

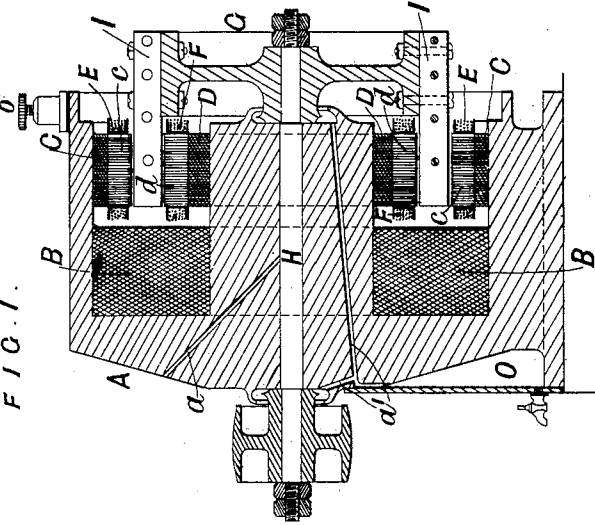
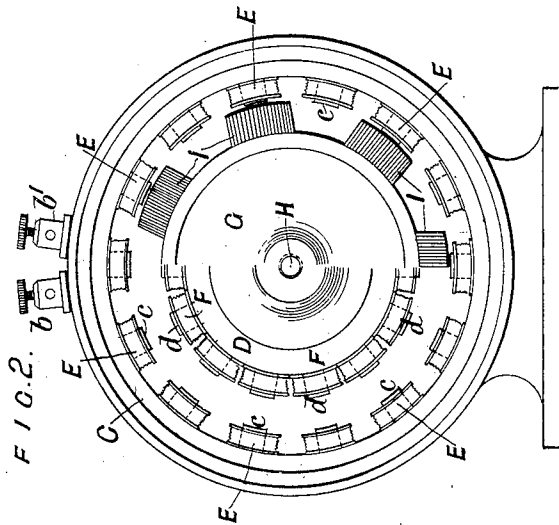
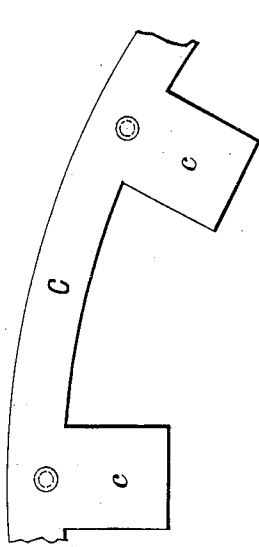
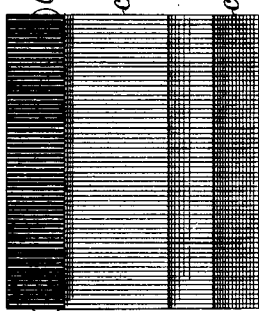
(No Model.)

L. S. M. PYKE & E. S. HARRIS.
FIELD MAGNET FOR DYNAMO ELECTRIC MACHINES.

No. 476,819.

Patented June 14, 1892.

FIG. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

LAZARUS SIMON MAGNUS PYKE AND EDWARD STEPHEN HARRIS, OF
LONDON, ENGLAND.

FIELD-MAGNET FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 476,819, dated June 14, 1892.

Application filed February 5, 1892. Serial No. 420,470. (No model.)

To all whom it may concern:

Be it known that we, LAZARUS SIMON MAGNUS PYKE and EDWARD STEPHEN HARRIS, electrical engineers and contractors, both of 34 New Tothill Street, in the city of London, England, have invented new and useful Improvements in Field-Magnets of Dynamo-Electric Machines, of which the following is a full, clear, and exact description.

10 These improvements relate to that class of alternating-current dynamo-electric machines in which the field-inducing wire consists of or acts as a single coil.

15 The improvements consist, first, in the combination, with the said coil, of a mass of magnetic metal surrounding the coil on its inner and outer circumference and on one face and extending beyond the coil at the other face, and of sets of flat annular laminæ fitting on 20 and in the cylindrical extensions of the magnetic mass, so as to form a continuation thereof, the said flat annular laminæ being formed with polar projections or extensions suitably designed, according to the class of generating 25 armature or coil to be used in connection therewith, the two sets of laminæ opposing each other and inclosing the field-coil on the open face, except at a narrow zone sufficient for the rotation between the two sets of polar 30 extensions of the armature or inductors.

Reference is to be had to the accompanying drawings, forming part of this specification, wherein—

35 Figure 1 is a vertical longitudinal section of the improved machine. Fig. 2 is an end elevation thereof, one half the inductors and their carrier being removed to show the field-magnet. Fig. 3 is a detail section and part edge view of one set of the laminated rings 40 and polar projections.

The same letters of reference indicate the same parts in all the figures.

45 A is the magnetic mass inclosing on three sides an annular space, in which is contained the field-inducing coil B, which is connected to the terminals *b b'* and supplied with current from an exciting-dynamo or other suitable source.

50 C D are the outer and inner sets of laminated rings, also placed in the said annular space

and fitting accurately within the outer and upon the inner portion of the magnetic mass A, the laminæ of each being, where necessary, held together by bolts and keyed to the magnetic mass.

55 The drawings illustrate the application of this invention to a dynamo constructed on the principle of the English Patent No. 11,503 of 1888, and in this case the said laminæ 60 provided with opposing sets of polar projections *c d*, upon which are placed spools of vulcanized fiber or other insulating material carrying the secondary coils E F, which are 65 connected with each other and the terminals, according to the effect desired.

G is the inductor-carrier, preferably of non-magnetic metal mounted at one end of the shaft H, which turns in a bearing in the magnetic mass A.

70 I are laminated inductors bolted to the carrier G and projecting into the annular space between the opposing sets of polar projections *c d*. They are equal in number to half the number of pairs of polar projections, and are equal in width to the breadth of one polar 75 projection and of the space between two consecutive polar projections.

We prefer wrought or good cast iron for the solid field-magnet A and fine soft iron for the laminæ C D. The latter may be shaped by 80 punching, cutting, or in any other convenient manner. The laminæ of each set should be rigidly fixed together and to the field-magnet, and we prefer bolts through punched holes clear of the polar projections for the former 85 and a key or keys for the latter purpose.

The field-magnet forging or casting may have feet or projections forming part of the magnetic mass and serving to form a bed-plate for fixing the machine. The shaft H has the 90 inductor-carrier at one end and the driving-pulley at the other. Its bearing in the magnetic mass A may be lubricated by means of a longitudinal groove supplied from a lubricator through an oblique duct *a*, and the ends 95 of the magnetic mass may have oil-catchers, which are drained through oil-ducts *a'* into a recess O, whence the waste oil may be drawn off by a cock.

Having now particularly described and as- 100

certained the nature of the said invention and in what manner the same is to be performed, we declare that what we claim is—

1. In a dynamo-electric machine, a field-magnet formed by the combination of an electric conductor, formed of or acting as a single coil, a single magnetizable mass surrounding the said coil on the inner and outer circumferences and on one face and extending beyond the coil at the other face, and two sets of flat rings of magnetic metal fitting in and on the prolongations of the magnetizable mass and formed so as to give projections adapted for the particular requirements desired, substantially as specified.

2. In a dynamo-electric machine, a field-magnet formed by the combination of an electric conductor formed of or acting as a single coil, a single magnetizable mass surrounding the said coil on the inner and outer circum-

ferences and on one face and extending beyond the coil at the other face, and two sets of flat rings of magnetic metal fitting in and on the prolongations of the magnetizable mass and with secondary coils on the field-magnet polar extensions, and laminated inductors adapted to revolve between the opposing pairs of polar projections, as described.

The foregoing specification of our improvements in field-magnets of dynamo-electric machines signed by us this 12th day of January, 1892.

LAZARUS SIMON MAGNUS PYKE,
EDWARD STEPHEN HARRIS.

Witnesses:

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