No. 894,144. PATENTED JULY 21, 1908.

J. HISSINK.

ROTOR FOR DYNAMOS AND ELECTROMOTORS.

APPLICATION FILED MAY 17, 1906.

2 SHEETS—SHEET 1.

Fig.1.

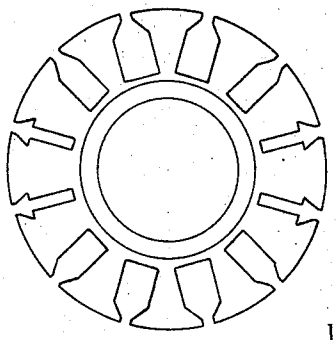


Fig.2.

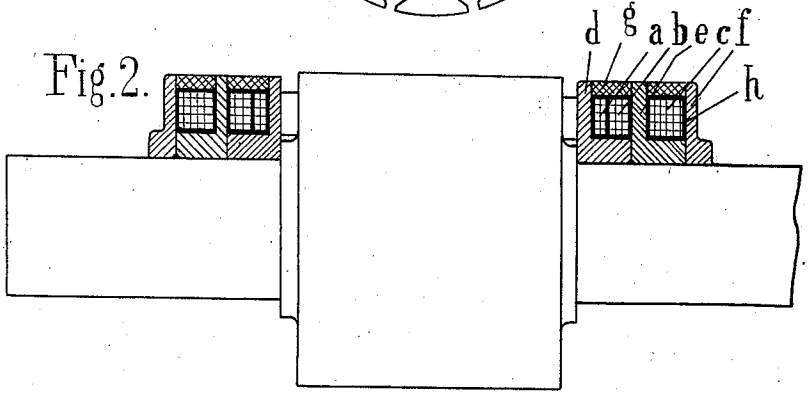
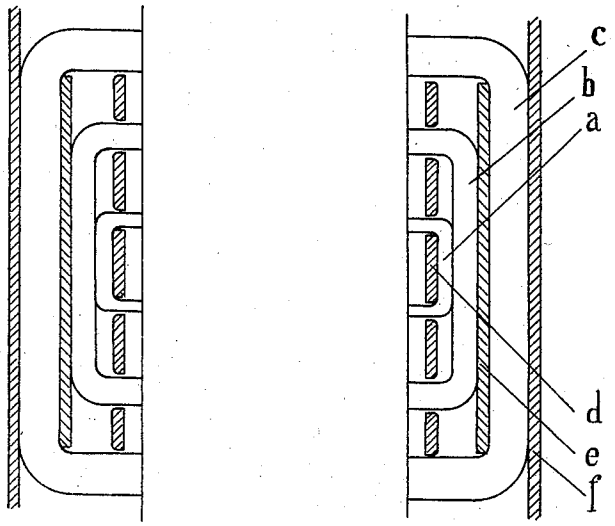


Fig.3.



Witnesses:

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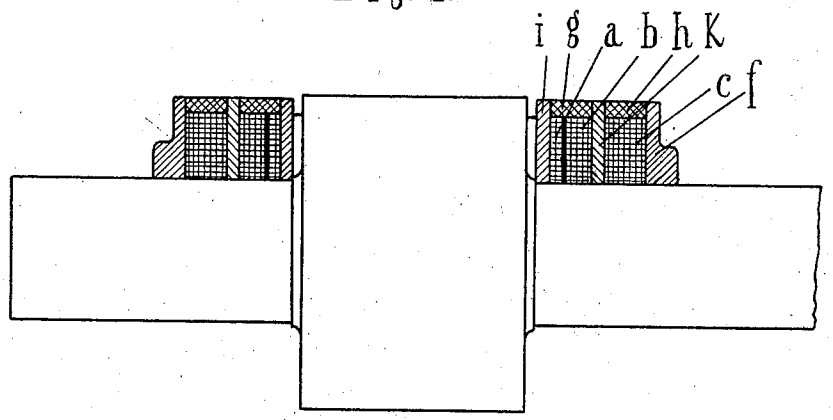
2 SHEETS—SHEET 2.

Fig. 4.



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UNITED STATES PATENT OFFICE

JACK HISSINK, OF BERLIN, GERMANY.

ROTOR FOR DYNAMOS AND ELECTROMOTORS.

No. 894,144. Specification of Letters Patent. Patented July 21, 1908.

Application filed May 17, 1906. Serial No. 317,325.

To all whom it may concern:

Be it known that I, JACK HISSINK, a subject of the Queen of Holland, and residing at No. 8 Hansa-Ufer, Berlin, Germany, have invented new and useful Improvements in Rotors for Dynamos and Electromotors, of which the following is a full, clear, and exact description.

This invention relates to improvements in rotors for dynamos and electro-motors driven at high speed, and more particularly for singlephase and polyphase current generators having revolving field-magnets. For this purpose of the present invention the projecting portions of the rotor coils are separated from each other by means of flat disks which project radially beyond the said coils. A coil of bonding wire is wound over the conductors in the channels between the projecting rims of the said disks, the said coil being, therefore, likewise sub-divided and held in position so that it cannot slip from the conductors. A rigid external support adapted to take up the centrifugal forces is thus dispensed with.

If the copper is uniformly distributed on the rotor the numbers of coils placed between adjacent disks are uniform, but if the distribution of the copper on the rotor is not uniform, the conductors between the disks are so grouped that the spaces between the latter are approximately uniform. Devices involving such distribution of the copper are covered in another application bearing the same date and Serial Number 317326, and do not form the object of the present application.

The invention is illustrated in the annexed drawing by means of an example, Figure 1 being a cross-section of the rotor-core, Fig. 2 a longitudinal section of the core and three rotor coils, and Fig. 3 a diagrammatic plan view of the projecting portions of the said coils. Fig. 4 shows a modification of the device in cross section.

As shown in Fig. 1, the rotor-slots are of uniform depth but not of uniform cross-section, the dimensions thereof being such that the distribution of the ampere-turns on the rotor follows a sine variation, and that the greatest amount of iron is provided at those parts which are traversed by the greatest number of lines of force, namely between the narrow slots, the distribution of the iron being that which is shown by calculation to be most efficient. The field coils *a b* and *c* are inserted into the rotor slots in the usual manner. At each end of the rotor-core two rings *d* and *e* of L-section are fixed side by side to the rotor shaft, the vertical flange of the ring *d* being provided with a slot for the reception of each group of conductors projecting from the end of the rotor. Certain groups of conductors also extend through slots with which the vertical flange of the ring *e* is provided, the conductors being bent around the respective rings so that they are seated on the horizontal flanges of the latter. An annular end plate *f* is fixed to the ring *e* to afford lateral support to the conductors placed on the said ring. In the example illustrated the distribution of the copper on the rotor is not uniform, and consequently the conductors at either end of the rotor do not project uniformly from the latter. The conductors outside the rotor are, therefore, so grouped that the amount of space required therefor at either side of the vertical flange of the ring *e* is approximately uniform. For this purpose the external parts of the coils *a* and *b* are placed together on the ring *d* and thus separated from the external portion of the coil *c* placed on the ring *e*.

Over the conductors on the ring *d* and *e*, and between the projecting rims of the said rings and the plate *f*, coils of wire *g* and *h* are wound to form bonds, so that the whole bandage *g h* for the field coils *a b c* is divided into two parts by the vertical flange of the ring *e*, so that lateral displacement thereof is prevented.

It is obvious that instead of using rings of angular cross-section, with a horizontal flange for seating the conductors, the groups of conductors can be directly seated on the rotor shaft and separated from each other by flat slotted rings as at *i* and *k* in Fig. 4.

I claim as my invention:—

1. In a rotor for a dynamo or electromotor the combination of a rotor core, groups of rotor-conductors, projecting from the ends of the rotor core, separating rings, radially projecting beyond said conductors and bonding wires, being wound on the said conductors between the projecting rims of the said rings.

2. In a rotor for a dynamo or electromotor the combination of a rotor core, groups of rotor conductors, projecting from the ends of the rotor core, separating rings, radially projecting beyond said conductors, and bonding wires, being wound on the said conductors between the projecting rims of the said rings,

flanges, mounted on the said rings, on which flanges the said conductors are seated.

3. In a rotor for a dynamo or electromotor, the combination of a rotor core, having slots of uniform depth but of varying cross-sectional area, a series of field coils in the said slots, such field coils projecting from the ends of the rotor core, separating disks, radially projecting beyond said field-coils, bonding wires, being wound on the said field-coils between the projecting rims of the said rings, flanges, mounted on the said rings, on which flanges the said conductors are seated, a plate, fixed to the foremost of the rings for supporting the field coils, substantially as described and shown in the drawing.

In testimony whereof I affix my signature in the presence of two witnesses.

JACK HISSINK.

Witnesses:

WOLDEMAR HAUPT,

HENRY HASPER.