

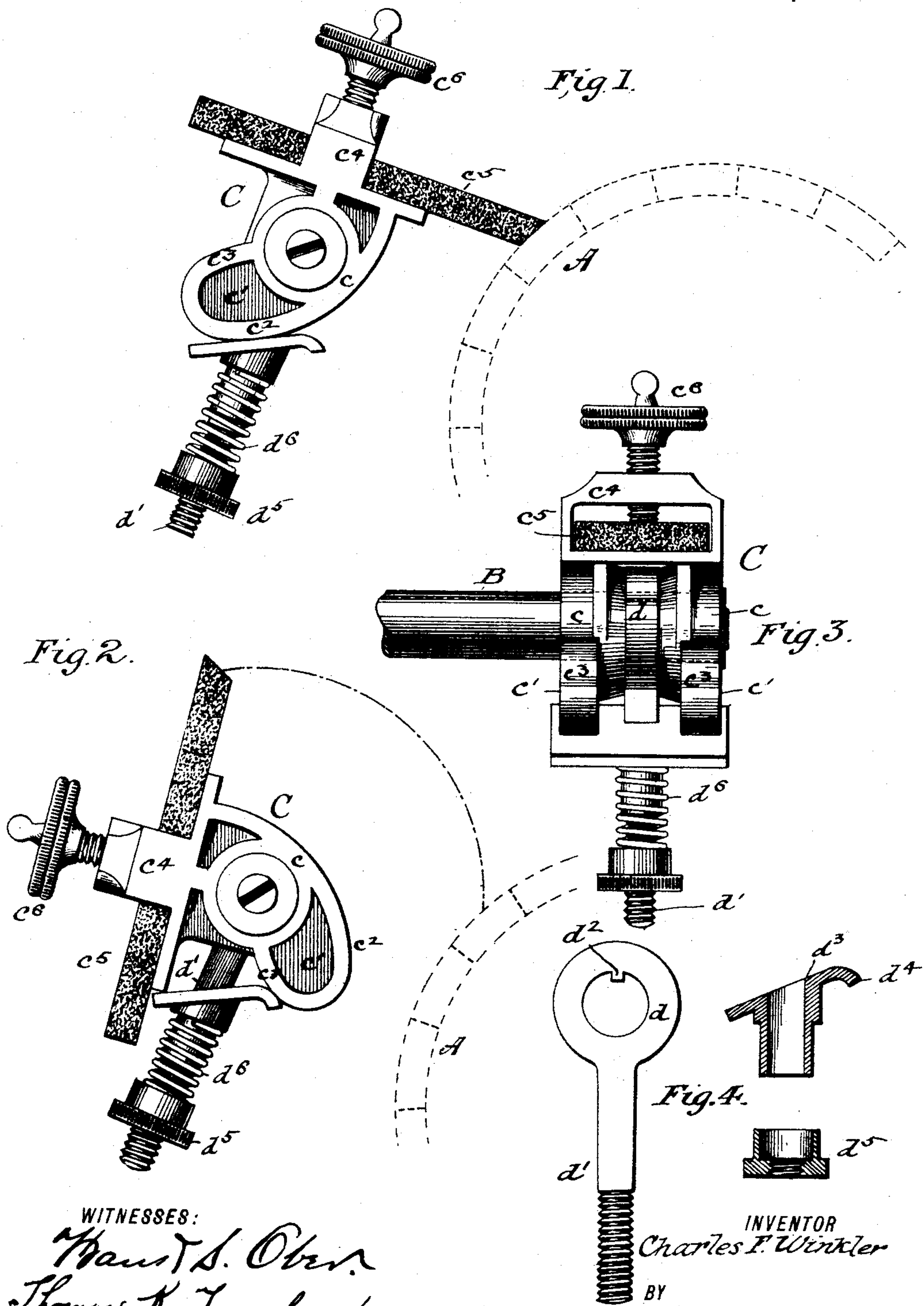
(No Model.)

C. F. WINKLER.

BRUSH HOLDER FOR DYNAMO ELECTRIC MACHINES.

No. 438,668.

Patented Oct. 21, 1890.



WITNESSES:
Hans S. Ober.
Thomas K. Trenchard.

INVENTOR
Charles F. Winkler

BY
W. B. Johnson
ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES F. WINKLER, OF TROY, NEW YORK.

BRUSH-HOLDER FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 438,668, dated October 21, 1890.

Application filed July 26, 1890. Serial No. 360,011. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. WINKLER, a citizen of the United States, residing in Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Brush-Holders for Dynamo-Electric Machines, of which the following is a specification.

My invention relates to brush-holders for dynamo-electric machines and motors, the object being to provide a holder which will maintain the brush against the commutator with a yielding pressure, and which may be operated to remove the brush from the surface of the commutator and lock it in that position.

To this end the invention consists in the combination of a pivoted frame carrying the brush and provided with a heel or heels, each having two cam-faces and a spring-operated push device constructed to act upon the cam-faces to either maintain the brush in or out of contact with the commutator.

Referring to the accompanying drawings, Figure 1 represents an end elevation of the brush-holder, showing the position of the parts when the brush is against the commutator. Fig. 2 is a similar view showing the parts in their position when the brush is locked out of contact with the commutator. Fig. 3 is a rear elevation of the holder, and Fig. 4 represents a group of three details of the holder.

A represents in dotted lines a portion of a commutator, and B represents the rod, which usually projects at right angles from the yoke carrying the brushes. Upon the end of this rod is loosely pivoted a frame or holder C, consisting of two hubs c , having projecting lugs or heels c' on their lower side. Each of these lugs or heels has two cam-surfaces c^2 on its edge. On the opposite sides of the hubs from the lugs c' they are joined together by frame c^4 , which forms a seat for the brush c^5 . A set-screw c^6 is provided to hold the brush in its seat. The hubs themselves are separated from each other a short space, and this space is occupied by another hub or ring d , which is keyed to the shaft and forms a part of a rod or tail d' , screw-threaded at its lower end. By means of the key d^2 the rod maintains constantly the same position with respect to the rod B. The end of the rod nearest the ring d is squared, and carries upon it

a table d^3 , having a flat surface, which is inclined to the rod and having one of its edges d^4 slightly curved over. The threaded portion of the rod carries a cupped nut d^5 , and between the nut and hub of the table d^3 and around the shaft is a coiled spring d^6 , which exercises a pressure upon the table, tending to force it toward the axis of the frame C.

Now when the parts are assembled in their working position the heels c' of the frame C are resting upon the table d^3 . When the pressure is against the commutator, the cam-surfaces c^2 are resting against the flat surface of the table, and while in this position the table presses against the heels with the tendency to swing the frame on its pivot and cause the brush c^5 to press upon the surface of the commutator. This is effected by reason of the fact that the heels c' bend slightly away from the commutator, thus forming a crank, against which pressure is exerted by the table on a line substantially tangent to a circle cutting the point of contact between the table and the cam, the center of which is the pivot. When the brush is to be removed and locked out of contact with the commutator, the frame C is swung on its pivot until the extreme outer ends of the heels c' have traveled past the curved edge d^4 of the table. The table then slides toward the pivot a short distance and rests against the cam-surface c^3 , thus adequately locking the bracket in the position shown in Fig. 2.

Having thus described my invention, I claim—

1. A brush-holder for dynamo-electric machines and motors, consisting of a pivoted bracket having a brush seat or socket on one side of the pivot and a lug or projection on the opposite side provided with a cam face or faces, in combination with an inclined table having its surface in engagement with the cam face or faces, and a spring for forcing the table against the cam face or faces, substantially as described.

2. A brush-holder for dynamo-electric machines and motors, consisting of a pivoted bracket having a brush seat or socket on one side of the pivot and a lug or projection on the opposite side provided with two cam-faces, one upon each side, in combination with a spring-pressed table having two surfaces, one

for engagement with each of the said cams, whereby the brush is maintained in its working position, substantially as described.

3. The combination, with the rod B, of a
5 pair of hubs loosely mounted thereon, with a space between them, connected together by a brush seat or socket, which they carry, and each hub provided with a projecting heel or cam, in combination with a rod d' , having a
10 ring or hub at one end, which occupies the space on the rod B between the hubs and keyed thereon, a sliding table carried by the rod d' and engaging the projecting heels or
15 cams, a spring forcing the table against the cams, and a set-nut on the rod d' , for adjusting the tension of the spring, substantially as set forth.

4. The combination, with the bracket C, provided with a lug or lugs, each having two cam-surfaces, of a spring-pressed table having 20 a curved-over edge, the flat surface of the table engaging with one of the cam-surfaces, while the curved-over edge of the table engages with the other cam-surface, for the purpose set forth.

25 In witness whereof I have hereunto affixed my seal and signed my name in the presence of two subscribing witnesses

CHARLES F. WINKLER. [L.S.]

Witnesses:

FREDERICK S. COTÉ,
EUGENE L. MERCHANT.