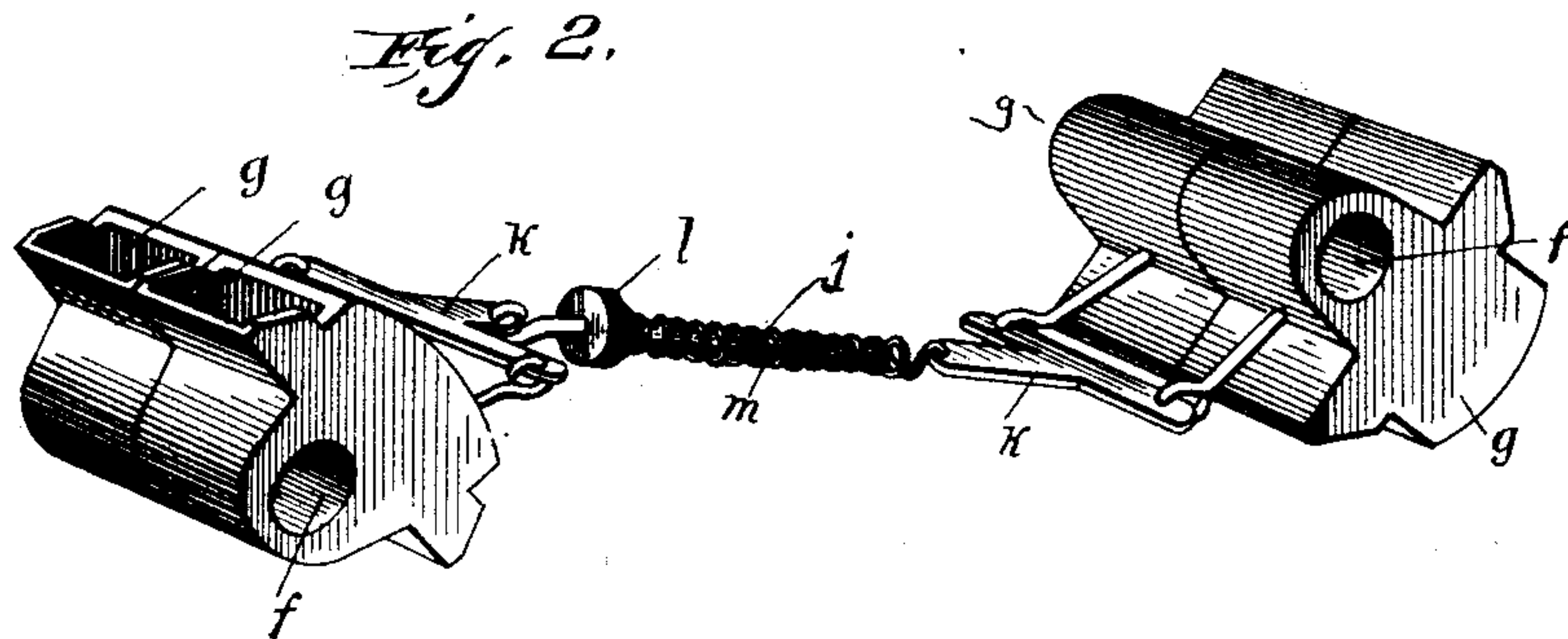
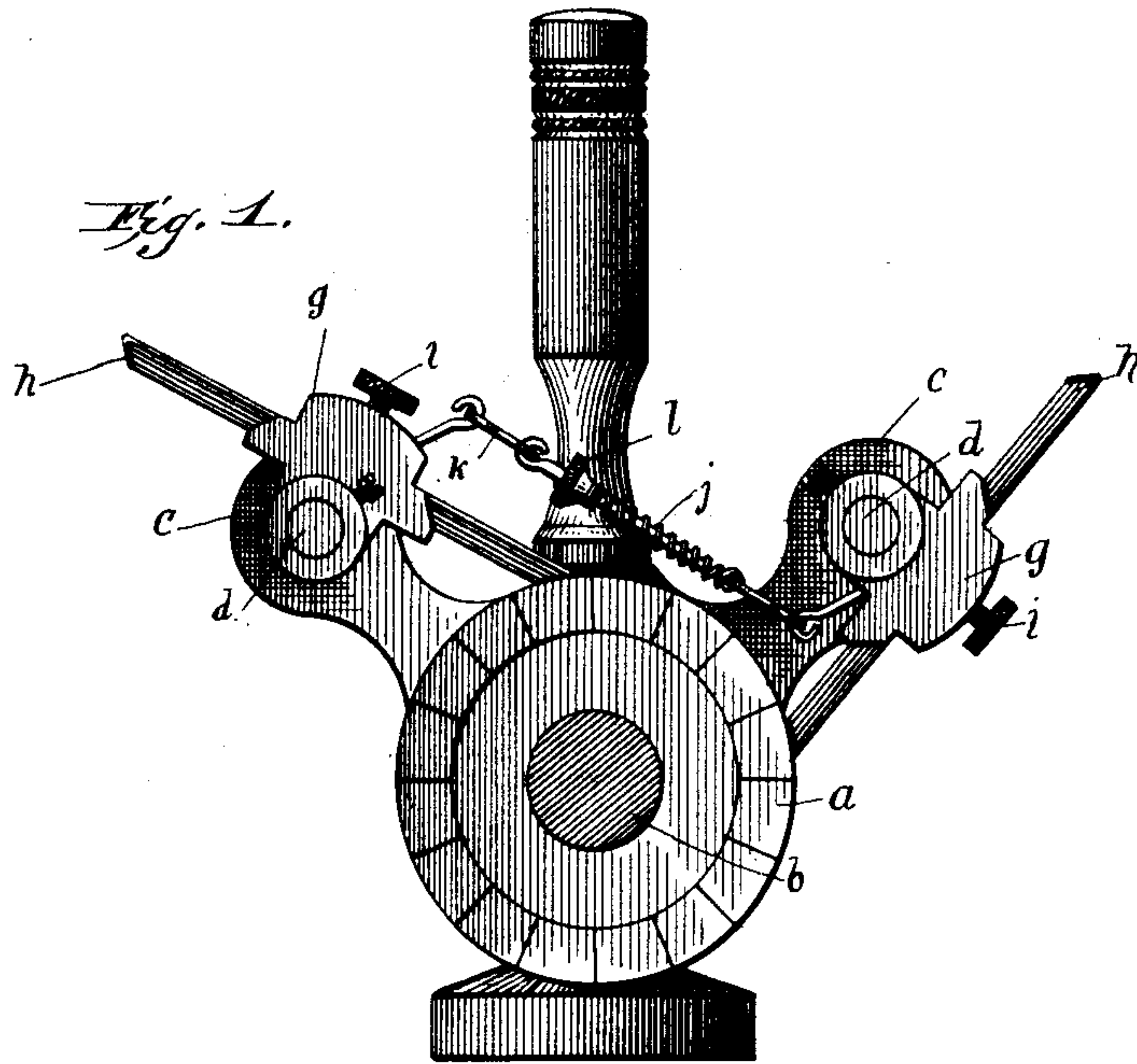


(No Model.)

J. F. KESTER.
BRUSH SPRING FOR DYNAMOS.

No. 404,715.

Patented June 4, 1889.



WITNESSES

Edwin L. Yewell,
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UNITED STATES PATENT OFFICE.

JESSE F. KESTER, OF TERRE HAUTE, INDIANA, ASSIGNOR OF THREE-
FOURTHS TO JOSEPH H. BRIGGS, OF SAME PLACE.

BRUSH-SPRING FOR DYNAMOS.

SPECIFICATION forming part of Letters Patent No. 404,715, dated June 4, 1889.

Application filed October 29, 1888. Serial No. 289,411. (No model.)

To all whom it may concern:

Be it known that I, JESSE F. KESTER, of Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful
5 Improvements in Brush-Springs for Dynamo-Electric Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to an improvement in
15 brush-holders for dynamo-electric machines or motors.

The object of my invention is to provide a cheap, simple, and durable brush-holder wherein the separate holders of each brush
20 are connected together by a brush-spring, causing the commutator-brushes to bear upon the commutator with precisely the same tension, and thereby wear the commutator uniformly round and even, and, further, the ten-
25 sion of all the brushes can be changed at will by the brush-spring and an adjustable nut located in plain view and easy of access.

With these ends in view my invention consists in certain novel features of construction
30 and combinations of parts, more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a detail end elevation of the commutator, brushes, and brush-holders, the armature-shaft of the machine being shown in section. Fig. 2 is a detail perspective view of the brush-holders detached.

In the drawings, the reference-letter *a* indicates a commutator mounted upon the armature-shaft *b*, and *c* indicates a suitable brush-holder support or carrier provided with pins or spindles *d d*, projecting laterally and parallel from the same over the commutator.
40 Upon said pins *d d* are loosely mounted the brush-holders *g*, preferably (although not necessarily) two holders on each pin, as shown, and each of said holders is preferably formed of one piece, provided with a longitudinal circular bearing or aperture *f*, through which
50 a pin *d* loosely extends, and a transverse socket

g, through which a commutator-brush *h* extends, and in which it is secured by one or more thumb-screws *i*. As before mentioned, the brush-holders are mounted upon the pins
55 *d d*, to rotate so as to throw the brushes to or away from the commutator.

The series of brushes are yieldingly and adjustably secured together by one or more retractive springs *j*, connected at its opposite
60 ends to yokes or connecting-links *k*, of non-conducting material, and said yokes are loosely secured to arms rigidly secured to the brush-holders and extending from the same in opposite directions and from opposite sides
65 to give an increased leverage. It will thus be seen that the two series of brush-holders are yieldingly secured together, and that the tension of the spring draws the brushes against the commutator with a uniform pressure.
70 The spring *j* is provided with a thumb-nut *l*, adjustable on a rod *m*, upon which the spring is mounted, and by which the tension of the spring is increased or diminished to regulate uniformly the pressure of the brushes upon
75 the commutator.

The brush-holders can be confined upon the pins *d d* in any suitable manner to allow rotation of the holders.

It will be readily seen that all electrical
80 communication between the brush-holders, although they are connected, is cut off by the insulating connecting-links *k k*.

The great advantages and utility of the herein-described device will be readily seen
85 and understood by all persons who have had experience with dynamo-electric machines or motors.

What I claim is—

1. In a dynamo or motor, a brush-holder
90 support provided with spindles extending from the same parallel with the commutator, brush-holders loosely mounted upon the same to swing transversely to the axis of the commutator, and brushes carried by the holders to
95 bear upon the commutator, in combination with arms extending from opposite sides of the holders, links of insulating material loosely secured to the arms, and a retractive spring and adjusting rod and nut connecting the
100 links, for the purpose set forth.

2. In a dynamo or motor, a brush-holder

support, two sets of brush-holders loosely carried by the same, and commutator-brushes carried by the holders, in combination with arms extending from the holders, a pair of
5 insulating-links connecting the arms of each set of holders, and a retractive spring and tension-regulating rod connecting the two links, for the purpose set forth.

3. In a dynamo or motor, the combination
10 of a brush-holder support provided with spindles extending parallel with the periphery of the commutator, brush-holders loosely mounted upon said spindles and provided with transverse sockets, brushes secured in
15 said sockets to bear upon the commutator and swing to or away from the same in planes transverse to its axis, and a retractive spring connecting the holders to yieldingly hold the brushes engaging the commutator, substan-
20 tially as described.

4. In a dynamo or motor, the combination of a brush-holder support, the loosely-mounted brush-holders, the brushes carried by the same and adapted to swing to or away from the
25 commutator, links of insulating material loosely secured to the holders, and a retractive spring connecting the links to hold the brushes yieldingly in contact with the commutator, as set forth.

5. In a dynamo or motor, the combination
30 of a brush-holder support extending in a plane above the commutator, brush-holders loosely supported by the same parallel with and over and above the commutator to swing in planes
35 transverse to the axis of the same, commutator-brushes carried by the holders, and a retractive spring connecting the holders to yieldingly hold the brushes in engagement with the commutator, as set forth.

6. In a dynamo or motor, the combination
40 of a brush-holder support provided with a pair of spindles extending parallel with and over the commutator, brush-holders, each having a longitudinal bearing loosely embracing a spindle and a transverse socket, brushes
45 secured in the sockets to swing with the holders to or from the commutator, and a retractive spring connecting the holders to yieldingly hold the brushes in engagement with the com-
50 mutator, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JESSE F. KESTER.

Witnesses:

CHAS. M. WERLE,
HUBERT E. PECK.