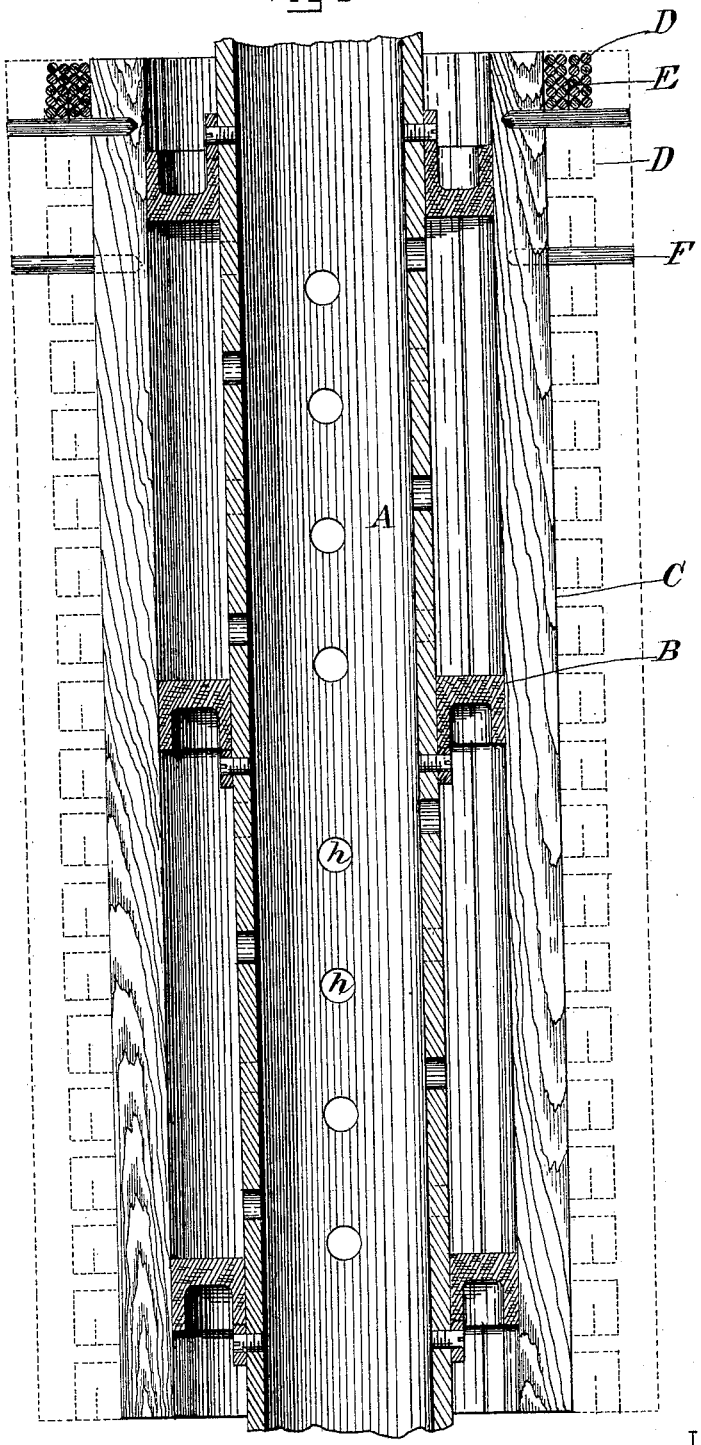
(No Model.) 2 Sheets—Sheet 1.

J. OLMSTED.

DYNAMO ELECTRIC MACHINE.

No. 303,744. Patented Aug. 19, 1884.

Fig. I



Witnesses.
L. W. Latimer.
Thos. Toomey.

Inventor.
Joseph Olmsted
By his Atty H. G. Townsend

(No Model.) 2 Sheets—Sheet 2.

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Fig: II.

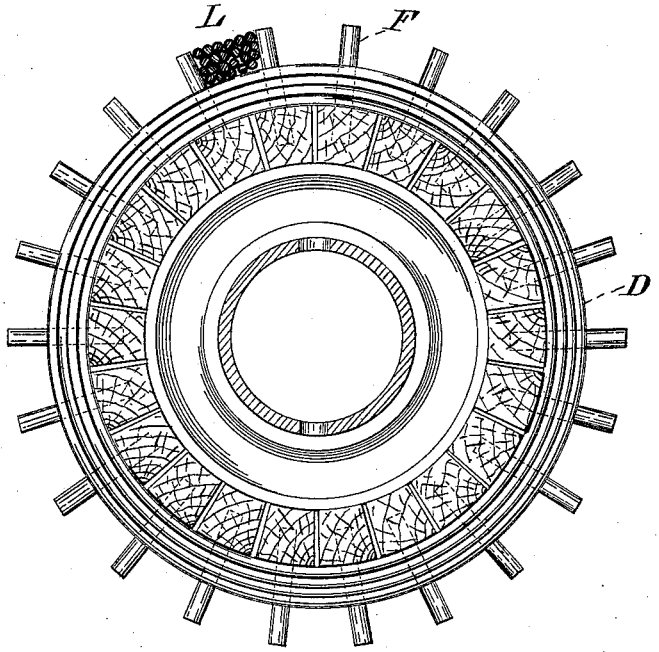
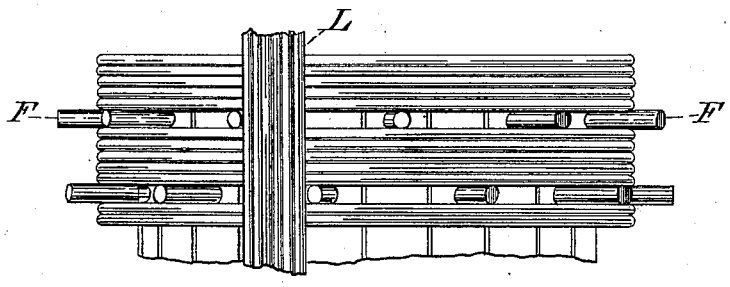


Fig: III.



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L. W. Latimer.
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Joseph Olmsted
By his Atty. H. C. Townsend

UNITED STATES PATENT OFFICE.

JOSEPH OLMSTED, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE OLMSTED ELECTRIC LIGHT AND POWER COMPANY, OF NEW YORK.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 303,744, dated August 19, 1884.

Application filed November 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH OLMSTED, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Armatures for Dynamo-Electric Machines, of which the following is a specification.

My invention relates to armatures for dynamo-electric or magneto-electric machines, and more especially to the construction of the cylindrical carrier or frame upon which the coils of cylinder-armatures are wound.

The object of my invention is to so construct the carrier as to permit the circulation of air through and between the coils, thus preventing injurious heating of said coils, and to also so form the portion of the carrier that is made of iron as to prevent the formation of so-called "Foucault currents."

To these ends my invention consists of certain novel details of construction and combinations of parts, that will be herein described in connection with the accompanying drawings, and then pointed out in the claims.

In the accompanying drawings, Figure I is a longitudinal section of an armature-carrier embodying my invention, with the armature-coils removed. Fig. II is a transverse section of the carrier at right angles to its axis. Fig. III is a top view of a portion of the armature, showing a portion of an armature-coil.

In the various figures, A indicates the armature-shaft, made hollow, and open at its ends to allow ingress of air. This shaft is to be mounted in journals in the usual way, and is provided at its central portion with perforations, (indicated at *h*,) that allow the air taken in at the ends to pass out and through the armature-coils. Secured to the shaft A are disks, rings, or supports B, made of any desired material—such as iron or brass—upon which disks are secured a series of bars or strips, C, of wood or other insulating material, placed parallel to the shaft and separated from one another by narrow spaces, as indicated in Figs. 2 and 3, so as to allow air to escape from the interior of the armature. The wooden strips as thus arranged and supported form in outline a cylinder, upon which are wound circumferentially coils of iron wire D, separated from one another by wooden pins F, which latter serve, also, to divide or space the armature-coils, one of which coils is indicated at L, Figs. 2 and 3. The iron wire D forms the iron cylinder upon which the armature-coils are wound in any of the usual ways. To prevent the circulation of Foucault currents, I insert midway between the outer and inner layers of each set of coils D a strip of insulating material (indicated at E) that extends longitudinally from one side of the coil half or approximately half way to the other side of the coil. I find by actual test that by extending the strip but a portion of the way through the coil I avoid the formation of Foucault currents in the body of the coil to a much greater extent than if the strip extends clear through the coil.

The insulation E may be arranged to partially divide the coils either longitudinally in a plane parallel to the armature-axis or in a plane transverse thereto. The dividing of the iron coils into sections by the insulating-pins F also tends to prevent the formation of the induced currents. The pins F alternate, as shown—that is, those in the same circumferential line are placed on every other strip C, and in neighboring circumferential lines break joint or alternate. The purpose of this is to leave openings between the armature-coils for the circulation of the air.

What I claim as my invention is—

1. The combination, with the hollow perforated armature-shaft, of two or more disks or supports secured thereto, and a series of longitudinal strips or bars of wood or other insulating material separated from one another by free-air spaces, and placed parallel to the armature-shaft, as described.

2. The combination of the hollow perforated armature-shaft, the two or more disks or supports, a series of bars of wood or other insulating material separated from one another and forming in outline a cylinder, and coils of iron wire wound circumferentially upon said cylinder and separated by free-air spaces.

3. The combination, with the series of separated bars or strips C, of the pins F, the cir-

cumferentially-wound coils of iron wire D, and the armature coil or coils wound between the pins F.

4. The combination, with the separated circumferentially-wound coils of iron wire D, of the insulating-strips extending partially through the same, as and for the purpose described.

5. The combination of the hollow perforated armature-shaft, the disks B, the strips C, separated from one another, the coils D, and the pins F, as and for the purpose described.

Signed at New York, in the county of New York and State of New York, this 15th day of November, A. D. 1883.

JOSEPH OLMSTED.

Witnesses:
THOS. TOOMEY,
GEO. C. COFFIN.