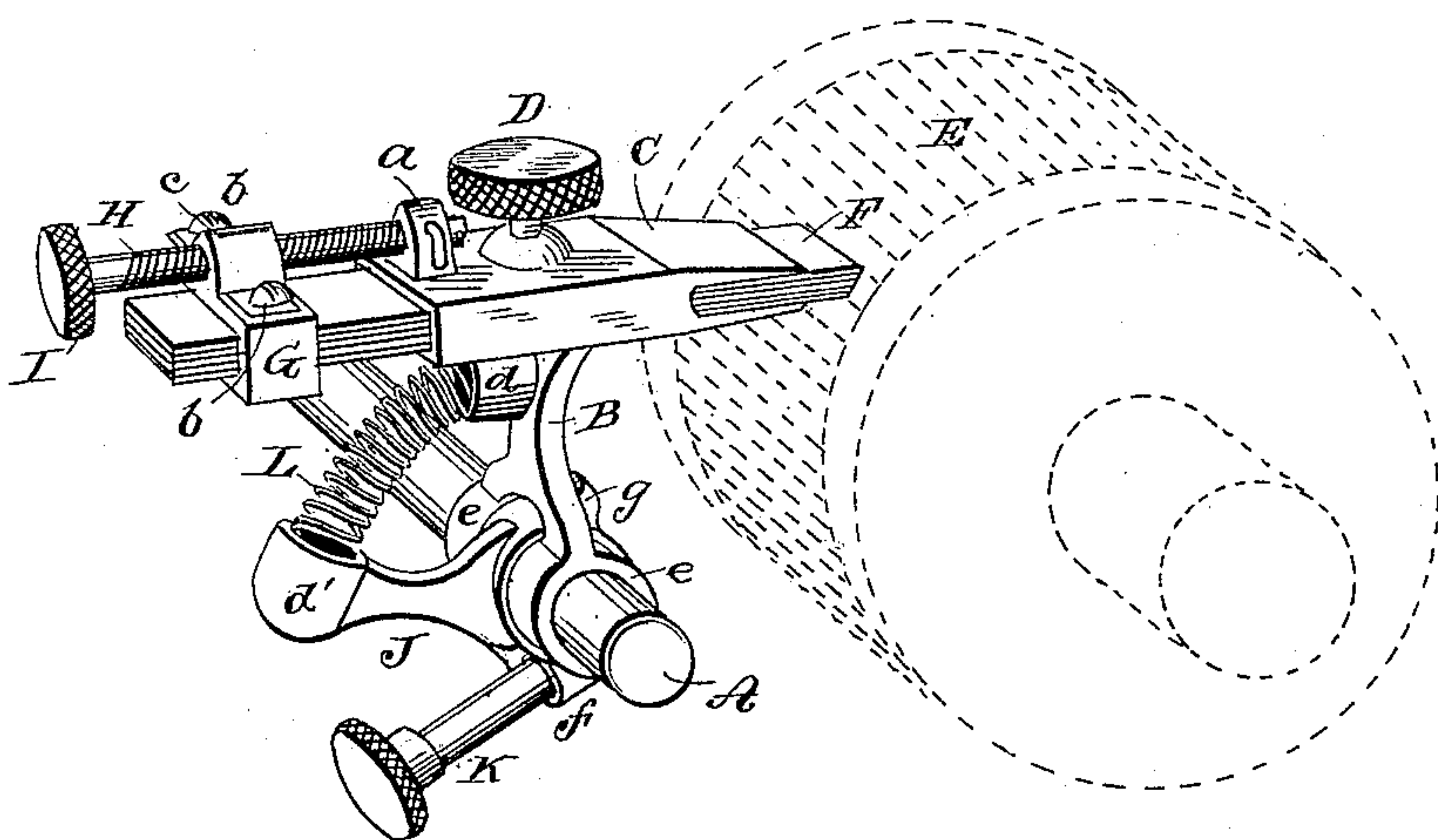


Fig. 2.

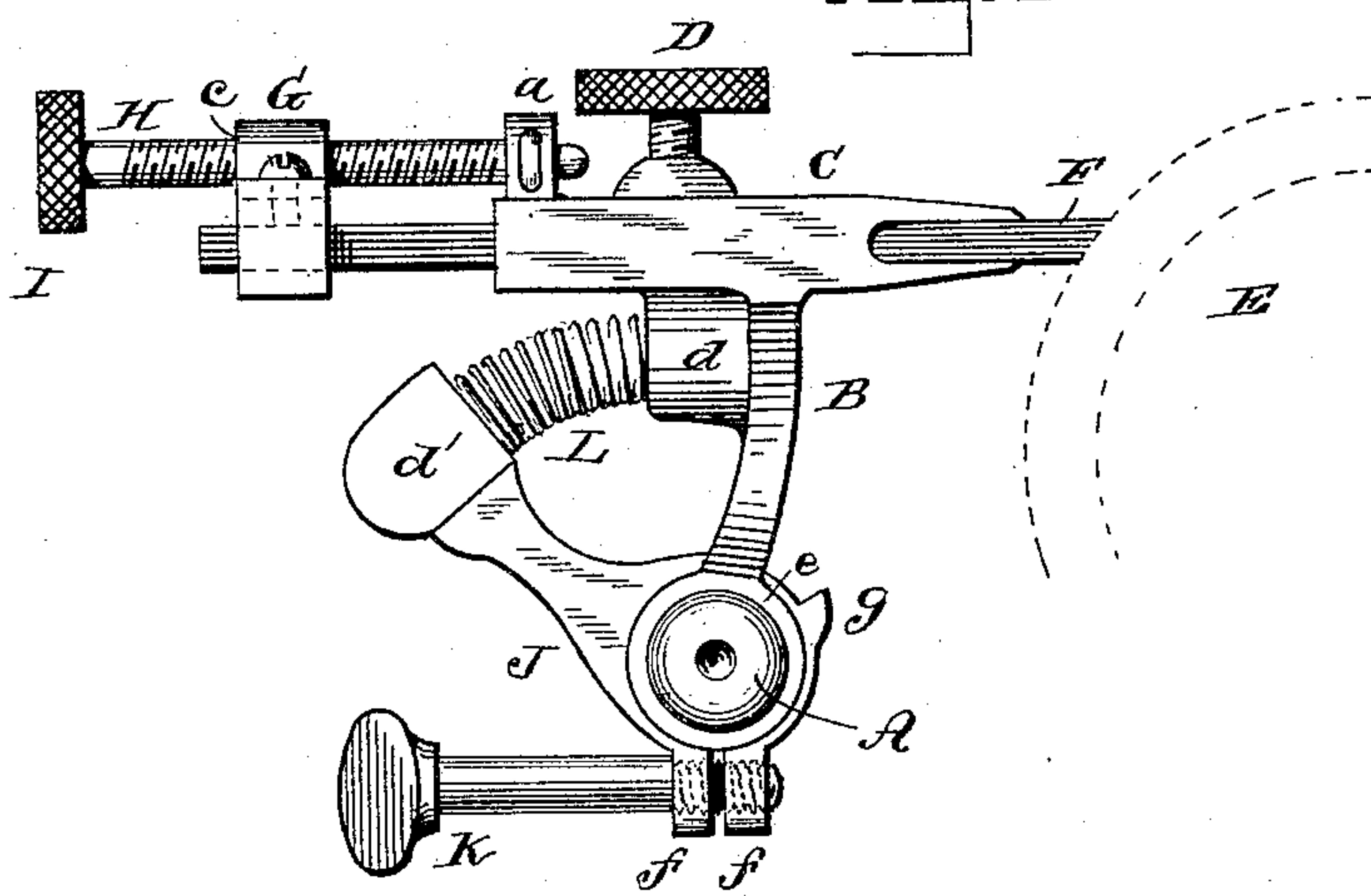


Fig. 3.

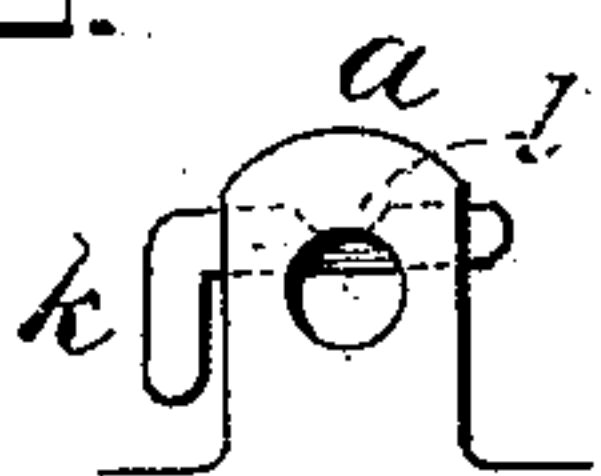
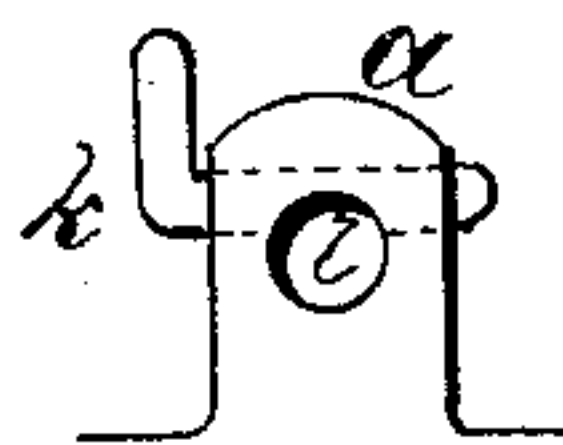


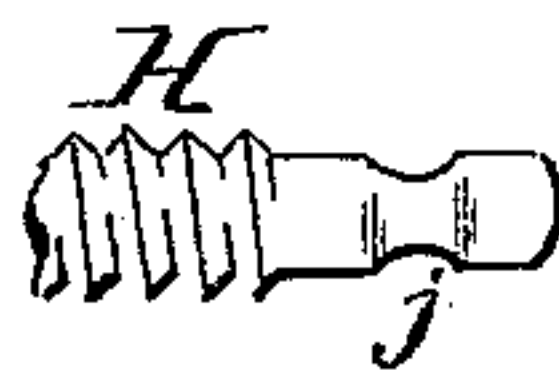
Fig. 4.



WITNESSES:

D. D. Mott  
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Fig. 5.



INVENTOR:

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# UNITED STATES PATENT OFFICE.

WALTER S. BISHOP, OF NEW HAVEN, CONNECTICUT.

## BRUSH-HOLDER FOR DYNAMOS.

SPECIFICATION forming part of Letters Patent No. 405,002, dated June 11, 1889.

Application filed December 6, 1888. Serial No. 292,771. (No model.)

### *To all whom it may concern:*

Be it known that I, WALTER S. BISHOP, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and Improved Brush-Holder for Dynamos and Motors, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a perspective view of my improved brush-holder for dynamos and motors. Fig. 2 is a side elevation of the same, and Figs. 3, 4, and 5 are detail views of the swivel of the brush-adjusting screw.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to provide a simple and efficient holder for the brushes of dynamos and electric motors, which will hold the brush in the position of use with a light uniform pressure, and in which the brush is rendered adjustable in the holder by a positive screw movement.

My invention consists in a rocking arm provided with a socket for receiving the commutator-brush, a spring-supporting arm adjustable on the pivot of the brush-holding arm, said spring-supporting arm and brush-holding arm being provided with sockets for receiving the ends of a spiral spring for pushing the brush forward into contact with the commutator-cylinder, and an adjusting-screw for moving the commutator-brush backward and forward through the brush-socket, all as hereinafter more fully described.

The rod A is attached to the cross-arm of the dynamo in the usual way. To the said rod is fitted the brush-holding arm B, which carries at its outer extremity a brush-holding socket C, provided with a clamping-screw D, and furnished with an apertured lug *a*. The end of the socket C adjoining the commutator-cylinder E is preferably tapered and arranged to fit the commutator-brush F. To the outer end of the said commutator-brush is fitted a clamp G, provided with screws *b* for binding the brush tightly within the clamp. The said clamp is also provided with a lug *c*, which is bored and tapped to receive the adjusting-screw H, the said screw being swiveled in the lug *a*, and provided at its outer end with a milled head I, by which it may be turned.

The swiveled end of the screw H, which is provided with a circumferential groove *j*, is engaged by the pin *k* passing transversely through the lug *a*. The pin *k* is bent at a right angle and provided with a curved notch *l* at a point opposite the screw H. By turning the pin *k* so that the notch *l* coincides with the hole in which the screw is swiveled, as shown in Fig. 4, the said screw may be withdrawn from the lug *a*. When the pin *k* is turned into a reversed position, as shown in Fig. 3, the screw will be retained by the engagement of the pin with the grooved end of the screw. By turning the screw H one way or the other, the brush F is pushed forward through the socket C or withdrawn, and when in the correct position is clamped by the screw D.

The brush-holding arm B is provided with a cylindrical socket *d* and with two sleeves *e*, fitting loosely upon the rod A. Between the sleeves *e*, upon the rod A, is placed the spring-holding arm J, provided with a socket *d'*, and split and furnished with ears *f*, which are drilled and tapped to receive the tangent-screw K, by means of which the arm J is clamped in any desired position on the rod A. The arm J is also provided with a lug *g*, for limiting the motion of the brush-holding arm B.

In the sockets *d d'* are placed the ends of a spiral spring L. When the spiral spring is designed to push the brush F forward into contact with the commutator-cylinder E, as in the case of small dynamos or motors, the spring is placed loosely in the sockets and held there by its own pressure, the said spring then acting under compression; but when my improvement is applied to a large dynamo or motor the ends of the spring L are fixed in the sockets *d d'*, and the spring is extended so as to relieve the pressure of the commutator-brush and brush-holding arm upon the commutator-cylinder E.

I have shown the arm B curved slightly toward the commutator-cylinder to afford an increased space for the spiral spring L; but I do not confine myself to this construction.

When it is desired to remove the brush from the holder, the swiveled end of the screw is released in the manner already described,

when the brush and the clamp G may be removed together.

Having thus fully described my invention, I claim as new and desire to secure by Letters

5 Patent—

1. The combination, with the brush F and the socket C, provided with the apertured lug *a*, of the clamp G, the screw H, having a circumferential groove *j*, and the notched pin *k*,  
10 substantially as specified.

2. The combination, with the loosely-pivoted brush-holding arm of a dynamo or electric motor, of a curved spiral spring and an adjustable arm forming the abutment for the  
15 spiral spring, substantially as specified.

3. The combination, in a brush-holder for dynamos and electric motors, of the brush-holding rod A, the arm B, provided with the

sleeve *e*, placed on the said rod A, and provided with the socket C for receiving the  
20 brush, the brush F, the adjusting-screw H, pivotally connected with the socket C, and the clamp G, adapted to engage the brush F, substantially as specified.

4. The combination, with the brush-hold-  
25 ing arm B and the rod A, arranged to support the said brush-holding arm, of the arm J, placed on the rod A, and provided with the clamping-screw K for clamping the said arm upon the rod A, and furnished with the stop-  
30 lug *g*, substantially as specified.

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Witnesses:

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