(No Model.)

C. A. COOLEY.

COMMUTATOR FOR DYNAMO ELECTRIC MACHINES.

No. 258,022. Patented May 16, 1882.

Fig. 1

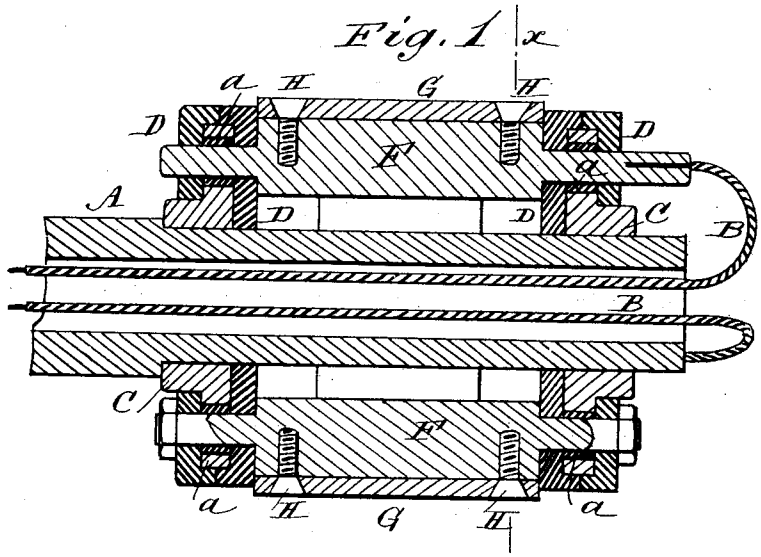
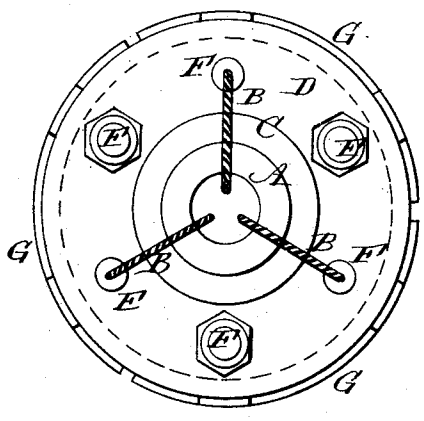


Fig. 2

Fig. 3



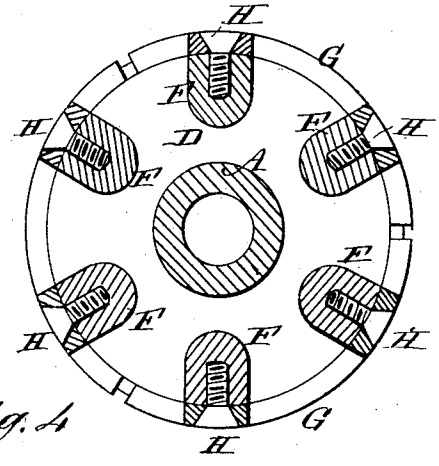
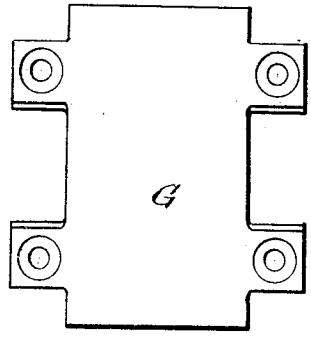


Fig. 4



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UNITED STATES PATENT OFFICE.

CHARLES A. COOLEY, OF NEW BRITAIN, CONNECTICUT.

COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 258,022, dated May 16, 1882.

Application filed March 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. COOLEY, of New Britain, Hartford county, Connecticut, have invented a new and useful Improvement in Commutators for Dynamo-Electric Machines, of which the following is a full, clear, and exact description.

The object of my invention is to provide a commutator for dynamo-electric machines of such construction as to render the renewal of the wearing-segments a matter of a few moments' time and without disturbance of the armature-wires or removal of the commutator from its shaft.

The invention consists in certain novel features of construction hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section of a commutator of my improved construction. Fig. 2 is an end view, and Fig. 3 a transverse section of the commutator on the line *x x;* and Fig. 4 is a face view of one of the wearing-segments.

A is the armature-shaft, made tubular to receive the wires B from the armatures. On this shaft are flanged metal hubs C C, that are provided at each side with vulcanite washers or disks D D for insulating the flanged hubs. These washers are recessed on their inner faces to half the thickness of the flanges, so as to receive and wholly insulate them, and thus prevent any deposit of copper-dust on their sufraces. The hubs C are secured to the shaft by set-screws.

F F are rods extending through the flanged hubs C and washers D, and of enlarged size between the two hubs. The rods F are insulated by sleeves *a*, of vulcanite, where they pass through the flanges. To these rods are secured segments G, of copper, which form the wearing-surfaces of the commutator, each segment being attached by screws H, passing through projections that extend beyond the wearing-surface, so that the segments present an unbroken surface to the brushes. There are preferably six rods F, and three of them are extended to receive the ends of the armature-wires B, which are thus attached, one to each copper segment. The other three rods are fitted with nuts on their ends outside the washers, to bind the parts firmly together. The segments G are to be punched from sheet-copper of suitable thickness to sustain the wear of the commutator-brushes for reasonable length of time. When the surface has become rough the segments can be removed by taking out the screws H and new ones put in place.

This commutator is simple in construction, the insulation is perfect, and the wearing-surfaces can be readily removed, as shown.

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

1. In commutators, the flanged hubs C, insulating-washers D, rods F, and copper segments G, combined on the shaft A, substantially as described.

2. The recessed insulating-washers D, in combination with the flanged hubs C of a commutator, substantially as described.

3. In commutators, the rods F, having enlarged middle portions, in combination with the flanged hubs C and washers D, substantially as described.

CHARLES A. COOLEY.

Witnesses:
L. W. WELLS,
W. E. LATHAM.