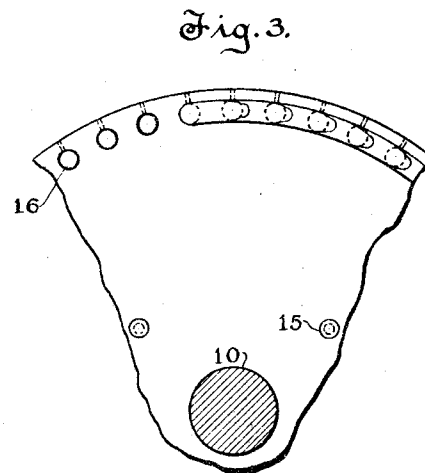
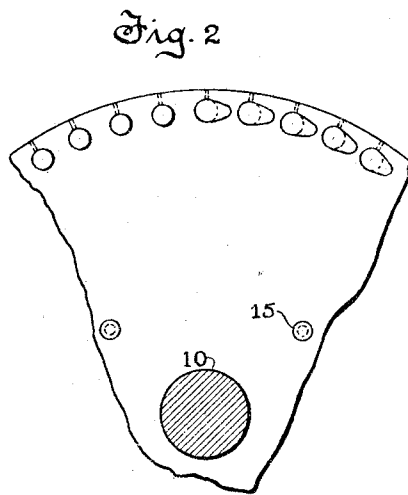
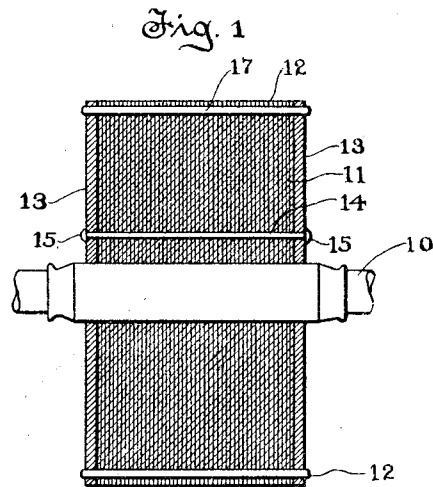


E. R. KNIGHT.
DYNAMO ELECTRIC MACHINE.
APPLICATION FILED JUNE 7, 1909.

1,065,532.

Patented June 24, 1913.



Witnesses
John L. Johnson
Chas. L. Byron.

Inventor
Earle R. Knight
By Chas. E. Lord
Attorney

UNITED STATES PATENT OFFICE.

EARLE R. KNIGHT, OF NORWOOD, OHIO, ASSIGNOR TO ALLIS-CHALMERS COMPANY,
A CORPORATION OF NEW JERSEY.

DYNAMO-ELECTRIC MACHINE.

1,065,532.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed June 7, 1909. Serial No. 590,655.

To all whom it may concern:

Be it known that I, EARLE R. KNIGHT, a citizen of the United States, residing at Norwood, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Dynamo-Electric Machines, of which the following is a full, clear, and exact specification.

My invention relates to the construction of dynamo-electric machines, and particularly to induction motors of the squirrel cage type.

It is important in the manufacture of machinery to construct machines which are as simple and light as possible, at the same time making them compact and reliable and spending the minimum amount of time. In building motors of the squirrel cage type, a great deal of time is spent on detail work, such as riveting or securing the rotor conductors, to short-circuiting rings, and it is the object of this invention to simplify the construction of these machines, minimizing the amount of time occupied in building the same.

My invention consists in certain novel details of construction and arrangement of parts which will be described in the specification and set forth in the appended claims. In the accompanying drawings, Figure 1 is a sectional view of the rotary member of a squirrel cage induction motor embodying my invention; Fig. 2 is a fragmentary view of the rotary member showing the projecting ends of the conductors bent over; and Fig. 3 is a view similar to that illustrated in Fig. 2 showing the projecting ends of the conductors overlapping adjacent conductors.

Referring to the figures of the drawings, 10 represents a shaft upon which is mounted a core 11, which is preferably laminated and provided with slots 12. The core comprising laminæ is first built up on a mandrel, and short-circuiting rings 13 are clamped to either end of the core by bolts 14 which pass through the core and are riveted as shown at 15. The core and short-circuiting rings, as a unit, are then pressed on the shaft 10. These short-circuiting rings are provided with a plurality of apertures 16 for the reception of rotor conductors 17 which occupy the slots in the core. The conductors are cut sufficiently long to permit the ends of the same to project beyond the short-circuiting rings a considerable amount. The rotary

member is then made to rotate and a cup-shaped tool is brought into contact with the projecting ends of the conductors, thus wiping, pushing over, or bending them. The tool is fed in gradually until the projecting ends of the conductors are wiped or forced over against the short-circuiting rings making good electrical contacts and secure mechanical fastenings between the short-circuiting rings and the rotor conductors.

In a modification shown in Fig. 3 the projecting ends of the conductors are wiped or forced into contact with adjacent conductors. This overlapping of the conductors may be followed out to the extent that a solid ring would be formed in which it would be impossible to notice any joints. It is to be noted that the apertures 16 in the short-circuiting rings are not opened at the top, thus avoiding any tendency of the outer part of the short-circuiting ring to spread to permit the rotor conductors to become loosened. This construction is particularly adapted for motors of small capacity and is very simple and effective and can be applied to the stator as well as the rotor.

There may be many modifications of the precise arrangement here shown and described, and I aim in my claims to cover all such modifications which do not involve a departure from the spirit and scope of my invention.

What I claim as new is:

1. In a dynamo-electric machine, the combination of a laminated core, a support for said core provided with open slots at its periphery, short-circuiting rings secured to the end laminations of said core and provided with closed slots aligned with the slots of the core, and conductors carried by said core and extending through and engaging said short-circuiting rings, the complete end portions of adjacent conductors being wiped or bent over in the same direction.

2. In a dynamo-electric machine, the combination of a laminated core having open slots, short-circuiting rings secured to the end laminæ of said core and provided with closed slots in line with the slots of the core, and conductors located in said slots and having projecting end portions engaging said short-circuiting rings, the complete projecting end portion of said conductors being wiped or bent over in the same direction to overlap the projecting end portions of

adjacent conductors to form a complete circuit through said end portions.

3. In a dynamo-electric machine, the combination of a laminated core having open slots, short-circuiting rings secured to the end laminæ of said core and provided with slots in alinement with the slots of the core, and conductors carried by said core and extending through the slots in the short-circuiting rings, the slots in the short-circuiting rings being formed to prevent radial displacement of the conductors, projecting end portions of said conductors being wiped or bent over in the same direction into engagement with the outer side of each short-circuiting ring.

4. In a dynamo-electric machine, the combination of a laminated core having open slots, short-circuiting rings secured to the end laminæ of said core and provided with slots in alinement with slots of the core, and conductors carried by said core and extending through the slots in the end short-circuiting rings, the slots in the end rings being formed to prevent radial displacement of the conductors, projecting end portions of said conductors being wiped or bent over in the same direction to overlap the projecting end portions of the adjacent conductors to form a complete circuit through said end portions.

5. In a dynamo-electric machine, the com-

bination of a laminated core having slots, short-circuiting rings secured to the end laminæ of said core and provided with slots in alinement with the slots of the core, and conductors carried by said core and extending through the slots in the short-circuiting rings, the slots in the short-circuiting rings being formed to prevent radial displacement of the conductors, projecting end portions of said conductors being wiped or bent over in the same direction into engagement with the outer side of each short-circuiting ring.

6. In a dynamo-electric machine, the combination of a laminated core having slots, short-circuiting rings secured to the end laminæ of said core and provided with slots in alinement with the slots of the core, and conductors carried by said core and extending through the slots in the short-circuiting rings, the slots in one of said parts being so formed as to prevent radial displacement of the conductors, projecting end portions of said conductors being wiped or bent over in the same direction into engagement with the outer side of each short-circuiting ring.

Milwaukee, Wis., May 20, 1909.

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

EARLE R. KNIGHT.

Witnesses:

HARRY F. THOMPSON,
GEO. M. SCHULTE.