

J. J. & T. J. McTIGHE.

COMMUTATOR FOR DYNAMO ELECTRIC MACHINES.

No. 260,111.

Patented June 27, 1882.

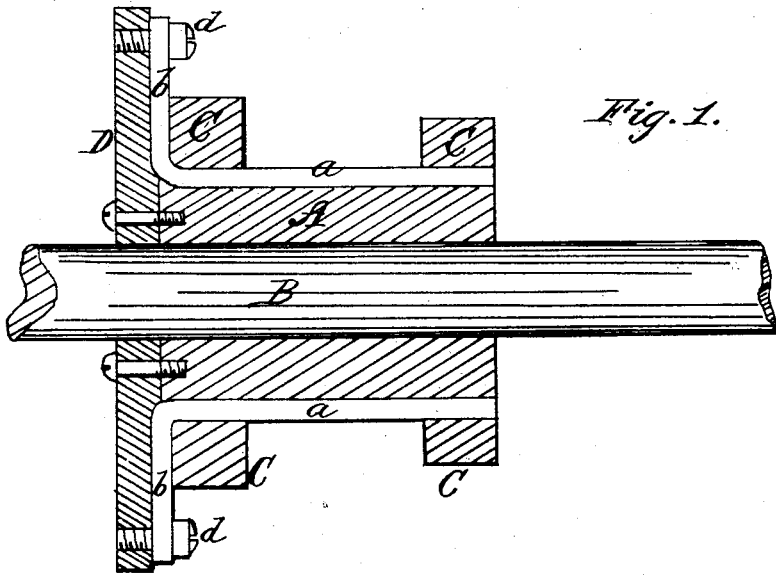


Fig. 1.

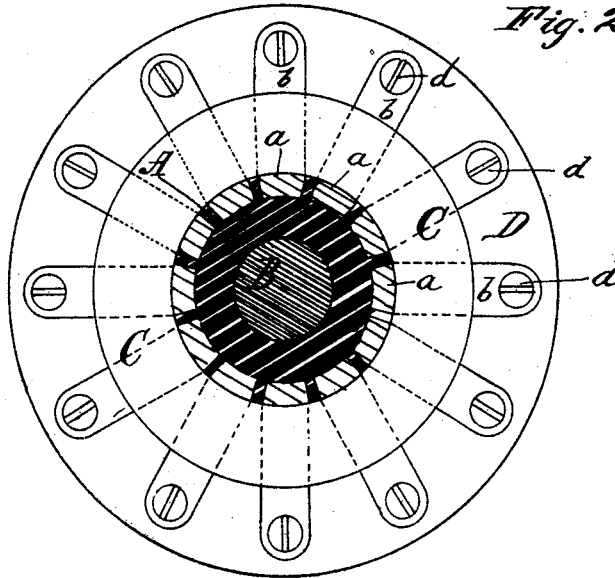


Fig. 2.

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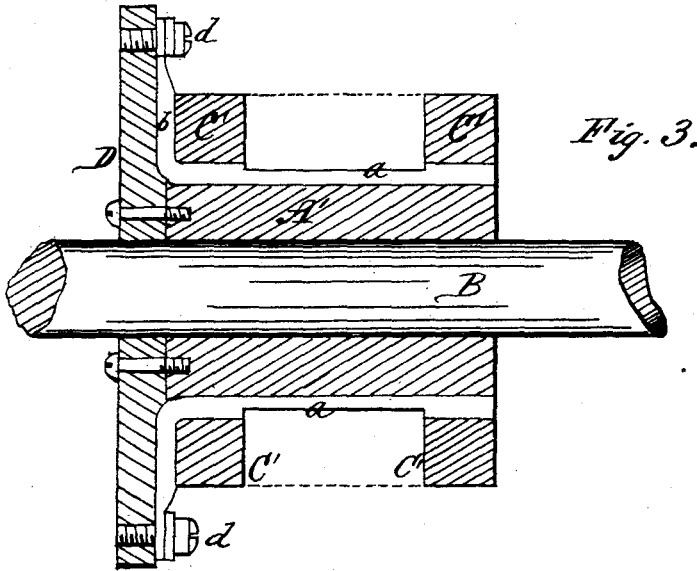
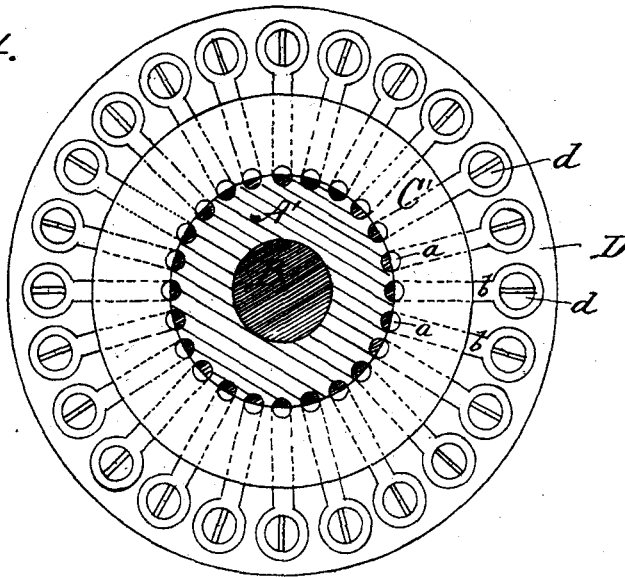


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES J. MCTIGHE AND THOMAS J. MCTIGHE, OF PITTSBURG, PA.

COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 260,111, dated June 27, 1882,

Application filed May 3, 1882. (No model.)

To all whom it may concern:

Be it known that we, JAMES J. MCTIGHE and THOMAS J. MCTIGHE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Commutators for Dynamo-Electric Machines; and we 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 appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a longitudinal vertical section, and Fig. 2 a transverse section, of our improved commutator or collecting-cylinder. Figs. 3 and 4 are similar views, respectively, of a modification.

This invention relates to the construction of commutators or collectors for electric generators, and has for its objects simplicity, cheapness, and effective operation.

The invention consists in the construction and combination of parts, substantially as hereinafter fully described and claimed.

In the drawings, A designates a solid block of hard rubber or equivalent insulating material, of cylindrical form, and fitted to the shaft B of the electric machine in any suitable manner.

C C are collars, one at each end of the body A, and formed integral therewith. The body A is perforated, either in molding or subsequently by drilling, with a number of holes longitudinally, the perforations being in a circle, at short intervals, described at the junction of the collars C with body A. Wires, bars, or rods *a* are then driven into the perforations, tightly fitting the same throughout. The whole is then chucked and turned down between the collars till the surface of the bars or rods is even and smooth, after which the rubber between the bars *a*, at their exposed portions, is removed, so that in operation the brushes may preserve contact in the rotation of the armature which is attached to shaft B. The wires or rods *a* may then be turned up at

the ends, or shaped originally to form the extensions *b*, whose ends are perforated. An insulating head or flange, D, is then fixed to the body A, and serves to clamp the rods *a* against the body A, and the extensions *b* are screwed to the head D, as shown, the fastening-screws *d* serving also to join up the armature-wires to the extensions *b*.

The perforations in body A and the rods *a* may be of any desired shape in cross-section.

Instead of forming the body A and collars C C as described, a cylinder, A', may be perforated, and after the rods *a* have been inserted, as described, the cylinder A' turned down till the wires *a* or rods are exposed, thus leaving collars C' C' still embracing the wires or rods.

This construction is very simple and economical. It is strong and durable. The collars, being integral with the internal body, A or A', hold the metal rods or bars securely, so that the latter are enabled to withstand the operation of truing up in a lathe. This latter operation is further assisted by the support given the rods *a* by that part of the body A which is immediately within them.

Of course, where two or more brushes are used on one side of the cylinder the material of body A may be left intact between the rods *a*.

Where the bars *a* are of such size as to bear the truing up without the internal support at the portion where they are exposed, the body A at that part need not be in contact with them at all, thus affording an air-space under and between the bars *a* for cooling.

We claim as our invention—

1. A commutator composed of a single cylinder of insulating material, having one or more integral collars perforated longitudinally with a circular series of holes, in combination with a series of metal rods or bars placed in said perforations and retained by the collar or collars, substantially as specified.

2. A commutator composed of a single cylinder of insulating material, A, having one or more integral collars C, perforated longitudinally with a circular series of holes, in com-

5 bination with a series of metal rods or bars,
a, placed in said perforations, and having the
extensions *b*, a head, *D*, of insulating mate-
rial, clamping the extensions *b* against the cyl-
inder *A* or collar *C*, and screws *d*, substan-
tially as described.

In testimony that we claim the foregoing as

our own we have hereto affixed our signatures
in presence of two witnesses.

JAMES J. MCTIGHE.
THOMAS J. MCTIGHE.

Witnesses:

GEORGE H. WELSH,
A. V. D. WATTERSON.