

(No Model.)

L. DAFT.  
ARMATURE FOR DYNAMO ELECTRIC MACHINES.

No. 393,745.

Patented Dec. 4, 1888.

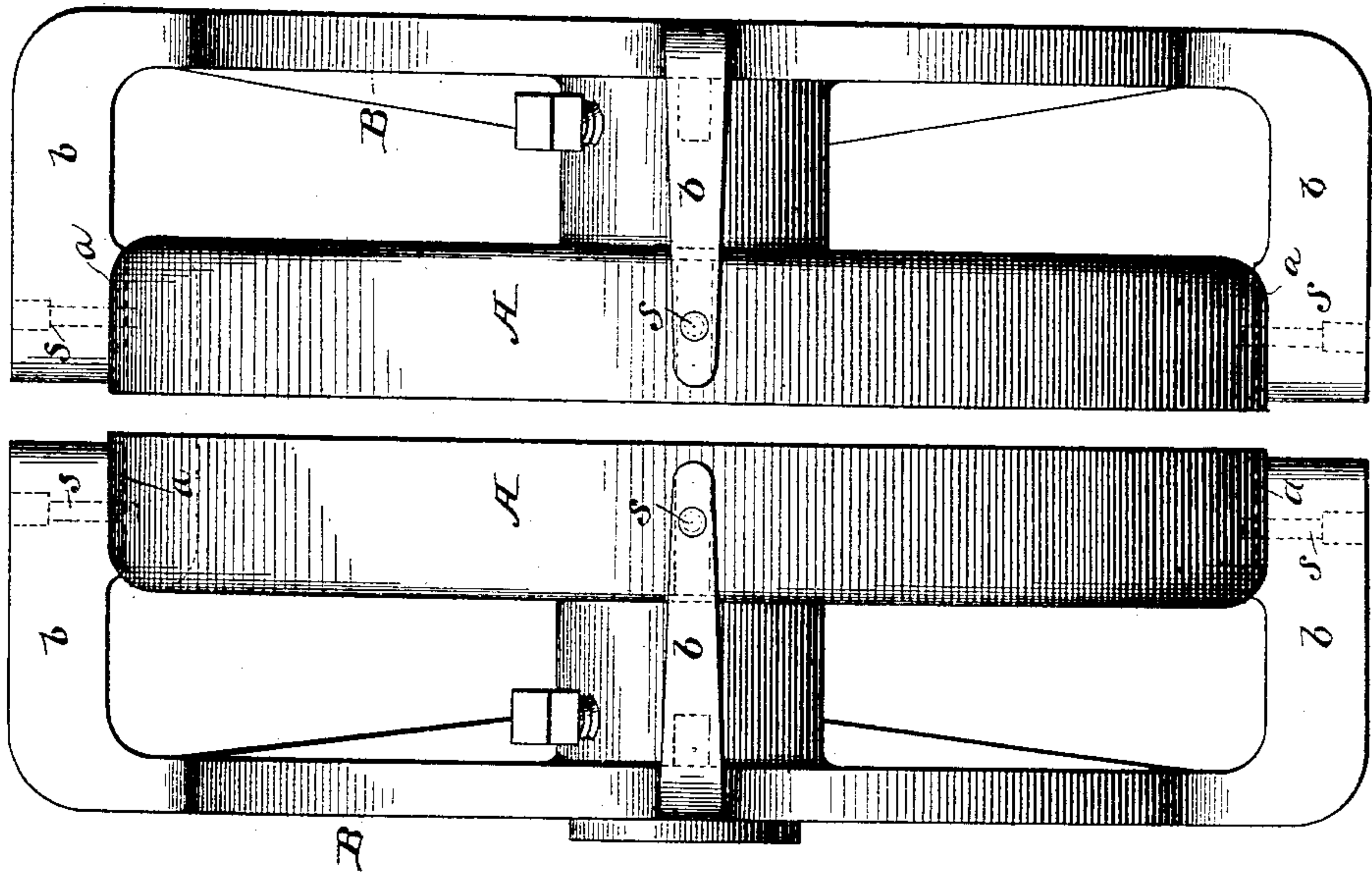


Fig. 2.

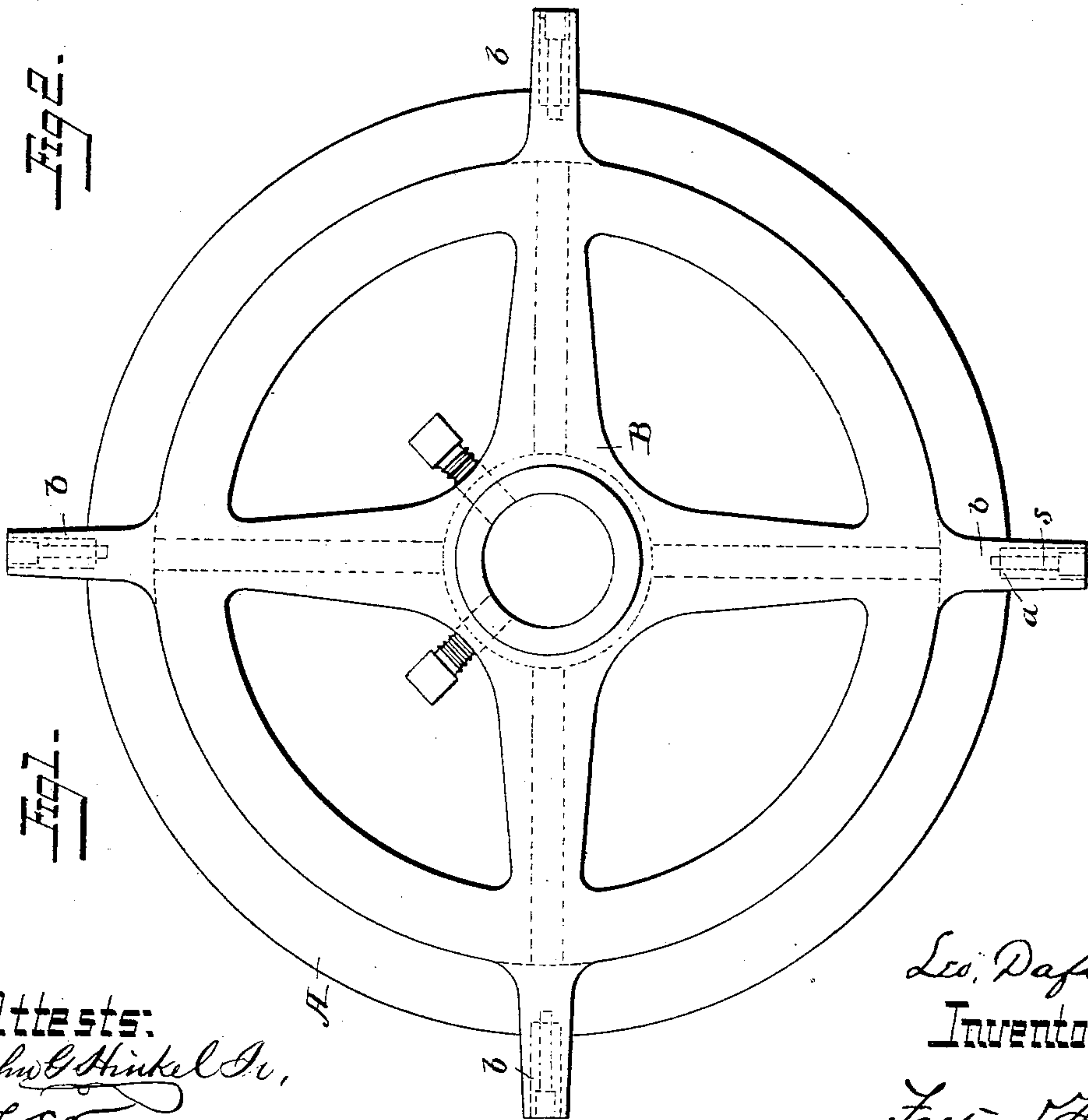


Fig. 1.

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# UNITED STATES PATENT OFFICE.

LEO DAFT, OF PLAINFIELD, NEW JERSEY.

## ARMATURE FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 393,745, dated December 4, 1888.

Application filed September 14, 1885. Renewed May 4, 1888. Serial No. 272,856. (No model.)

*To all whom it may concern:*

Be it known that I, LEO DAFT, a subject of the Queen of Great Britain, residing at Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Armatures, of which the following is a specification.

My invention relates to dynamo and magneto electric generators or motors; and it has for its object to improve the construction of the armature-cores of such machines, so as to render them mechanically strong and firm, and to provide them with a sufficient mass of solid material for the proper and rigid attachment of the supporting spider-arms, and at the same time to avoid the use of large masses of magnetic material in the ends of the core.

To these ends my invention consists of a core for electric generators or motors, constructed substantially as more particularly pointed out hereinafter.

Referring to the accompanying drawings, Figure 1 is a side view of an armature-core or so much thereof as embraces my present invention. Fig. 2 is an end view thereof.

It is a well-known fact that the presence of large masses of magnetic material in the cores of armatures for electric generators and motors is objectionable, as they tend to weaken the effect of such machines by the formation of eddy-currents or so-called "Foucault" currents, which occasion considerable loss of power as well as destructive heating of the core. Many means and devices have been proposed for obviating these objections—as, for instance, forming the body of the core of soft-iron wire, cutting slots in the body of the core, making it of thin plates or laminæ of iron, alternating with disks of paper, fiber, or other insulating material, so arranged as to diminish the eddy-currents in the body of the armature-core. In many cases the ends of the core have been formed, however, with comparatively large masses of magnetic material, in order that the core could be suitably supported or held in place; or when these have been omitted it has been found difficult to form a firm and strong mechanical connection with the body of the core, so that it may be rapidly rotated under the influence of powerful currents without derangement.

It is the object of my invention to overcome these objections, and in doing so I make use of any of the well-known forms of core-body—as, for instance, the alternating plates

of magnetic and insulating material. To this body I secure the rings A A, the thickness thereof being shown in dotted lines, Fig. 2, and which are made of a size to be sufficiently strong to properly secure and hold the body of the core and to receive the extended arms *b* of the spiders or frames B. These rings are made of some diamagnetic material, as phosphor-bronze, which is not subject to the magnetic influences, and thus while they form good mechanical supports and holders for the core they do not interfere with the magnetic action thereof or become heated under the influence of the eddy-currents.

The spiders B are formed with substantial bearings adapted to fit the shaft of the armature and to be secured thereto in any ordinary manner, as by screws, as shown, and the arms *b* are bent at an angle and fit into slots or recesses *a* in the periphery of the rings A, and are there secured by suitable means, as by screws or rivets *s*.

It will thus be seen that not only is the body of the core freed from the objectionable feature, but the large and firm rings which are necessary to hold it are also free from the magnetic action, and the spider-arms are securely connected to the rings in a thoroughly mechanical manner; and I have found that armature-cores so constructed are well adapted for continued use under severe conditions.

It is apparent that the form of the rings may be varied to suit the particular construction of the core-body without departing from the spirit of my invention.

What I claim is—

1. In an electric motor or generator, the combination, with the body of the core, of a ring of phosphor-bronze to which the core is attached, and spider-arms having laterally-projecting ends embracing the ring, substantially as described.

2. The combination, in an electric motor or generator, of the spider having arms bent at an angle, with the ring of diamagnetic material having recesses into which the arms are secured, substantially as described.

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

LEO DAFT.

Witnesses:

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