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PATENTED FEB. 4, 1908.

E. M. TINGLEY.
DYNAMO ELECTRIC MACHINE.
APPLICATION FILED APR. 4, 1906.

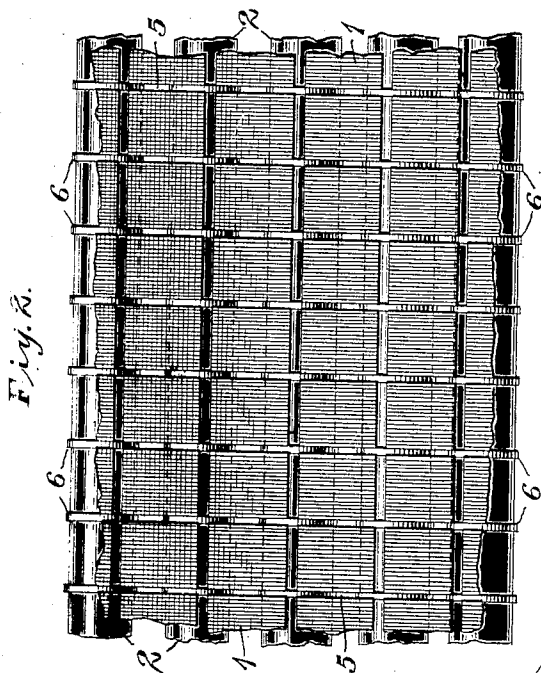


Fig. 2.

Fig. 3. Fig. 4.

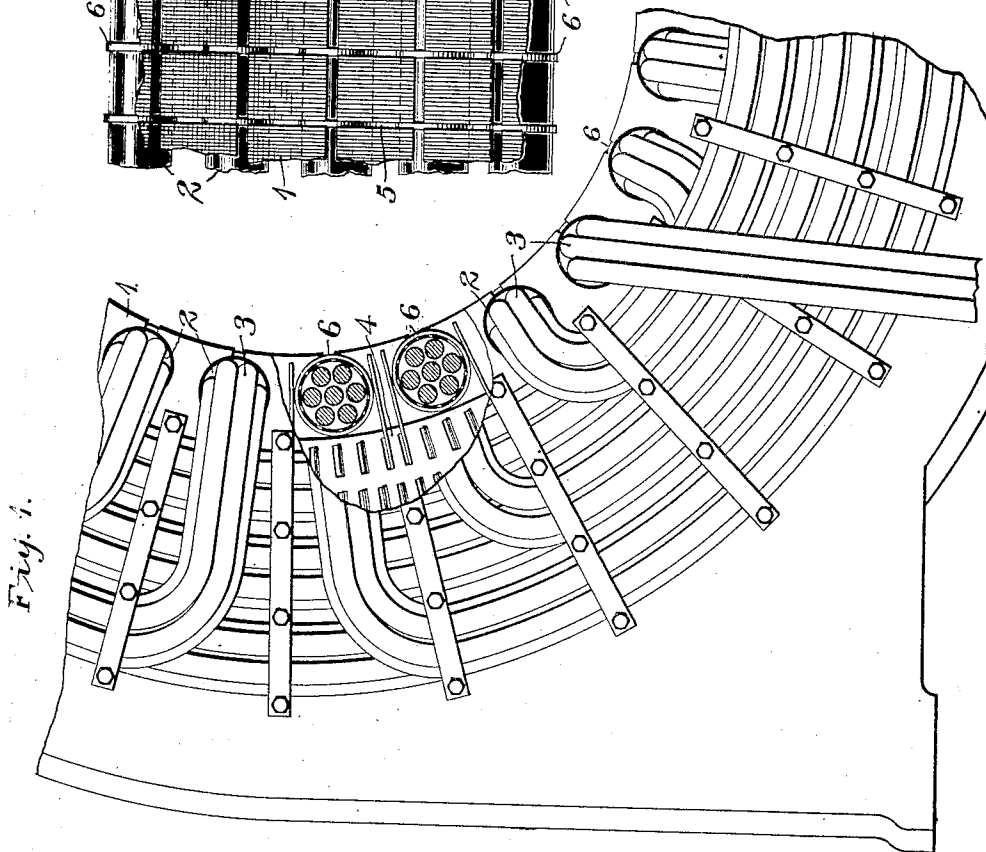
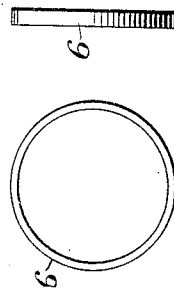


Fig. 1.

WITNESSES:

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EGBERT M. TINGLEY, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

DYNAMO-ELECTRIC MACHINE.

No. 878,165.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed April 4, 1906. Serial No. 309,908.

To all whom it may concern:

Be it known that I, EGBERT M. TINGLEY, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful improvement in Dynamo-Electric Machines, of which the following is a specification.

My invention relates to dynamo-electric machines and it has for its object to provide a simple and effective means for so supporting those portions of a laminated core structure which are adjacent to the core slots containing the winding as to avoid interference with the ventilation of the structure.

In the construction of laminated core members for dynamo-electric machines, suitable ventilating plates have usually been inserted at intervals between laminæ. These plates form spaces or openings through which the air can readily circulate. The slots in which the winding is located are often nearly closed and are located near the surface formed by the edges of the laminæ so that the portions of the laminæ which are adjacent to the small openings in the slots are easily bent out of shape. This is particularly true of such laminæ as are adjacent to the ventilating spaces.

In order to make the slots continuous without interfering with the core ventilation, I provide rings of suitable material, the openings in which correspond in size and shape to the coil-section and the thicknesses of which are commensurate with the widths of the ventilating spaces. Before the coils or tubes, which are ordinarily inserted in the core slots, are placed in position, the aforesaid rings are placed in the ventilating spaces and serve to prevent the corners of the laminæ from being bent over by the tubes.

In the accompanying drawings, Figure 1 is an end elevation, of a portion of a stationary armature embodying the spacers of my invention. Fig. 2 is a plan view, of a portion of the armature of Fig. 1 and Figs. 3 and 4 are detail views of one of the spacing rings shown in Figs. 1 and 2.

Referring to the drawings, a laminated core structure 1 of a dynamo-electric machine is provided with partially closed slots 2 in which a winding 3 is located. Ventilating plates 4 are introduced at frequent intervals between laminæ to form a series of air spaces 5. In each ventilating space and en-

circling the core slots 2 are spacing rings 6 which may preferably, but not necessarily, be constructed of non-magnetizable material, such as brass and which make the core slots continuous and support the adjacent corners of the laminæ without materially interfering with the ventilation of the core.

Although I have shown a portion of a stationary armature core having substantially cylindrical and partially closed core slots the spacing members of my invention are not restricted to such application and may be applied to either the stationary or the rotating members of various types of dynamo-electric machines, the spacing members themselves being made to conform in size and shape to the coil-sections of the winding with which they are used.

I claim as my invention:

1. In a dynamo-electric machine, the combination with a stationary frame, of a magnetizable core comprising groups of magnetizable laminæ separated by ventilating spaces and having a plurality of slots, of spacing rings which fit into said ventilating spaces and encircle said slots.

2. In a dynamo-electric machine, the combination with a magnetizable core structure having ventilating spaces and core slots substantially perpendicular to each other, of spacing rings which encircle the slots and fit into said ventilating spaces.

3. In a dynamo-electric machine, the combination with a laminated core structure having slots which are perpendicular to the planes of the laminæ, of ventilating plates located at intervals between said laminæ, and spacing members which are located in the ventilating spaces and which make the walls of the slots continuous.

4. In a dynamo-electric machine, the combination with a laminated core structure having slots for the reception of coils, of spacing members which are located at intervals between the laminæ and encircle the slots.

5. In a dynamo-electric machine, the combination with a laminated core structure having slots for the reception of coils, and ventilating plates at intervals between laminæ, of spacing members of non-magnetizable material which are located in the ventilating spaces, to conform to the shape of the slots and encircle the same.

6. In a dynamo-electric machine, the combination with a laminated core structure

having substantially cylindrical slots, and ventilating spaces between the laminae, of spacing rings which encircle the slots and are located in the spaces formed by said plates.

- 5 7. In a dynamic-electric machine, the combination with a laminated core structure having longitudinal slots and ventilating plates inserted at intervals between laminae, and a winding partially located in said slots.
- 10 of spacing members which encircle the wind-

ing coils and are located in the ventilating spaces.

In testimony whereof, I have hereunto subscribed my name this 31st day of March, 1933.

ROBERT M. TINGLEY.

Witnesses:

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