(No Model.)

E. H. BOWEN.

COMMUTATOR BRUSH.

No. 428,038. Patented May 13, 1890.

Fig. 1

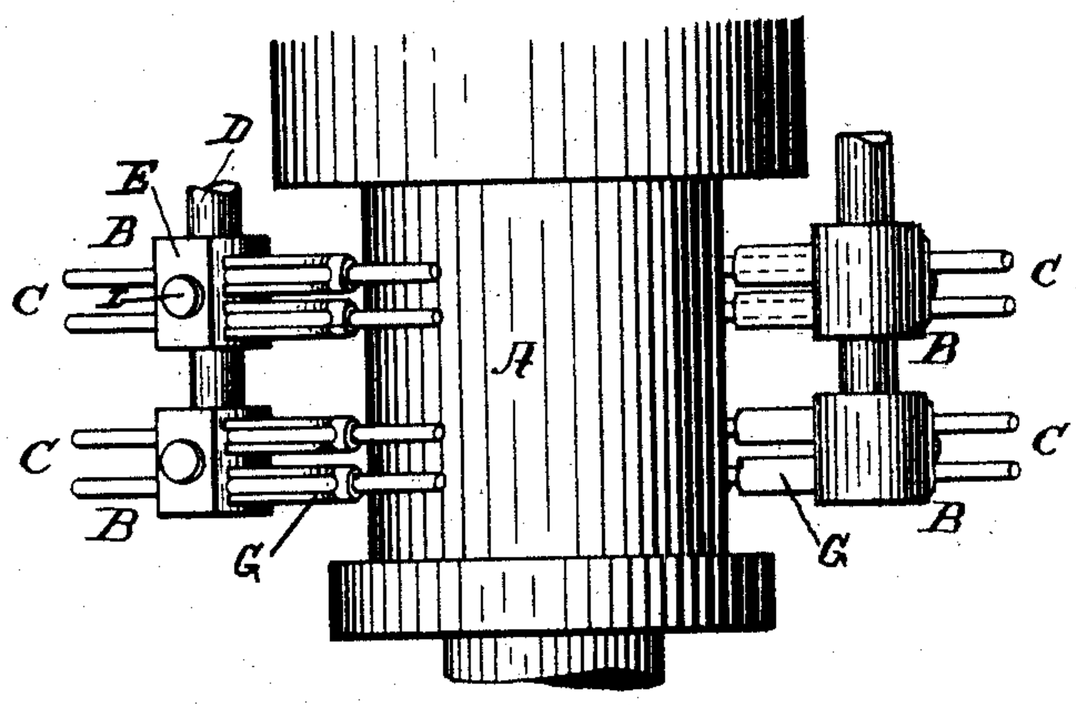


Fig. 2

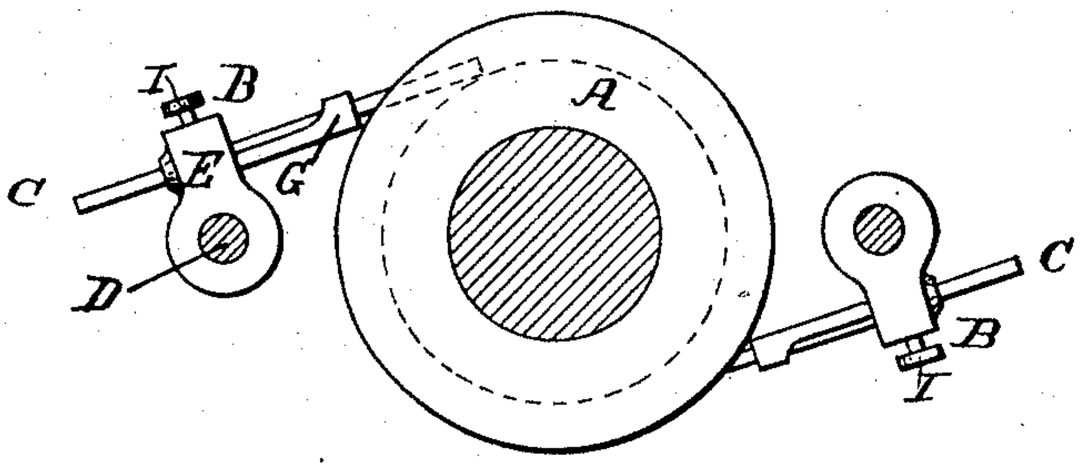
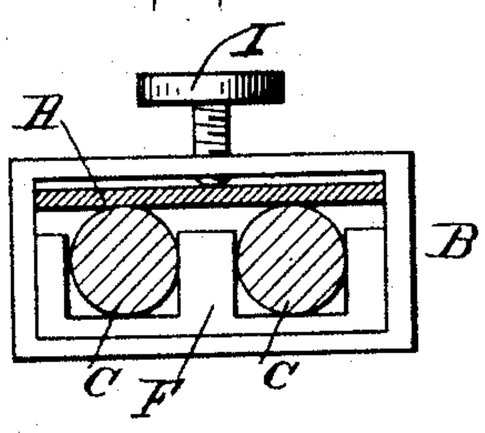


Fig. 3



Witnesses.
B. S. Lowrie.
C. E. Humphrey.

Inventor
Evan H. Bowen,
By C. E. Humphrey
Attorney

UNITED STATES PATENT OFFICE.

EVAN H. BOWEN, OF AKRON, OHIO, ASSIGNOR OF TWO-THIRDS TO LEWIS A. SMITH AND JOHN HENRY KRUSE, OF SAME PLACE.

COMMUTATOR-BRUSH.

SPECIFICATION forming part of Letters Patent No. 428,038, dated May 13, 1890.

Application filed August 8, 1889. Serial No. 320,077. (No model.)

To all whom it may concern:

Be it known that I, EVAN H. BOWEN, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Commutator-Brush, of which the following is a specification.

My invention has relation to improvements in brushes for commutators for dynamo-electric machines and electric motors.

The object of my invention is to produce a new and improved brush which shall efficiently convey the electric current, and which will, without the use of any lubricant, reduce the wear of the brush and commutator to a minimum.

My invention consists in adopting as a brush a carbon stick similar in composition to that prepared and constructed for electric-arc lamps, and having sufficient rigidity to be self-supporting, and in peculiarly-shaped clamps for retaining said sticks tangential to the periphery of the commutator.

The manner of applying my invention is illustrated in the accompanying drawings, in which similar letters of reference indicate like parts, and in which—

Figure 1 is a plan of a commutator and brush-clamps having cylindrical carbon brushes; Fig. 2, an end elevation of the same, and Fig. 3 a section of the clamp with carbons therein.

In the drawings, A is the commutator, which may be of any desired pattern or form, opposite which are the brush-clamps B B, which are connected with the dynamo-frame in any of the known methods. Each clamp consists of a head, preferably cylindrical, mounted on a short shaft D, by which they are supported, and which is connected with the dynamo-frame in any of the approved methods, which head has a projection E at one side, through which is a slot tangential to the periphery of the head. In the slot next to the head is a loose jaw F, provided with grooves for the carbon sticks, and having a finger G, which projects toward the commutator and terminates in a ring. The carbon stick is inserted through the slot and ring at the end of the finger and rests in the groove in the jaw F, where it is securely fastened by a plate H and set-screw. The end of stick thus rests on the commutator tangential to its periphery, and is ordinarily of sufficient rigidity to be self-supporting; but to afford additional strength and prevent its breaking from a sudden blow I provide the finger G, hereinbefore described, and hence when the stick is sufficiently rigid these fingers may be omitted.

I have illustrated in the drawings carbon sticks cylindrical in form similar to those used in arc lamps; but this form is not essential, as any form of cross-section desired may be adopted, the essential idea of my invention being the adoption of a prepared carbon stick to take the current from the commutator, in combination with a clamp peculiarly constructed for holding its end against and tangential to the periphery of the commutator.

These brushes not only convey the current freely, affording little resistance thereto, but are neither rapidly worn themselves, nor do they wear the commutator as rapidly as metallic brushes.

I claim—

1. The combination, with a commutator of a dynamo-electric machine, of a rigid carbon stick and a clamp having a grooved jaw, a compressing-plate, and a set-screw to receive said stick and retain it against and tangential to the periphery of the commutator, substantially as shown.

2. The combination, with a commutator of a dynamo-electric machine, of a rigid carbon stick and a clamp having a jaw provided with a projecting finger terminating in a ring, a compressing-plate, and a set-screw for retaining the stick against the commutator tangential to its periphery, substantially as shown.

In testimony that I claim the above I hereunto set my hand.

EVAN H. BOWEN.

In presence of—
B. W. HALLOWAY,
C. P. HUMPHREY.