No. 662,010. Patented Nov. 20, 1900.

E. W. MIX & E. F. G. H. FAURE.

SPACE BLOCK FOR ARMATURE CORES.

(Application filed Oct. 11, 1899.)

(No Model.)

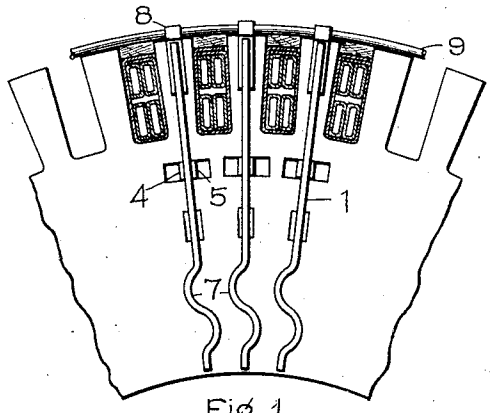


Fig. 1.

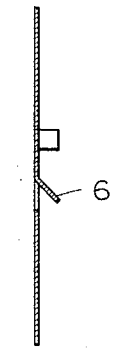


Fig. 2.

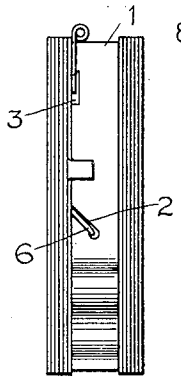


Fig. 4.

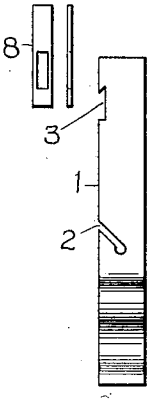


Fig. 5.



Fig. 3.

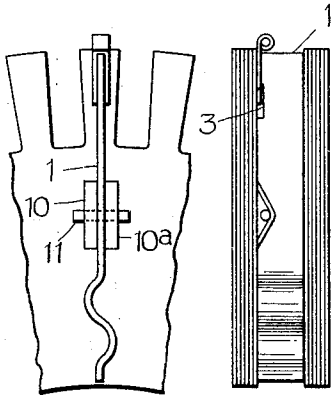


Fig. 6. Fig. 7.

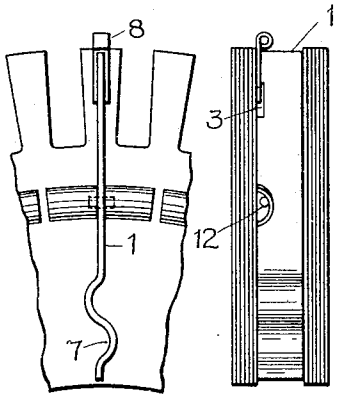


Fig. 8. Fig. 9.

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UNITED STATES PATENT OFFICE.

EDGAR W. MIX AND ELIE F. G. H. FAURE, OF PARIS, FRANCE, ASSIGNORS TO THE GENERAL ELECTRIC COMPANY, OF NEW YORK.

SPACE-BLOCK FOR ARMATURE-CORES.

SPECIFICATION forming part of Letters Patent No. 662,010, dated November 20, 1900.

Application filed October 11, 1899. Serial No. 733,253. (No model.)

To all whom it may concern:

Be it known that we, EDGAR W. MIX, a citizen of the United States of America, and ELIE F. G. H. FAURE, a citizen of the Republic of France, both residents of Paris, France, have invented certain new and useful Improvements in Space-Blocks for Armature-Cores, (Case No. 1,374,) of which the following is a specification.

This invention relates to space-blocks or distance-pieces for separating adjacent bundles of laminæ or core-plates of armatures, the object being to provide a cheap and simple construction easily applied and affording a maximum of freedom for the circulation of air.

In carrying out our invention we provide a number of punchings of sheet metal, best made of iron by reason of its cheapness, strength, and magnetic conductivity, united to one of the core-plates at the end of a bundle of laminæ by means integral with the punchings. The space-block or distance-piece is made in the form of a strip bent in an irregular or wave shape at one end and placed radially of the core-plate extending upwardly across one of its teeth. The core-plate and the space-block are punched, so that the two may be connected to form a rigid structure, with the space-block firmly supported in a plane at right angles to the plane of the core-plate. A socket may also be formed to receive the space-block by punching tongues in the core-plate and bending them up to form a steadying-socket for the space-block. At the outer end of the space-block we form a hook or other means of fastening a clip for the binding-wire wound upon the armature to prevent displacement of the coils under centrifugal thrust.

Our invention therefore comprises a space-block of sheet metal separating adjacent bundles of core-plates provided with an irregular zigzag or undulating configuration.

It comprises also a space-block of sheet metal supported between adjacent bundles of core-plates by punched or struck-up lugs upon an end core-plate.

It comprises also a fastening device for a binding-wire of an armature anchored in the core at different circumferential positions and secured to the binding-wire at such different positions, thus permitting part of such wire to be removed or repaired.

Other features of novelty will be hereinafter more specifically described, and will be definitely indicated in the claims.

In the accompanying drawings, which illustrate our invention, Figure 1 is an elevation of part of an armature, showing the arrangement of our space-blocks. Figs. 2 and 3 are detail views of part of a core-plate. Fig. 4 is a side elevation of a portion of an armature-core, showing the application of a space-block between adjacent bundles of laminæ. Fig. 5 illustrates details showing the form of punching for the space-block and for the fastening device for the binding-wire. Figs. 6 and 7 are views on planes at right angles to one another of a modified form of fastening for the space-block, and Figs. 8 and 9 are similar views of another modified fastening.

Referring first to the organization shown in Figs. 1 to 5, 1 represents a punching of sheet metal, preferably sheet-iron, provided with a slot at 2 and an undercut recess at 3, forming a hook at the top, as clearly seen in Fig. 5. In the core-plate are punched tongues 4 5, (seen in Fig. 1,) which are bent into a U shape to form a socket for receiving and steadying the edge of the space-block. An angularly-projecting tongue 6 is struck up to engage the inclined slot 2, formed in the space-block. Thus the tongues formed in the space-block and the core-plate may be interlocked by slipping the slot 2 over the tongue 6 and placing the space-block between the sides of the integral U-shaped projection 4 5. The rear end of the space-block is bent to a zigzag or wave-like form, as indicated at 7, which gives it a steady support against the core-plate and prevents twisting or buckling when the several bundles of core-plates are compressed together. On the outer end of the space-block is formed a hook 3, hereinbefore referred to, over which is placed a slotted end of a metal strip 8, the part of the space-block above the hook being cut away sufficiently to permit the strip 8 to lie snugly in the space-block, as indicated in Fig. 4. When the several bundles of core-plates are assembled and fastened together on the supporting-spider,

these fastening-strips 8 project radially from the consecutive teeth in different transverse planes along the core, and after the coils are inserted and a binding-wire 9 wound over the core the ends of the fastening-strips may be bent around the wire and soldered fast, thus affording an advantage in permitting part of the binding-wire to be removed when necessary for repairing the armature and to be again readily replaced.

In the modification shown in Figs. 6 and 7 the core-plate is punched so as to permit two bent strips of metal integral with the plate, as indicated at 10 10^a, to project on one side. These lugs form a steadying-support for the space-block, and the latter may be locked fast by pushing a pin 11 through a hole formed in the space-block after the latter has been inserted between the bent strips.

In Figs. 8 and 9 another modification is shown, in which a circular ridge arc-shaped in cross-section is pressed or spun into the core-plate, interrupted by the removal of narrow strips of metal at points opposite the center of each tooth, thus permitting the space-block to be supported by the walls of the ribs and locked in place by a wire or rivet inserted under the rib, as indicated at 12. Thus we provide an organization in which a minimum amount of room is occupied by the space-block and perfect freedom of air circulation is afforded, and the means we employ are much cheaper to construct than the cast-metal space-blocks commonly provided. At the same time a very strong construction is provided and one in which Foucault currents are not serious.

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

1. A space-block for an armature-core having sheet metal separating the armature-sections and held edge-on between the same.

2. A space-block for an armature, formed of sheet metal, supported radially on a core-plate and steadied against twisting or buckling by integral projections from said core-plate.

3. A space-block for an armature, comprising a strip of sheet metal secured between terminal core-plates of adjacent bundles of laminæ, said strip being provided with zigzag or undulating shape to provide a steady support.

4. A space-block for an armature, comprising a thin strip supported on edge and having a bearing-surface against the core-plate, the edge being laterally extended to afford a firm seat.

5. A space-block for an armature united to a core-plate by a tongue-and-groove connection integral with the space-block and core-plate respectively.

6. A space-block for an armature formed of sheet metal and having a slot cut in its edge, in combination with a core-plate having a punched tongue to engage said slot.

7. A space-block for an armature formed of sheet metal and supported between lugs struck up from a core-plate.

8. A space-block for an armature, comprising a metal strip locked to a core-plate edge-on by integral locking devices and steadied by side ribs projecting from the core-plate.

9. A space-block for an armature comprising a thin metal strip locked to a core-plate edge-on, said strip having a bearing-surface against the core-plate greater than its cross-sectional thickness.

10. A space-block for an armature-core, composed wholly of sheet metal supported edge-on against the core-plates.

11. A fastening device for an armature binding-wire locked to the core and projecting therefrom to engage with the binding-wire.

12. A fastening device for a binding-wire on an armature, comprising a flexible strip anchored in the core and projecting beyond the armature to permit securing the binding-wire.

13. A fastening device for an armature binding-wire, consisting of a strip of sheet metal locked to a core-plate and projecting radially beyond the core.

14. A fastening device for an armature binding-wire, consisting of a punched strip of sheet metal engaging a hook formed in a space-block and clamped between the space-block and the core-plate said strip projecting radially beyond the core and bent around the binding-wire.

In witness whereof we have hereunto set our hands on this 1st day of September, 1899.

EDGAR W. MIX.
ELIE F. G. H. FAURE.

Witnesses:
A. M. TANNER,
WERNER HILDEBRAND.