(No Model.)

G. W. BEARDSLEE.

COMMUTATOR FOR DYNAMO ELECTRIC MACHINES.

No. 264,230. Patented Sept. 12, 1882.

FIG. 1.

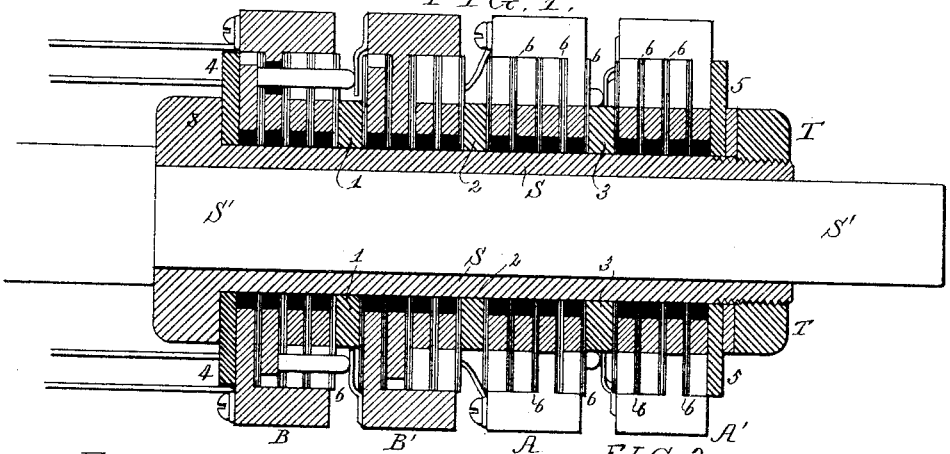


FIG. 4.

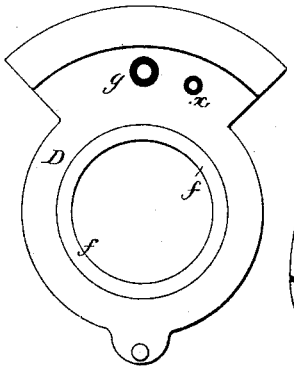


FIG. 2

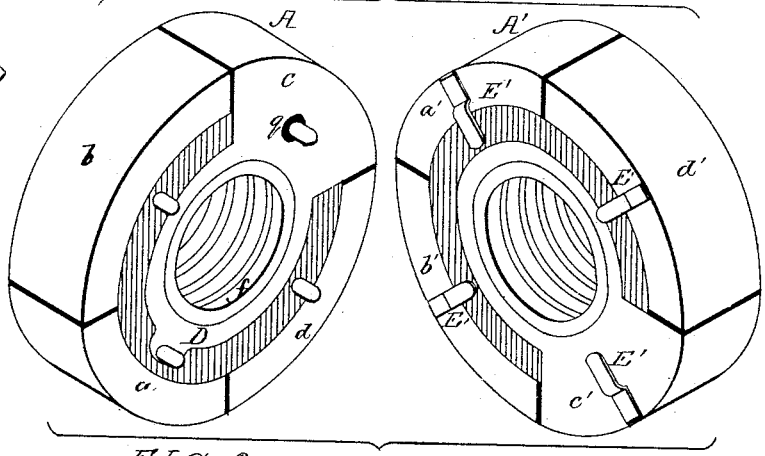
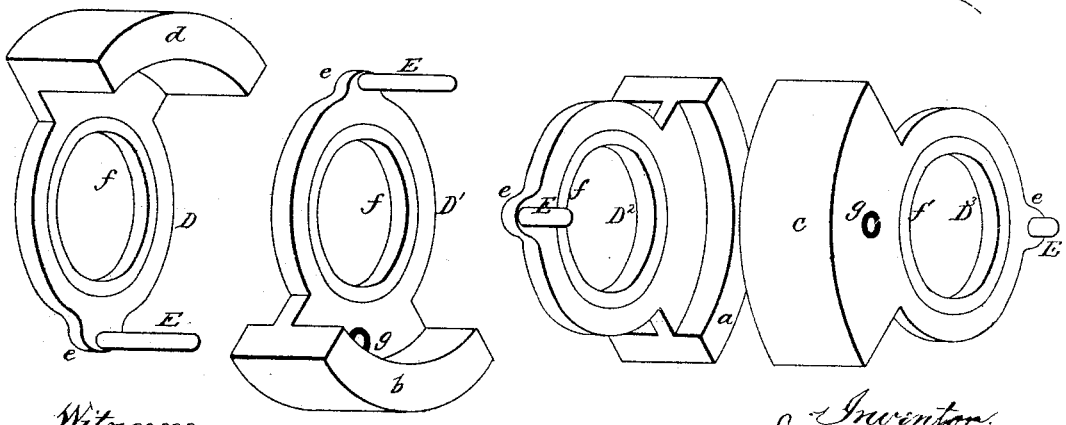


FIG. 3.



Witnesses:
James F. Tobin
Harry Drury

Inventor:
Geo. W. Beardslee
by his Attorneys
Howson and Sons

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. BEARDSLEE, OF BROOKLYN, NEW YORK, ASSIGNOR TO WILLIAM F. JOBBINS, OF EAST ORANGE, NEW JERSEY.

COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 264,230, dated September 12, 1882.

Application filed May 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BEARDSLEE, a citizen of the United States, and a resident of Brooklyn, New York, have invented certain Improvements in Commutators for Dynamo-Electric Machines or Electric Motors, of which the following is a specification.

My invention consists of certain improvements in the construction of commutators for dynamo-electric machines or electric motors, the present invention being more particularly applicable to the arrangement of commutators and circuits described in an application for Letters Patent filed by me May 19, 1882, serial No. 61,789.

In the accompanying drawings, Figure 1 is a longitudinal section of the commutator-wheels mounted on a shaft; Fig. 2, a perspective view of two adjoining wheels detached from the shaft; Fig. 3, a perspective view of the several segments of a wheel detached, and Fig. 4 a face view of one of the segments.

In Fig. 1, B B′ A A′ are the commutator-wheels, which are mounted on a sleeve, S, on the shaft S′ of the armature of the machine. The wheels are secured on the sleeve between a shoulder, *s*, at one end and a screw-nut, T, at the other, being insulated from each other by washers 1 2 3, and from the shoulder and nut at opposite ends by washers 4 and 5, while insulating-bushes in each wheel insulate the metallic portions of the wheel from the sleeve and shaft; or the wheels may be mounted on an insulating-sleeve. Each wheel may be provided with two or more segments, there being four in the present instance, and each segment *a*, *b*, *c*, or *d* of the wheel A, for example, has to be electrically connected with the corresponding opposite segment, *a′*, *b′*, *c′*, or *d′*, of the wheel A′. In the machine described in my said application this was accomplished by means of wires running through the wheels and secured by suitable screws to all the segments; but in the present device this is avoided, so that it is only necessary to run four of the armature terminal wires to the segments of the wheel B and the other four terminals to the segments of the wheel A, the connections between the segments of each pair of wheels being made by constructing the wheel as follows: Each of the contact-segments of the wheels B and A is attached to or forms part of an annular disk, D, D′, D^2, or D^3, Fig. 3, of smaller diameter than the wheel, and provided with an insulating-bushing, *f*, to fit on the sleeve S. Each segment is so cast with or secured to its disk that when the several disks D D′ D^2 D^3 are fitted side by side on the sleeve S, with their intervening insulating-washers 6 6, the disks will be within the segments and the peripheries of the segments *a b c d* will be in line with each other, so as to form a complete and compact wheel, Fig. 2. Each disk D is provided with a teat, *e*, diametrically opposite its segment, and on this teat is fixed a pin, E, the pin on each disk being of such a length that when the several pieces are fitted together the pins will all extend beyond the face of the wheel to about the same extent as indicated in Figs. 1 and 2. The disks carrying the segments *b* and *c*, Fig. 3, have openings *g*, bushed with insulating material, for the passage of the pins E of the disks carrying the segments *a* and *d*.

The wheels B′ and A′ may be made up like the wheels B and A, except that the pins E are to be omitted; or they may be made in any other convenient way, provided they have insulated segments corresponding to those of the wheels B and A. To each segment of each wheel B′ and A′ is secured a projecting spring-finger, E′, in such a position that when the wheels are fitted on the shaft the several pins on the wheels B and A will be in contact with the spring-fingers E′, as shown in Fig. 1; or the segments of the wheels B′ and A′ may be so constructed that the pins E will abut directly against the segments themselves when the wheels are in place.

It will be seen that the several parts of the wheels can be readily slipped onto the sleeve one after the other and secured, the only connections required in addition to those formed by the pins being to connect four of the terminals to the segments of the wheel B and the other four terminals to the wheel A, Fig. 1, these latter terminals being passed through insulated openings *x*, Fig. 4, in the several disks of the wheels B B′.

I claim as my invention—

1. The combination of a commutator-wheel, A′, having insulated metallic segments, with

a commutator-wheel, A, having segments secured to or forming parts of disks, provided with pins E, adapted to form electrical contacts with the segments of the wheel A′.

2. The combination of a commutator-wheel, A′, having insulated segments and spring-fingers E′, with a commutator-wheel, A, having segments secured to or forming parts of disks, provided with pins E, to come into contact with the fingers E′.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. W. BEARDSLEE.

Witnesses:
WALTER K. FREEMAN,
E. F. BARNES.