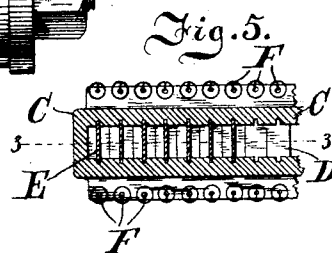
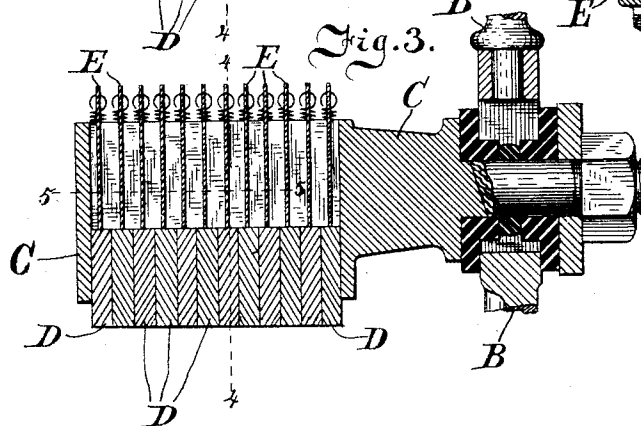
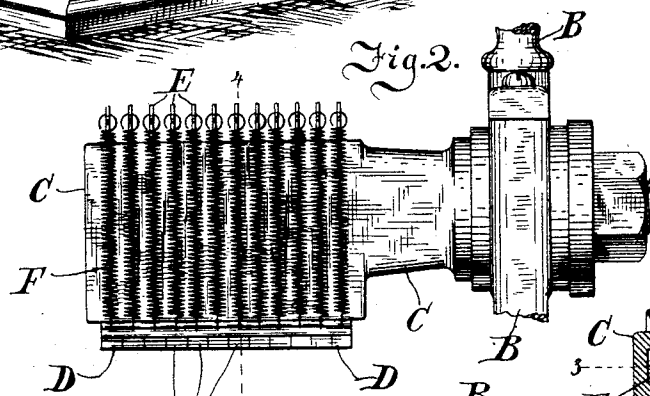
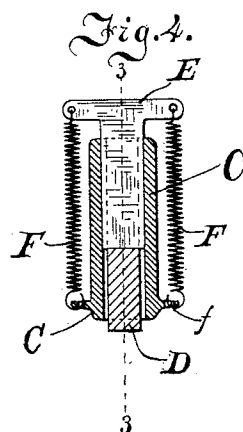
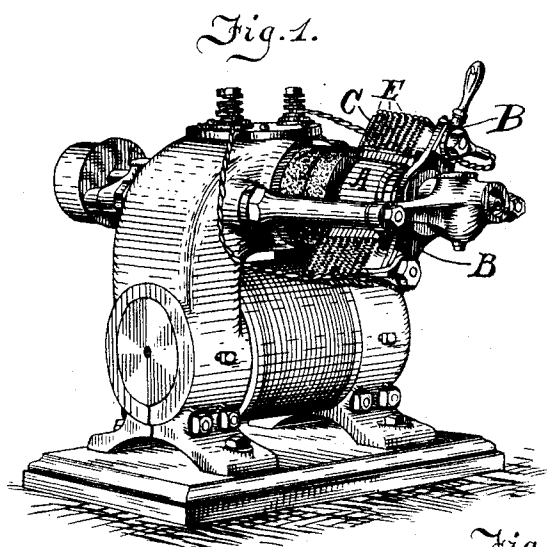


(No Model.)

C. D. JENNEY.
COMMUTATOR BRUSH AND HOLDER.

No. 469,806.

Patented Mar. 1, 1892.



WITNESSES.

Chas. D. Leonard.
Frank H. Wood.

per Charles D. Jenney, INVENTOR.
Ct. E. W. Bradford, ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES D. JENNEY, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE
JENNEY ELECTRIC MOTOR COMPANY, OF SAME PLACE.

COMMUTATOR BRUSH AND HOLDER.

SPECIFICATION forming part of Letters Patent No. 469,806, dated March 1, 1892.

Application filed January 16, 1891. Serial No. 377,963. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. JENNEY, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a certain new and useful Improvement in Commutator-Brushes, of which the following is a specification.

My invention relates to that class of commutator-brushes in which carbon pencils or their equivalent are used as the parts which come into immediate contact with the commutator.

Said invention will be first fully described, and then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a dynamo-electric machine or motor equipped with commutator-brushes embodying my said invention; Fig. 2, a side elevation of one of said brushes with a fragment of the rocker-arm carrying it attached thereto; Fig. 3, a central sectional view on the dotted line 3 3 in Figs. 4 and 5; Fig. 4, a transverse sectional view on the dotted lines 4 4 in Figs. 2 and 3, and Fig. 5 a horizontal sectional view looking downwardly from the dotted line 5 5 in Fig. 3.

In said drawings the portions marked A represent the commutator of a dynamo-electric machine or motor; B, the rocker-arm carrying the brushes; C, the brush-head or frame carrying the operative portions of the brush; D, the pencils or contact-points which come in contact with the commutator in operation; E, followers which operate upon said pencils or contact-points, and F springs by which said followers are operated to hold said points or pencils in contact with the commutator.

The commutator A and rocker-arm B are or may be of any usual or desired construction, and need not be further described herein.

The heads C are secured to the rocker-arm, as usual, and extend out over the commutator. They are formed with preferably rectangular openings in which the ends of the pencils or points D are inserted. Interiorly of these openings, as shown most plainly in Figs. 5 and 4, ways are provided for the followers E. Exteriorly on each head I prefer to provide projections or flanges *f*, to which to attach the springs F.

The contact-points D are preferably short

carbon pencils, rectangular in cross-section and arranged closely side by side to fill the openings in the head C. They are adapted to rest upon the commutator in operation, and are held into forcible contact therewith by the followers and their springs. Said carbon points or pencils D are shown in the drawings as nearly worn out, with the followers almost to the limit of their movement. As will be observed, especially by an examination of Fig. 4, the distance from the commutator to the brush-head through the carbon is very short, and therefore the electric current has to pass through carbon but for a short distance. This is an advantage, as the resistance of carbon as a conductor is greater than that of metal, and therefore the shorter the distance which the current has to pass through this substance the more advantageous the arrangement becomes in operation.

The followers E are preferably T-shaped, as shown most plainly in Fig. 4, and rest in the ways provided therefor in the sides of the opening in the head C. There are as many of these followers as there are contact-points, and each follower rests upon one of said points, and thus said points are given independent means of being held under pressure into contact with the commutator. To the extremities of the heads of these followers the springs are connected, as shown.

The springs F are preferably fine coiled springs attached at one end to the projections or flanges *f* on the heads C and at the other ends to the extremities of the heads of the followers, as shown most plainly in Fig. 4. They are thus enabled, through said followers, to hold the contact-points D into forcible but yielding contact with the commutator at all times, each point being independent of the others. The contact-surface is thus capable of being divided into as many parts as may be desired, and a close contact with the commutator at numerous points is thus insured.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a commutator-brush, of the brush-head, an opening therein adapted to receive and hold contact-points, ways also in said opening, followers mounted in said ways, and springs attached to said head

and said followers, whereby they are adapted to operate upon said contact-points, substantially as set forth.

2. The combination, in a commutator-brush,
5 of the head C, having projections *f*, and an opening extending throughout substantially its length, several contact-points D, mounted in said opening closely alongside each other, followers E, resting in ways in the interior
10 surface of the opening in the head C with their lower ends resting upon the contact-points and their upper ends provided with ears or pro-

jections, and springs F, connected to said projections on said followers and to the projections *f* on the head C, substantially as 15 shown and described.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 13th day of January, A. D. 1891.

CHARLES D. JENNEY. [L. s.]

Witnesses:

CHESTER BRADFORD,
FRANK W. WOOD.