

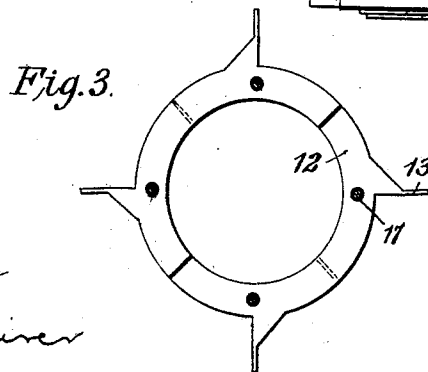
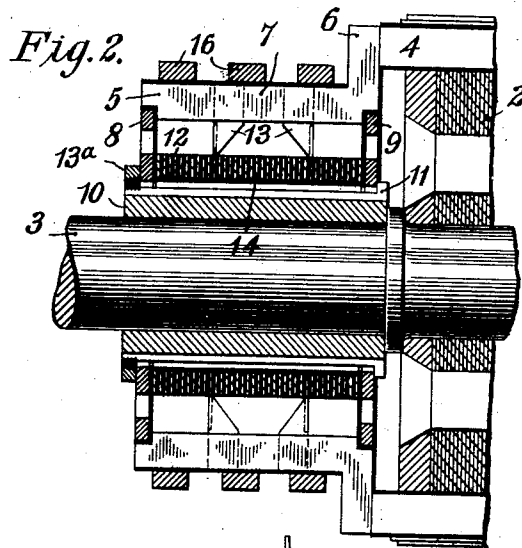
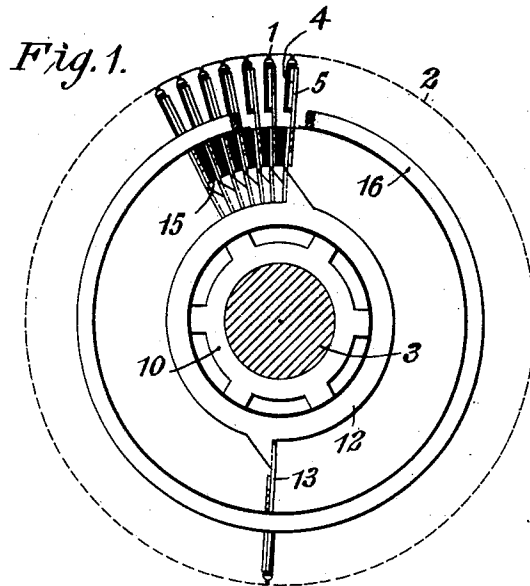
No. 865,219.

M. WALKER.

PATENTED SEPT. 3, 1907.

END CONNECTION FOR CONDUCTORS ON FIELD MAGNETS OF ALTERNATE
CURRENT GENERATORS.

APPLICATION FILED JULY 13, 1907.



WITNESSES:

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END CONNECTION FOR CONDUCTORS ON FIELD-MAGNETS OF ALTERNATE-CURRENT GENERATORS.

No. 865,219.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed July 13, 1907. Serial No. 383,658.

To all whom it may concern:

Be it known that I, MILES WALKER, a subject of the King of Great Britain, and a resident of Hale, Altrincham; in the county of Cheshire, England, have invented a new and useful Improvement in End Connections for Conductors on Field-Magnets of Alternate-Current Generators, of which the following is a specification.

This invention is an improvement upon the type of end connectors set forth in my application Serial No. 263,772, filed June 5, 1905, and employed on the rotating part of a dynamo-electric machine intended for operation at very high speeds. The end connectors for the winding shown in the said application consisted of copper rings mounted concentric with the shaft and connected to the ends of the conductors that project from the slots in the magnetizable core, the arrangement being such that the center of gravity of the structure lay in the center of the shaft.

The object in view was to produce an end connector which would be dynamically balanced in itself, and which could be rotated at a high speed without requiring particularly strong supports.

In applying this invention to large turbo-generator field magnets, it has been found uneconomical and therefore undesirable to make the rings as large, or nearly as large, in diameter as the field magnet, as shown in said application, and for this reason I have adopted the arrangement of connectors herein shown and described.

Figure 1 of the accompanying drawing is a view, partially in end elevation and partially in section, of the rotatable member of a two-pole dynamo-electric machine that embodies my invention. Fig. 2 is a transverse sectional view on the line II—II of Fig. 1, and Fig. 3 is a face view of connectors employed in a modification of the machine of Figs. 1 and 2.

Projecting slightly from longitudinal peripheral slots provided at 1 in a laminated field structure 2 that is mounted upon a shaft 3, are conductors 4 of the magnetizing winding for the field magnet, and connected to the projecting ends of the conductors 4 are a corresponding number of conducting bars 5 resembling, in external appearance, the segments of the commutator of a direct current dynamo-electric machine, in that they comprise a radial portion 6 and a longitudinal portion 7. The conducting bars 5 are supported by, but are insulated from, two annular rings 8 and 9 carried at opposite ends of a spider 10 that is mounted upon the shaft 3, is provided at its inner end with an integral flange 11, and is screw-threaded at its outer end for the reception of a clamping ring 13. Clamped between the rings 8 and 9

upon the spider 10, but insulated therefrom and from each other, are a plurality of sheet metal rings 12 having, for a two-pole field structure, substantially diametrically opposite integral lugs 13, the extremities of which are bent into planes at right angles to those of the faces of the rings, and are interleaved with the conducting bars 5 to which they are soldered or otherwise connected in such a manner as to form a complete magnetizing winding for the field magnet. In assembling the structure, a group or a plurality of the rings 12 are first placed upon the spider 10 adjacent to the ring 9 so that the laterally projecting portions of the lugs 13 will extend outwardly away from the field magnet, and then a group or plurality of spacing rings 14, having no projecting lugs, are placed upon the spider, and finally another group of rings having lugs 13 are placed upon the spider with the portions that are bent at right angles to the faces of the rings projecting towards the field magnet. This arrangement of the rings permits of the employment of very simple and effective clamping means therefor, such, for instance, as that shown. The conducting bars 5 are spaced and insulated from each other by means of insulating wedges 15, whereby a solid and compact cylindrical structure is provided, metallic bands or rings 16 being shrunk upon the exterior of the cylinder but insulated therefrom, for the purpose of securely holding the structure together.

In applying the invention to a four-pole field structure, the rings 12 that serve as end connectors are cut radially at diametrically opposite points, as indicated in Fig. 3, and the two semi-circular annular pieces are each provided with two lugs and are insulated from each other and from bolts 17 upon which they may be mounted. In assembling the structure the radial breaks in adjacent rings are staggered in position, as indicated.

I claim as my invention:

In a dynamo-electric machine, a rotatable member comprising a slotted core, conductors located in and projecting from the core slots, a plurality of annular conductors mounted concentrically with the core having outwardly and laterally projecting lugs, the said annular conductors being arranged in two spaced groups with the lugs of the two groups projecting toward each other, longitudinally extending conducting bars connected, respectively, to the said lugs and provided with outwardly projecting radial portions that connect to the ends of the core conductors.

In testimony whereof, I have hereunto subscribed my name this 27th day of May 1907.

MILES WALKER.

Witnesses:

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