(No Model.)

E. WESTON.

DYNAMO ELECTRIC MACHINE.

No. 401,318. Patented Apr. 9, 1889.

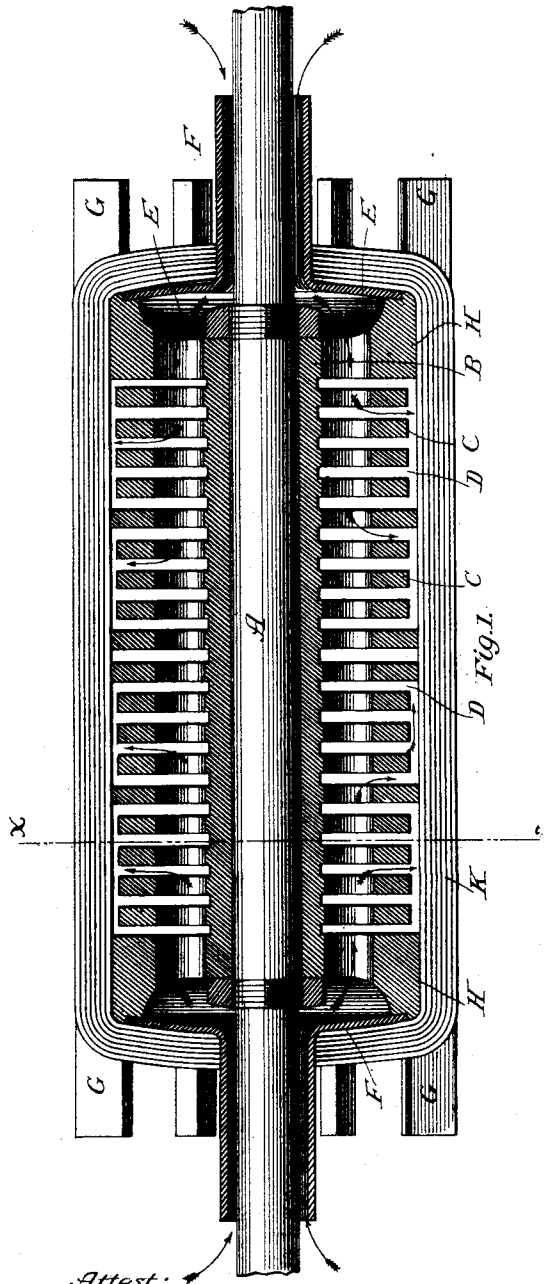


Fig. 1.

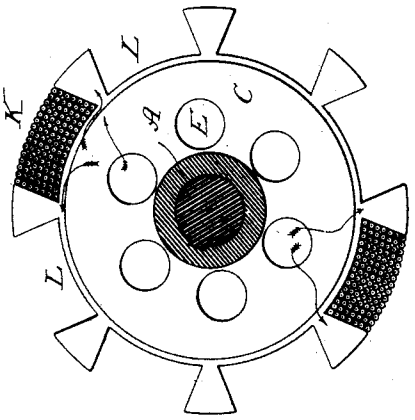


Fig. 2.

Attest:
Raymond H. Barnes.
Henry A. Beckmeyer.

Inventor:
Edward Weston
By Parker W. Page atty.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

EDWARD WESTON, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE UNITED STATES ELECTRIC LIGHTING COMPANY, OF NEW YORK, N. Y.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 401,318, dated April 9, 1889.

Application filed October 24, 1882. Serial No. 75,068. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WESTON, a subject of the Queen of Great Britain, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Dynamo-Electric Machines, of which the following is a specification, reference being had to the drawings. accompanying and forming a part of the same.

My present invention relates to the construction of armatures for dynamo-electric machines; and the object of said invention is to facilitate the circulation of air through the armatures, whereby the core and the coils or conductors wound upon the core are prevented from heating. To effect this purpose I apply the conductors or coils to the core in such manner that the former will be separated from the core, so as to leave air-spaces entirely around them.

In the drawings, where this invention is illustrated, Figure 1 is a longitudinal section of a cylindrical armature, and Fig. 2 a vertical section of the same, taken on the line *x x*.

In principle of construction the core here shown is similar to those shown and described by me in former patents, A being a shaft; B, the body of the core mounted thereon. The core is divided up into a large number of sections, C C, the whole formed from one piece or built up of a suitable number of independent disks, between which spaces D D intervene. Passages E E, parallel with the axis of rotation, are cut through the core.

The end pieces, H H, of the core B have extensions G G. Cast on and around the shaft are recesses that are covered by caps F. These latter are extended out around the shaft, forming annular spaces, through which air is drawn in.

Recesses L are cut in the ends and plates of the core, that form along the core grooves parallel with the shaft for the reception of the conductors, the recesses L in the plates or divisions, with two or three exceptions, being deeper than in the end pieces. In these recesses the conductors K, whether bundles of wires, bars of copper, insulated or bare, are laid. It will be seen that as some of the recesses are more shallow than others the conductors will be kept separate from the body of the case, and that an air-space is formed entirely around them, thus affording a free circulation for the air that by the rotation of the core is drawn in at the ends and driven by centrifugal action out through the spaces between the plates or sections C C.

Other means of raising the conductors or groups of wires from the core may be employed, as by the use of blocks of any proper substances laid at intervals in the grooves, or by making a sufficient number of the plates C, when no recesses are cut in them, of greater diameter than the rest.

It may be stated that inasmuch as the special mode of winding and connection the character of the commutator, and of the remaining portions of the machine form of themselves no part of the present invention, but are similar to those shown by me in former patents, they are not illustrated nor described herein.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the armature-core of a dynamo-electric machine, of conductors raised from the body of the core, so as to leave air-spaces between the core and the conductors, as set forth.

2. The combination, with the armature-core of a dynamo-electric machine, of conductors or coils and means for supporting each of the same so disposed that the said conductors are separated from the body of the core, a space being left entirely around them, as set forth.

3. The combination, with an armature-core having air-passages E E and spaces D D, of conductors or coils and means for supporting the same so disposed that the said conductors or coils are separated from the body of the core, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 20th day of October, 1882.

EDWARD WESTON.

Witnesses:
ALEX. P. WRIGHT,
H. A. BECKMEYER.