

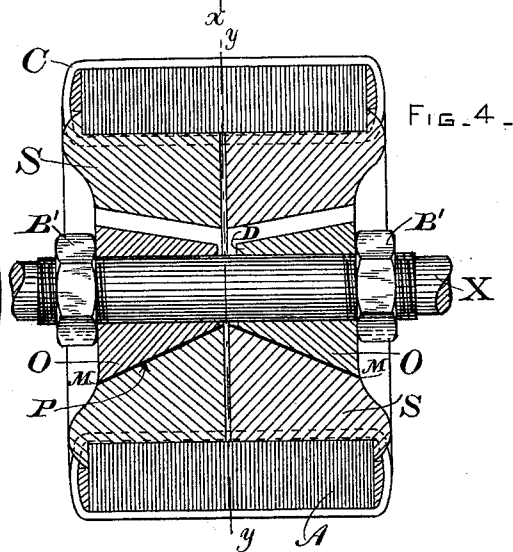
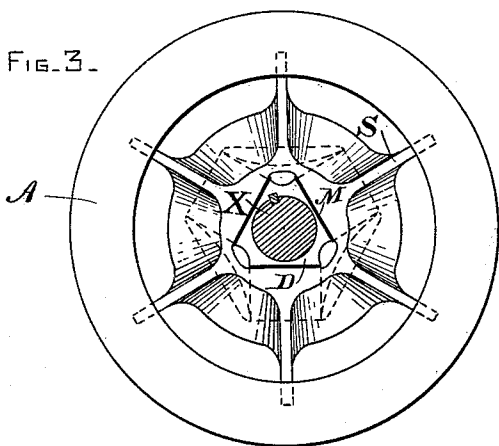
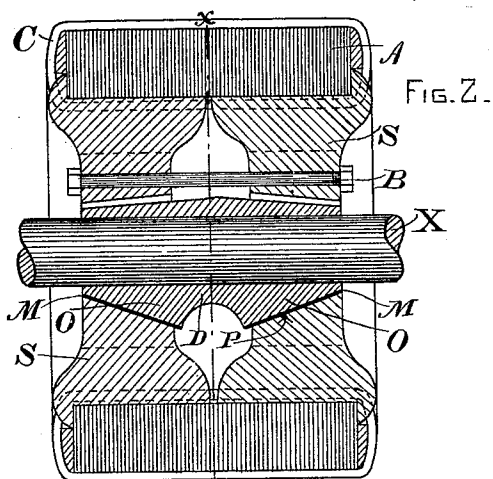
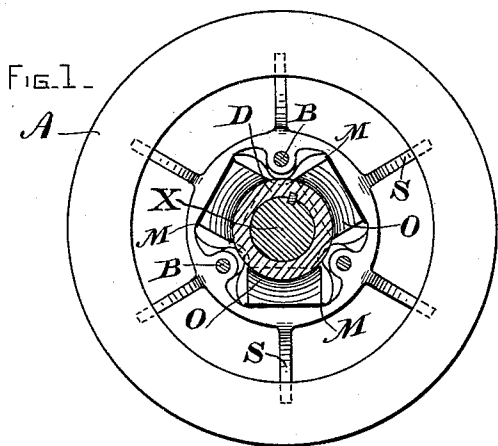
(No Model.)

E. THOMSON.

ARMATURE FOR DYNAMO ELECTRIC MACHINES.

No. 518,290.

Patented Apr. 17, 1894.



WITNESSES -

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UNITED STATES PATENT OFFICE.

ELIHU THOMSON, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO THE
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ARMATURE FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 518,290, dated April 17, 1894.

Application filed January 19, 1892. Serial No. 418,568. (No model.)

To all whom it may concern:

Be it known that I, ELIHU THOMSON, a citizen of the United States, residing at Swampscott, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Armatures for Dynamo-Electric Machines, of which the following is a specification.

My present invention relates to improvements in the construction of armatures for dynamo electric machines, whether generators or motors, consisting principally in certain means for securing the armature to the shaft so as to permit insulating the one from the other effectively, and yet making the structure solid and rigid so that it will wear well, and preserve the insulation unimpaired.

In the drawings is shown an annular armature supported by a spider made in separable sections, which fit over the armature shaft and are secured to it; and it is for such an armature as this that the invention is especially though not exclusively adapted. The shaft is provided with ribs or wings extending out radially therefrom and having substantially flat outer faces, while the spider has correspondingly shaped inner faces, so that when fitted in place the armature is supported by two, three or more flat meeting surfaces, between which layers or slabs of mica, or other indestructible insulating material, are placed when insulation of the armature from the shaft is desired.

In the accompanying drawings, Figure 1 is a sectional view of an armature taken on line *x, x*, of Fig. 2. Fig. 2 is a vertical sectional view of the same armature, and Figs. 3 and 4 are corresponding views showing an armature attached to the shaft by a somewhat different form of my invention.

The armature itself, represented in the drawings, is of a well-known construction consisting of a core body of laminated iron A, carried upon a suitable supporting spider S, and wound with coils, as indicated at C. Extending radially from the armature shaft X are ribs or wings O which preferably will be cast in one piece with a sleeve D keyed to and forming a central hub, resembling in cross section a triangle or other desired

straight sided figure. The wings may be formed in one piece with the shaft, but the construction indicated is more readily manufactured. The outer faces of these wings are substantially flat, effectually guarding against any rotation of the armature relatively to the hub, and they also are tapered or inclined in a direction parallel to the shaft, so as to prevent lateral shifting of the armature as well. In Fig. 2 the wings are highest at the center and slope to each end of the hub. The spider is made in two parts which have flat and tapering inner faces P corresponding to the wings in number and shape, and in order to insulate the armature shaft, layers of mica or other insulating material M are placed between the meeting faces. When in place, the parts of the spider are securely bound together, and locked to the hub, by bolts B.

The modification shown in Figs. 3 and 4 differs only in having the wings on the central hub taper downwardly from the ends to the center rather than in the reverse direction as in Fig. 2, and stop-nuts B' working in screw-threads on the ends of the hub are used for securing the parts of the spider in place.

Of course a greater or less number of wings may be used, but by preserving an outline such that the meeting faces between the spider and hub are substantially flat, not only is slipping of the armature prevented, but the flat sheets of insulating material are not liable to become worn or rubbed so as to destroy the insulation.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of an armature shaft having flat-faced ribs or arms forming a triangular or like irregular-shaped hub for the armature, with the spider having corresponding flat faces parallel with those on the ribs and strips or layers of indestructible insulating material disposed between the meeting faces, as set forth.

2. An armature shaft having a hub keyed or secured thereto, and provided with projecting wings forming a non-circular bearing, in combination with an annular armature having a supporting spider shaped to fit the hub and thereby attached to the shaft, as set forth.

3. An armature shaft having a hub secured thereto with flat faces tapering in a direction parallel to the shaft, in combination with the separable two-part spider shaped to fit the
5 hub, and thereby attached to the shaft, as set forth.

4. An armature shaft having a hub secured thereto tapering reversely in a direction parallel to the shaft, in combination with a two-

part spider fitting the hub and thereby secured to the shaft, and insulating material between the spider and hub, as set forth.

In witness whereof I have hereunto set my hand this 15th day of January, 1892.

ELIHU THOMSON.

Witnesses:

JOHN W. GIBBONEY,
BENJAMIN B. HULL.