(No Model.)

2 Sheets—Sheet 1.

G. W. BEARDSLEE.

DYNAMO ELECTRIC MACHINE.

No. 264,227. Patented Sept. 12, 1882.

FIG. 1.

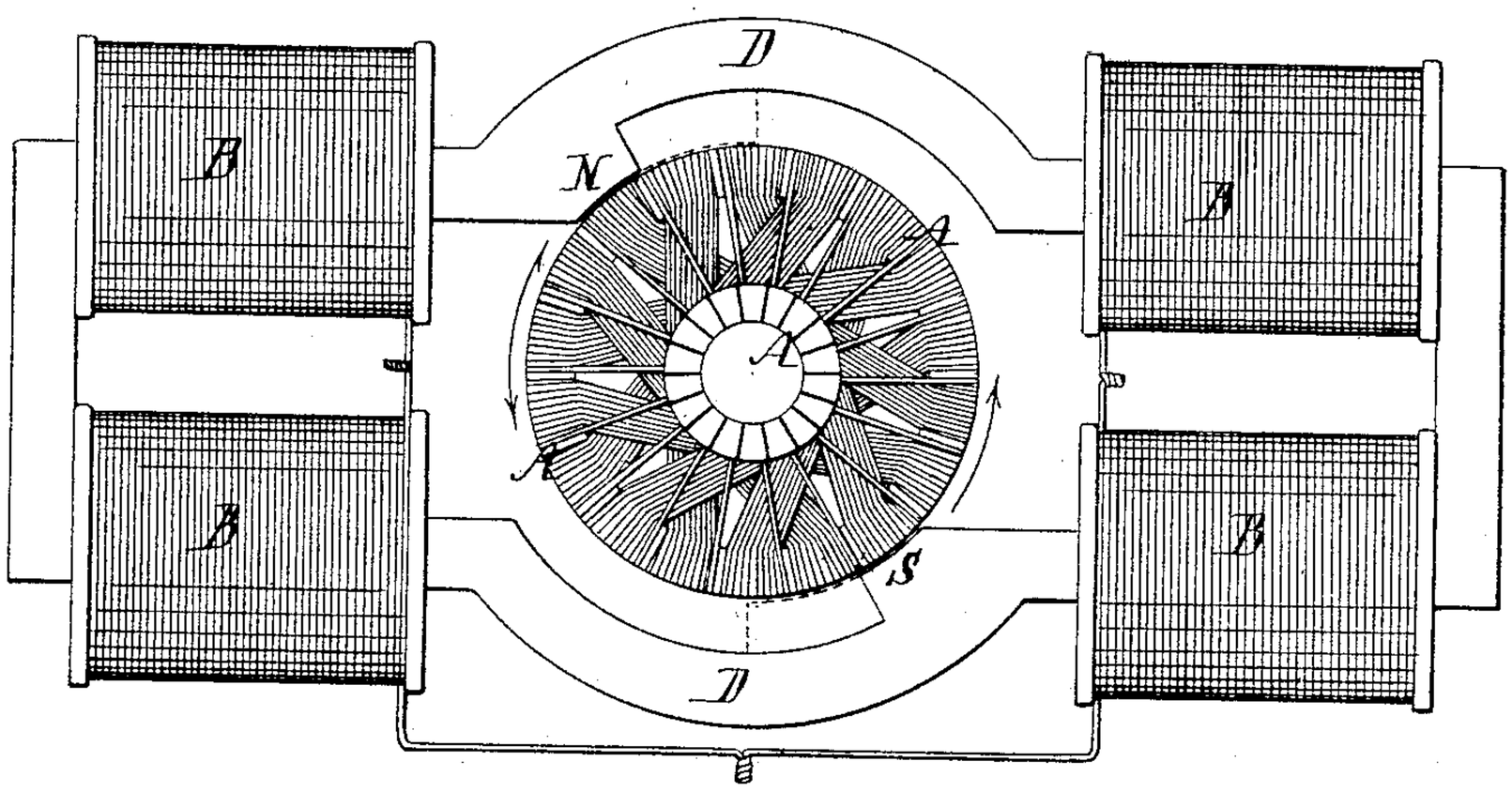
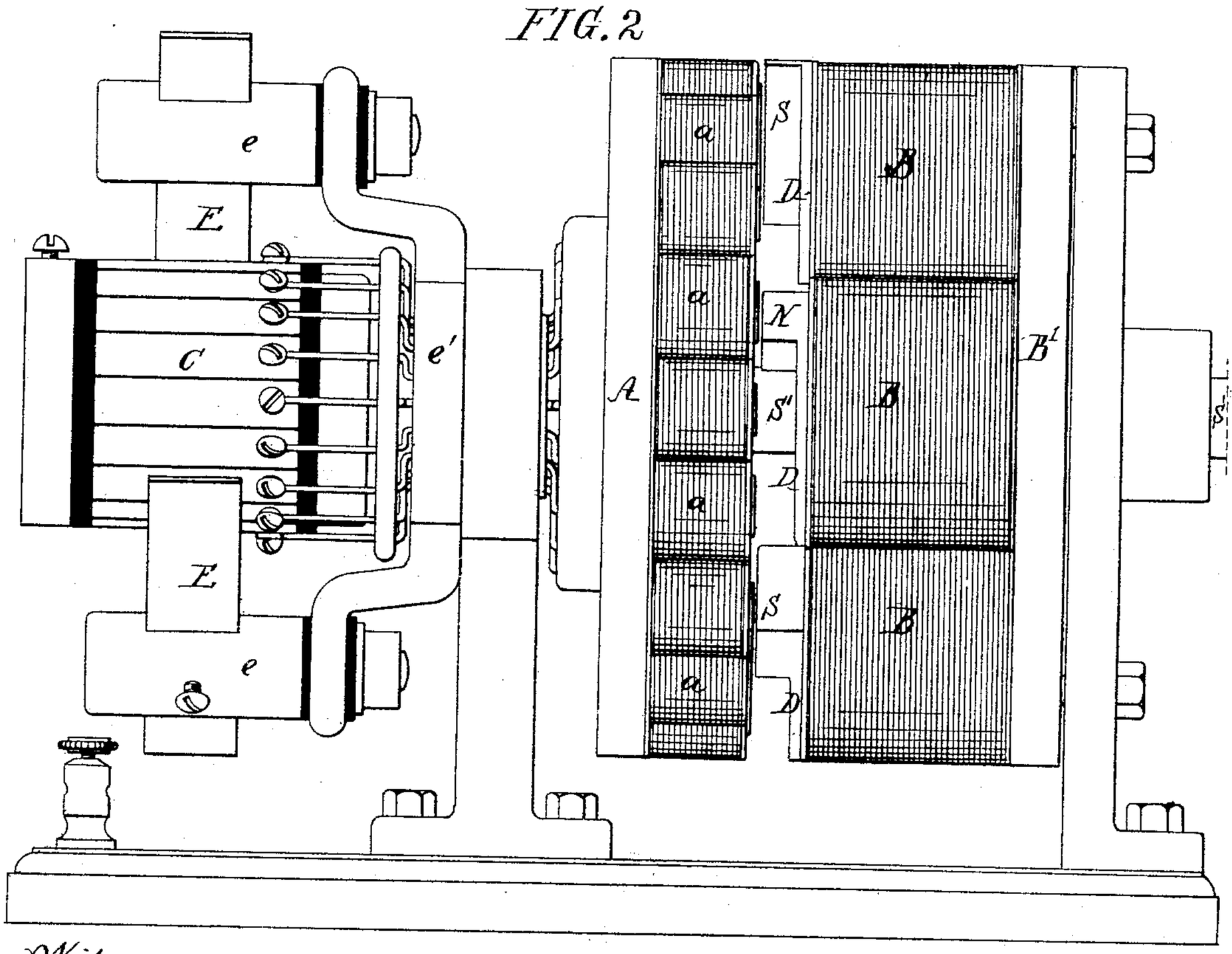


FIG. 2



Witnesses:
James F. Fobris
Harry Drury

Inventor
George W. Beardslee
by his attorneys
Howson and Sons

(No Model.)

2 Sheets—Sheet 2.

G. W. BEARDSLEE.

DYNAMO ELECTRIC MACHINE.

No. 264,227. Patented Sept. 12, 1882.

FIG. 3.

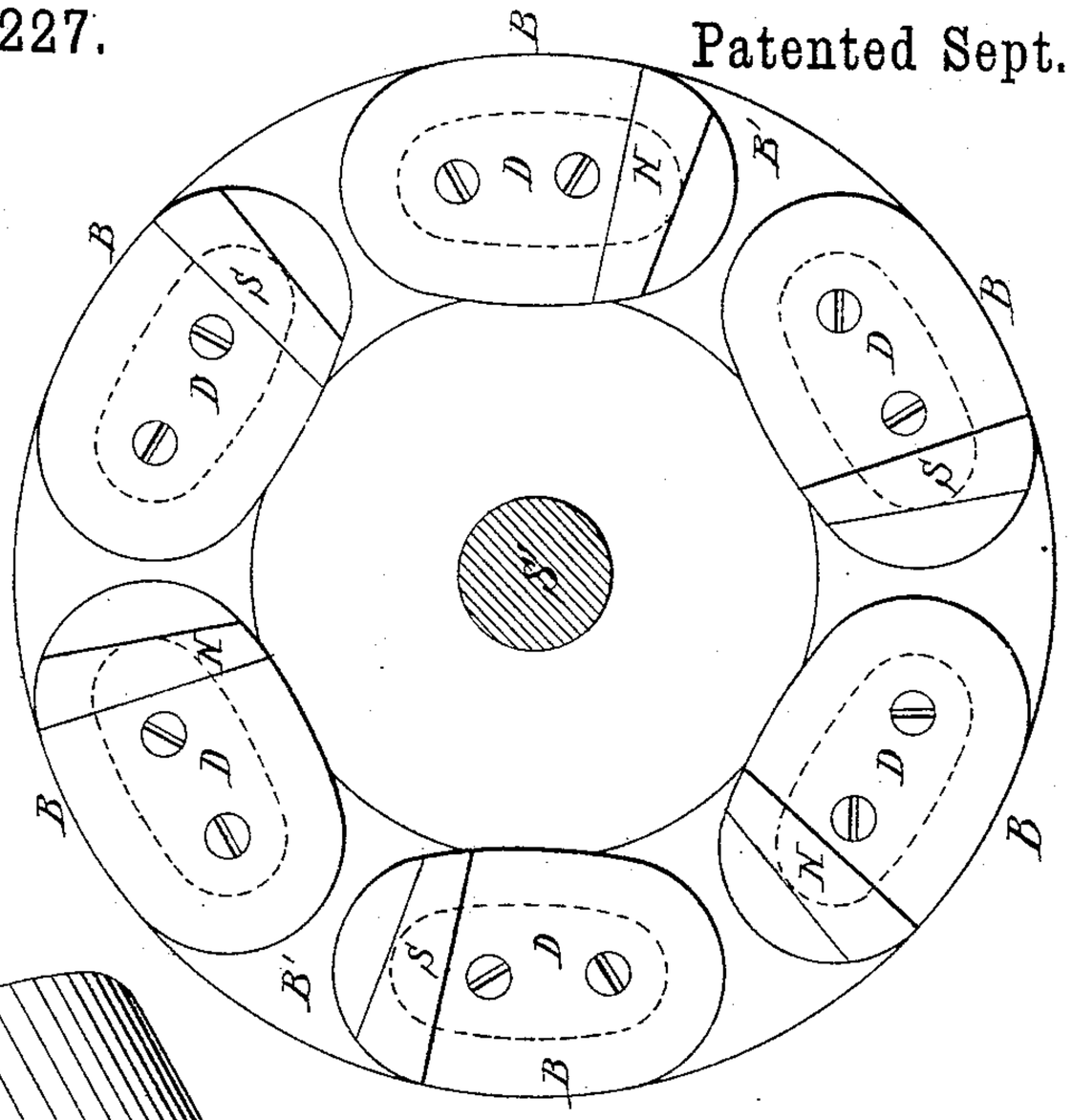


FIG. 5.

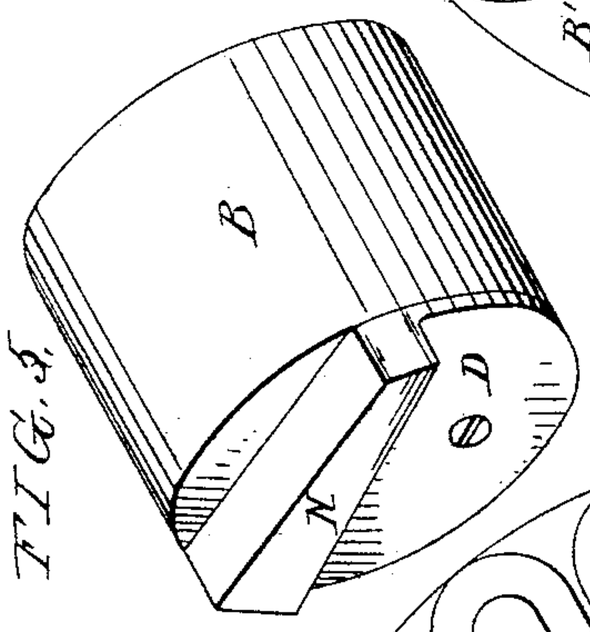
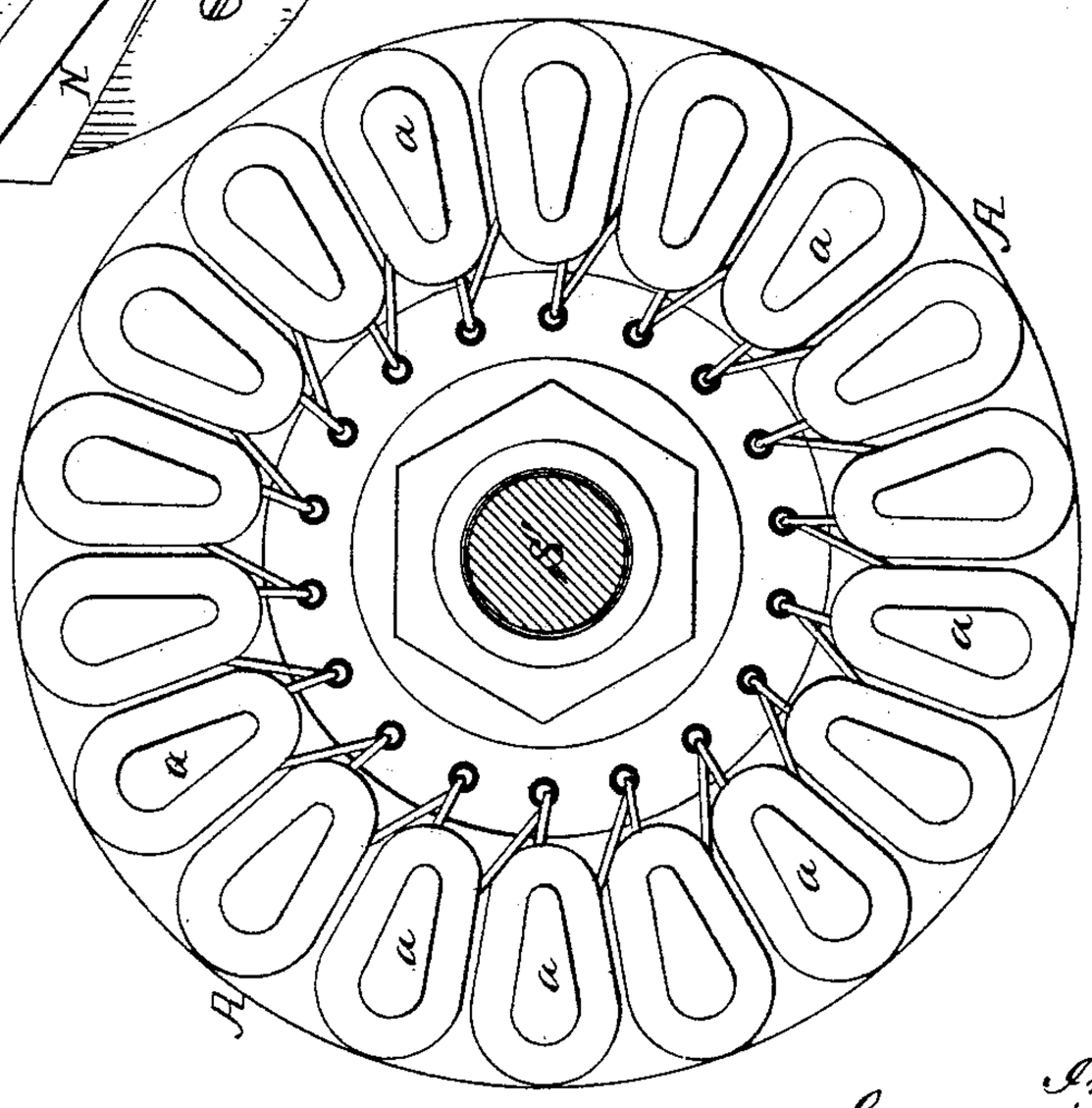


FIG. 4.



Witnesses
Harry Drury
Hubert Howson

Inventor
George W. Beardslee
by his attorneys
Howson and Sons

UNITED STATES PATENT OFFICE.

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

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 264,227, dated September 12, 1882.

Application filed May 19, 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 Dynamo-Electric Machines, of which the following is a specification.

My invention consists of certain improvements in the construction of the poles of the electro-magnets of dynamo-electric machines, as more fully described hereinafter.

My invention is applicable to any of the different forms of dynamo-electric machines now in use, and in the accompanying drawings I have shown it applied to two different styles of machines.

Figure 1 is a diagram showing its application to one form of machine; Fig. 2, a side view of another construction of dynamo-electric machine embodying my invention; Fig. 3, a view of the polar faces of the ring of field-magnets of the machine, Fig. 2; Fig. 4, a face view of the generating-wheel or armature; and Fig. 5, a perspective view of one of the electro-magnetic spools, Figs. 2 and 3, detached.

Referring to Fig. 1, A represents the rotary armature, and B B the field-magnets with their connected poles D D, between which the armature revolves. In machines of this class as ordinarily constructed the faces of the poles are brought as close as practicable to the surface of the armature throughout the entire length of the pole—that is, from the point where the revolving armature or wheel enters within the polar field of the field-magnets to the point where it leaves said polar field.

I have found that by cutting away the face of the pole from the point where the armature enters the polar field to about the center, so that the portion of the pole in close proximity to the surface of the wheel is narrowed down or contracted to about one-half on the side where the armature leaves the polar field, as indicated by dotted lines in Fig. 1, the force of the electro-magnets is concentrated to the point of exit of the revolving wheel, where the electrical impulses are most effectively produced. By thus concentrating the magnetic force at the points where the revolving wheel leaves the field of magnetism a great saving of power and increased production of electric current are obtained. By narrowing down the concentrating-poles still further to the points of exit, as shown by full lines at N S in Fig. 1, there is a still further increase in the production of the electric current and a large saving of power in driving the machine; but the face of the concentrating-pole should preferably not be narrower than the space between any two adjoining poles of the armature, so that there may be no interruption in the magnetic force when the machine is in operation. The important feature of the invention, however, is that this concentrating-pole is at the point where the armature or wheel makes its exit from the field of magnetism, or, in other words, the wheel leaves that field of magnetism entirely when it leaves the pole.

Another advantage of the construction described is that the heat generated throughout the machine is diminished in its various parts, for the heat is converted into the increased electrical current.

It will be understood that there may be any desired number of poles N S.

In the machine, Figs. 2, 3, 4, and 5, for instance, I have shown six field-magnets, B B, mounted on the face of a ring, B′, carried by the frame of the machine, and the pole D of each electro-magnet has a narrowed concentrating-pole, N, (or S,) at the point where the armature or wheel in its revolution leaves the polar field of that magnet. The armature or generating-wheel A in this case consists of a circular iron plate mounted on the shaft S′, and having a series of electro-magnets, *a a*, Fig. 4, arranged in a ring, with their poles facing the poles of the magnets B, in the usual manner, as shown in Fig. 2. The coils of these spools *a* are connected to the plates of the commutator C, which is provided with brushes E, carried by insulated pins *e*, fixed in arms *e′* on the frame.

Electric motors have been made with magnets having their acting polar faces eccentric to each other, so that as the armature revolves there is a gradual approach of the poles of the armature and magnets; but in my dynamo-electric machine there is no such action, the

approach of the poles of the field-magnets and armature being abrupt.

I claim as my invention—

A dynamo-electric machine in which an armature or generating-wheel is combined with electro-magnets whose poles have their acting faces cut away to leave an abrupt approach and contracted or narrowed to the sides where the armature or wheel leaves the fields of magnetism when the machine is in operation, substantially as described.

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,

EUGENE F. BARNES.