

(No Model.)

F. BAIN.

DYNAMO ELECTRIC MACHINE.

No. 280,708.

Patented July 3, 1883.

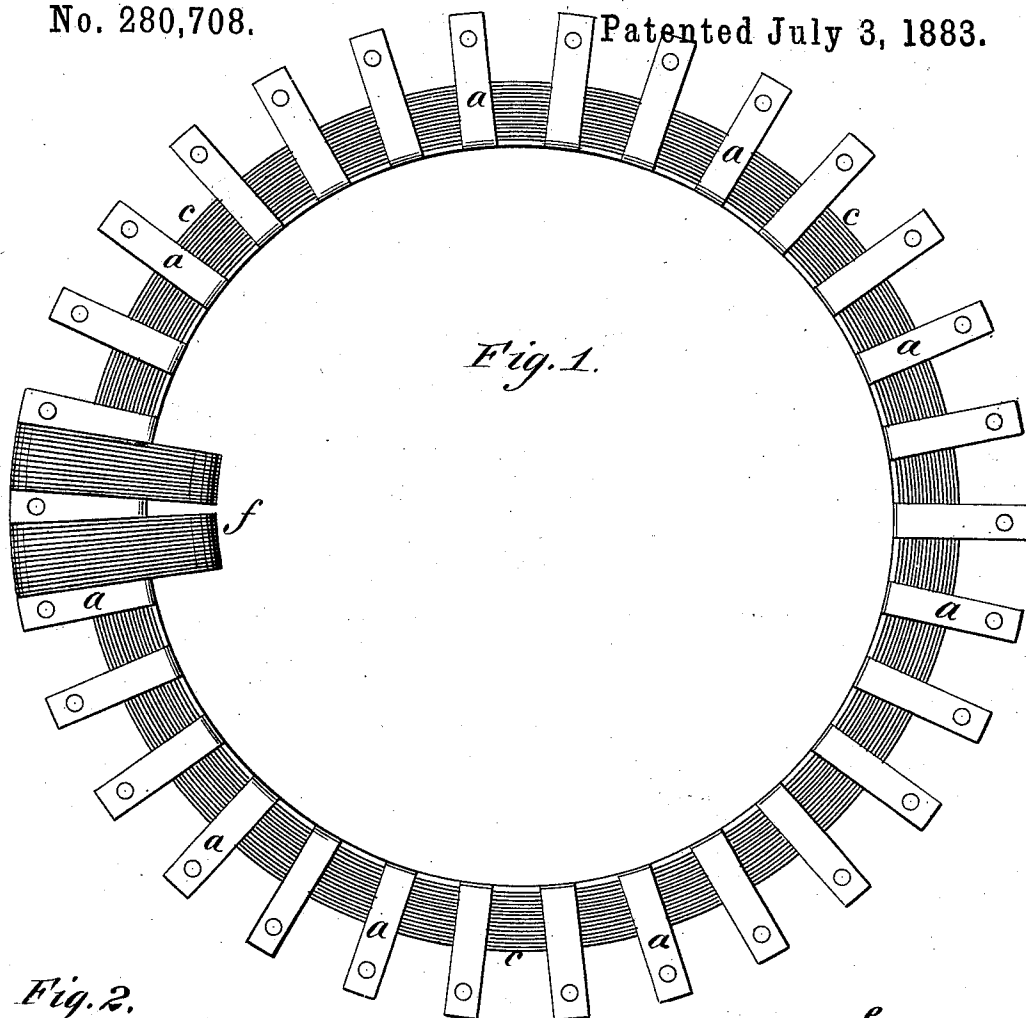
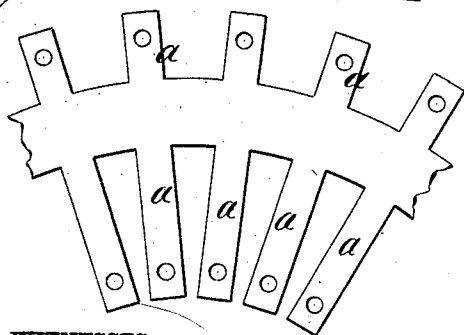


Fig. 2.



WITNESSES:

Donn Twitchell.

C. Sedgwick

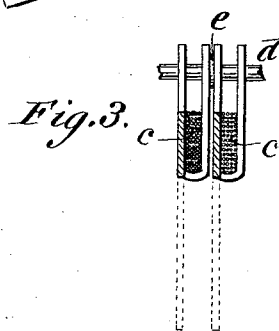


Fig. 3.

INVENTOR:

F. Bain

BY

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

FOREÉ BAIN, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO T. G. SPRINGER,
OF CHICAGO, ILLINOIS.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 280,708, dated July 3, 1883.

Application filed September 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, FOREÉ BAIN, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and Improved Armature for Dynamo-Electric Machines, of which the following is a full, clear, and exact description.

My invention relates to the construction of the armature-cores of dynamo-electric machines, the object being to prevent residual magnetism and obtain the maximum of saturation of the armature and its quick discharge.

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

Figure 1 is a side elevation of an armature-ring of my improved construction. Fig. 2 is a face view of a portion of the ring before being bent to receive the wires, and Fig. 3 is a cross-section of two rings as connected to form an armature.

In the manufacture of the cores a ring of sheet-iron is cut or stamped out in the form shown in Fig. 2—that is, with inner and outer projecting tongues, *a a*. The inner tongues are then bent outward, so as to project in the same direction as the outer tongues, and with them form polar extensions, as shown in Fig. 1, and with space between the tongues for receiving the wire, as shown in Fig. 3. The core thus formed is then wound circumferentially with annealed iron wire or ribbon, as shown at *c*. The wires or ribbons are either naked or covered with insulating material, and are held in place by the projecting tongues at each side. This ring with its polar extensions and winding of wire constitutes the core of the armature; or two or more of them may be attached together side by side, as shown in Fig. 3, strung on rods *d*, passing through the outer ends of the polar extensions, and separated by washers *e*, of insulating material. The core thus made, or before the rings are attached together, is preferably to be covered or coated with porcelain, glass, or any insulating material of a vitreous nature which is a poor

conductor of heat, so as to form a completely insulated surface on which to wind the conductor. The conducting-wire is wound upon the core in the usual manner, as shown at *f*, Fig. 1.

By this construction of armature residual magnetism is avoided, the armature will readily attain the maximum of saturation and yield quickly to changing influences, and as it rotates in close proximity to the field-magnets by virtue of the polar extensions it thereby cuts a more intense magnetic field than those fields of force in which armatures are not provided with polar projections.

By constructing the frame or sheet-metal ring with a notched periphery, or one having a series of separated tongues, I also attain an important result in respect to economy or cost of manufacture, and also reduce to a minimum both the weight of the armature as a whole and the power required to drive it at the required speed.

I am aware that it is not new to use a U-shaped iron core formed of wire wound about a guard of sheet-iron, and about this insulated conducting-wires; but

What I claim as new and of my invention is—

1. A method of forming an armature-core, which consists, first, in cutting out of sheet metal a ring with inner and outer tongues; secondly, bending the inner tongues until they are brought opposite the outer ones; thirdly, applying a vitreous coat to the outer surface; and, fourthly, winding between the tongues annealed iron wire, all substantially as described.

2. An armature-core formed of a sheet-metal ring provided with a vitreous surface coat, and having outwardly-extending opposite tongues with annealed iron wire between them, as described.

3. The improved armature-core composed of the circular skeleton-frame or ring formed of a plate of sheet metal having a series of separated tongues, *a*, on each side, and which are bent into radial position, as shown, and a layer of iron wire wound circumferentially

in the space between said tongues, as herein specified.

4. The combination of the rods *d* and wash-
ers *e* with two or more circular armature-
5 cores, each formed of a sheet-metal plate bent
into ring shape, and having series of radially-
separated tongues, *a*, between which the iron

wire *c* is laid circumferentially, each of the
rods passing through a pair of such tongues
on each ring or core, as shown and described.

FOREE BAIN.

Witnesses:

R. S. BATES,

N. F. HAWLEY.