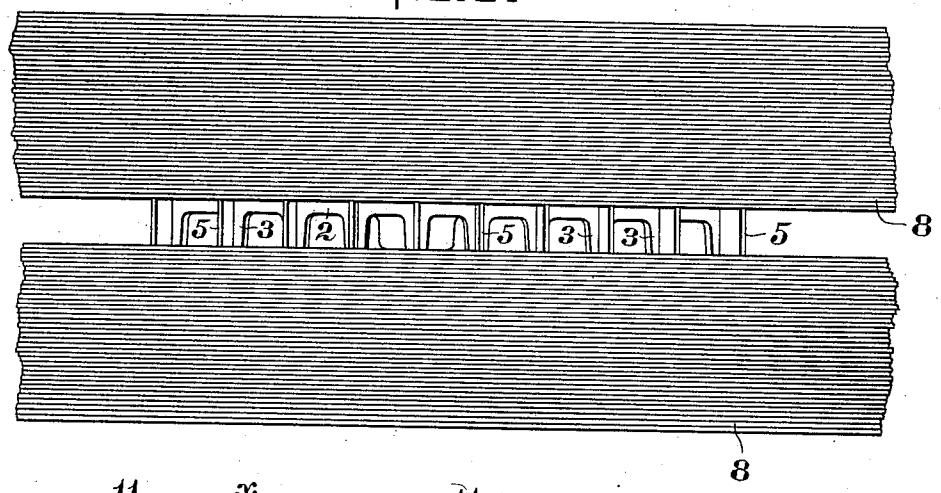
(No Model.)

H. GEISENHÖNER.

SPACE BLOCK FOR ARMATURES.

No. 577,130. Patented Feb. 16, 1897.

FIG. 1.



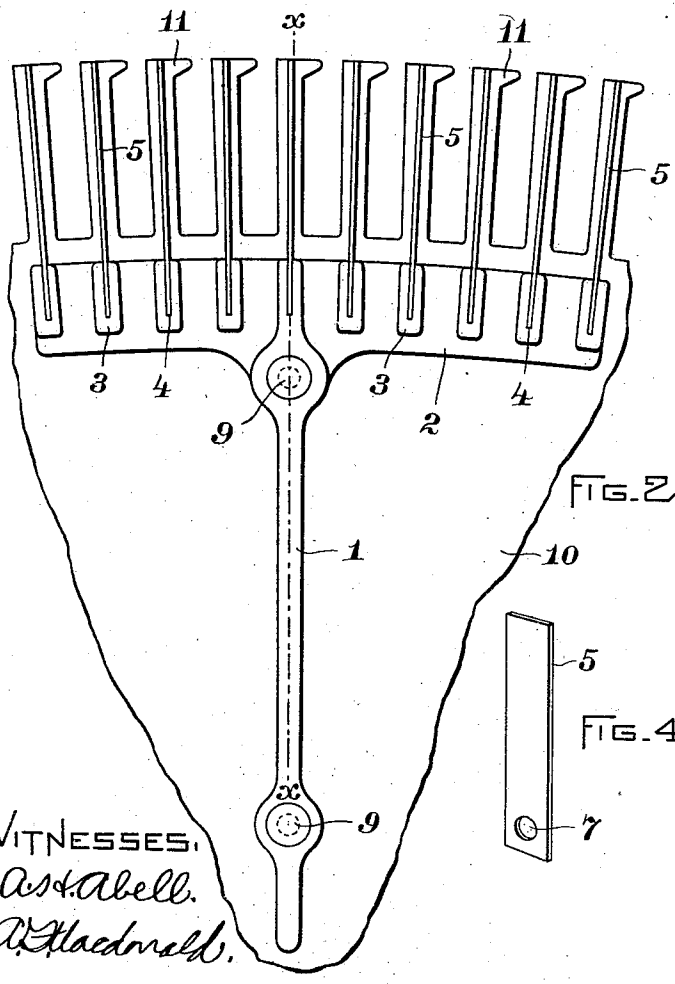


FIG. 2.

FIG. 4.

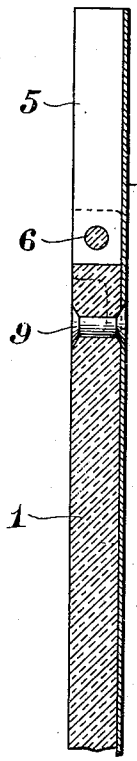


FIG. 3.

WITNESSES:
A. T. Abell.
A. Macdonald.

INVENTOR:
Henry Geisenhöner,
by Geo. R. Blodgett,
Atty.

UNITED STATES PATENT OFFICE.

HENRY GEISENHÖNER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO THE GENERAL ELECTRIC COMPANY, OF NEW YORK.

SPACE-BLOCK FOR ARMATURES.

SPECIFICATION forming part of Letters Patent No. 577,130, dated February 16, 1897.

Application filed November 20, 1896. Serial No. 612,861. (No model.)

To all whom it may concern:

Be it known that I, HENRY GEISENHÖNER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Space-Blocks for Laminated Cores, (Case No. 489,) of which the following is a specification.

This invention relates to dynamo-electric machines in which an armature-core is built up in the usual manner with annular iron laminæ in layers suitably supported upon an internal support or spider adapted for the purpose.

This invention has particular reference to improved constructions of so-called "space-blocks," a number of which are employed between each pair of sections in a substantially solid core built up in sections or bundles of laminæ of any desired thickness. These space-blocks, which are somewhat in the shape of a fork, that is, with a main portion which consists of a bar or rod with a transverse portion at one end having a number of arms or projections, are made of brass or other metal cast in the shape desired. In this construction where the space-blocks have been made of brass or other metal cast in one piece it has been found that the teeth or projections being brittle are not so durable and having a rough finish do not afford smooth surfaces for ventilation or radiation of heat. To obviate these objections and at the same time to afford a saving in time, labor, and expense in construction, the teeth or projections, in accordance with this invention, are made of thin strips of metal, and the main portion of the space-block is formed with slots in which the thin strips are securely fastened.

In the accompanying drawings, Figure 1 illustrates in plan view the location and arrangement of a space-block located between two bundles of laminæ. Fig. 2 is a side view showing a space-block constructed in accordance with this invention and applied to a toothed armature. Fig. 3 is a vertical section through the line x x of Fig. 2. Fig. 4 is a detail view of one of the teeth or projections detached from the space-block.

The space-block consists of a bar or rod 1, having at one end thereof a transverse portion 2, made of brass or other suitable metal, the whole cast in the shape shown—that is, of a T shape—and forming the main portion of the space-block. The transverse portion 2 is provided with a number of raised parts 3, projecting laterally and each provided with a slot 4. In each slot 4 is inserted one end of a tooth or projection 5 of the space-block, consisting of a thin strip of metal, as shown in Fig. 4, and secured therein by means of metal, as indicated at 6, fused through a hole 7 at one end of the tooth 5, or the tooth 5 may be secured in place in any other suitable manner. A number of these space-blocks, constructed as just described, are located between every two sections or bundles of laminæ 8, as shown in Fig. 1, and are secured to one of said bundles of laminæ by means of rivets 9, extending through the upper and lower portions of the bar 1 in rivet-holes sunk therein and through the adjacent lamina 10 of the bundle 8.

The fingers or projections of the space-blocks are radial to the center of the core, so that ventilating-spaces are provided between each two fingers or projections, as well as between the separators themselves.

In Fig. 1 a space-block is shown in connection with bundles of laminæ for a smooth-wound armature, or one having no iron projections, and in Fig. 2 a space-block is shown as applied to a toothed armature. The fingers or projections of the space-block correspond to or are in alinement with the projecting armature-teeth 11. By means of this construction the teeth or projections, being formed of thin strips of metal, are more durable than where they are cast in one piece with the main portion of the space-block, not requiring any finishing, as in the case where the entire space-block is cast in one piece, and the projections are not only stronger and cheaper in construction, but also afford smooth surfaces for the ventilation and radiation of heat. If desired, the bar or rod 1 may be omitted.

The space-block may be used in different forms of field-magnet cores and dynamo-electric machines in which cores are formed with built-up laminated structures for the purpose of ventilation.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A space-block for armature-cores, consisting of a main portion of cast metal, having recesses or seats for the teeth or projections of the space-block, and teeth or projections of strips of metal secured to said cast portion, as set forth.

2. In an armature-core a space-block consisting of a main portion of cast metal formed of a T shape, having recessed portions or seats for the teeth, and teeth formed of thin strips of sheet metal seated and secured in said seats, as set forth.

3. In an armature-core, the combination with sections built up of laminæ, of space-blocks each consisting of a main cast portion having recesses or seats for the teeth, and teeth of sheet metal secured in said recesses or seats, said space-blocks being located between said sections of built-up laminæ, and in contact with adjacent laminæ, whereby ventilating-space is afforded between the inner and outer surfaces of said core, as described.

4. In a laminated armature-core built up of sections, a space-block, comprising a main portion of cast metal secured to the outer lamina of one of said sections and teeth or projections of sheet metal extending outwardly therefrom to the adjacent section, and radial to the center of the core, whereby air-passages are afforded between the inner and outer surfaces of said core.

5. An armature consisting of layers of laminæ built up into sections or bundles, and space-blocks located between said bundles of laminæ, said space-blocks consisting of a main portion of cast metal, and teeth or projections of thin metal secured to said main cast portion, as set forth.

6. A space-block for a laminated structure, consisting of a main portion of cast metal formed with lateral projections, and teeth or projections formed of strips of sheet metal secured in said lateral projections, as set forth.

In witness whereof I have hereunto set my hand this 12th day of November, 1896.

HENRY GEISENHÖNER.

Witnesses:
B. B. HULL,
C. L. HAYNES.