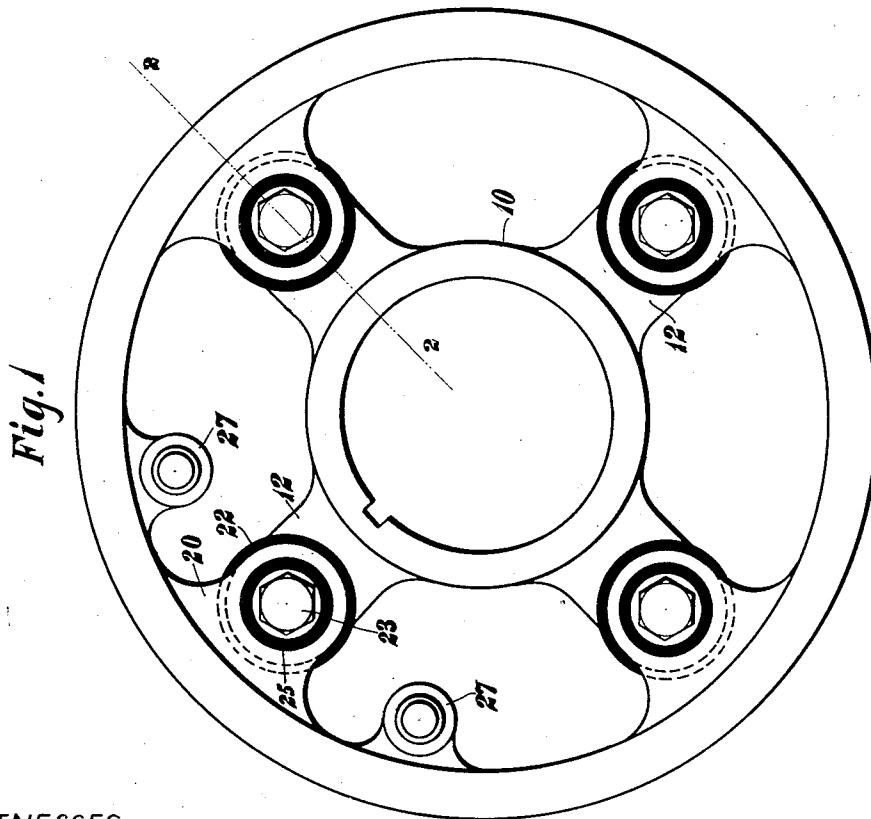
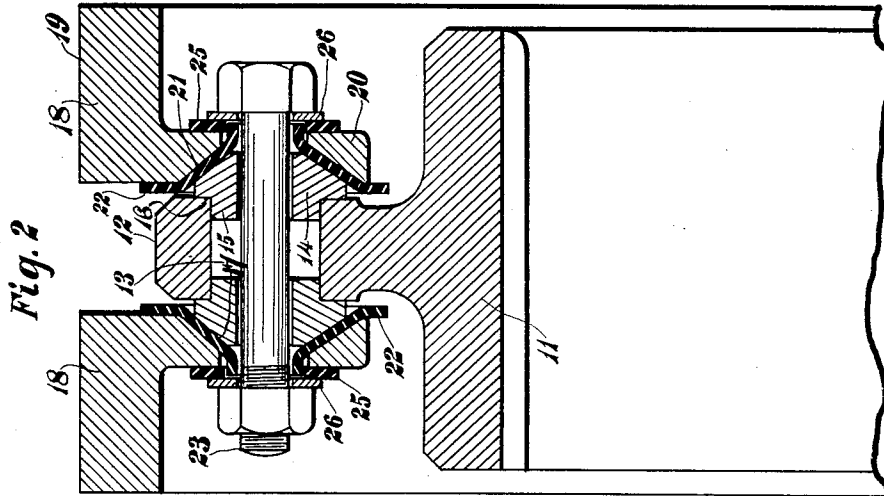


A. J. BROWN.
DYNAMO ELECTRIC MACHINE.
APPLICATION FILED JULY 30, 1906.

970,786.

Patented Sept. 20, 1910.



WITNESSES

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ARTHUR J. BROWN, OF NORWOOD, OHIO, ASSIGNOR TO ALLIS-CHALMERS COMPANY, A CORPORATION OF NEW JERSEY, AND THE BULLOCK ELECTRIC MANUFACTURING COMPANY, A CORPORATION OF OHIO.

DYNAMO-ELECTRIC MACHINE.

970,786.

Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed July 30, 1906. Serial No. 328,331.

To all whom it may concern:

Be it known that I, ARTHUR J. BROWN, 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 collector rings which are employed in dynamo-electric machinery either for taking current from, or supplying current to, the windings of the rotary members.

In dynamo-electric machines, particularly those machines in which large rings are employed, there is difficulty in supporting the rings so that they are properly centered relatively to the hub or spider on which they are mounted. Unless the rings are properly centered the contact between the rings and brushes is poor and sparking results.

The object of my invention is to provide supports for the collector rings which locate or center the rings accurately with respect to the member on which they are mounted, so that all portions of the brush surface bear on the ring with even, uniform pressure.

A further object of my invention is to provide means for securely supporting the rings in position, which supporting means is simple in construction and accessible so that the rings can be easily and quickly assembled, or removed in case their removal is desired.

My invention consists in the details of construction and the combinations and arrangements of parts described in the specification and set forth in the appended claims.

For a better understanding of my invention, reference is had to the accompanying drawings, in which—

Figure 1 is an end view of a group of collector rings and a rotary member on which they are mounted in accordance with my invention; and Fig. 2 is a partial enlarged sectional view of the same, the section being taken approximately along the line 2—2 of Fig. 1.

Referring now to the figures of the drawing in which I have shown the best form of my invention now known to me, 10 represents a rotary supporting member adapted to be keyed or otherwise secured to the rotary shaft, which supporting member con-

sists of an annular hub or sleeve 11 and radial, flat, flange-like arms 12 extending outwardly in the same plane. If desired a continuous web or flange may be employed instead of the arms, but I prefer to use the structure shown to reduce the weight of the support. I have in this case shown four arms 12, but it is evident that this number is merely arbitrary and may be changed if necessity demands. The outer portions of the arms 12 are carefully faced or machined on each side, and each is provided with a carefully drilled opening 13. The rotary member 10 is preferably made from cast iron.

Located within the openings 13 in the arms 12, and extending outwardly on each side are bushings 14, which center or locate accurately the collector rings with respect to the rotary member, as will be explained. The bushings 14, which are preferably made from some hard material such as steel, are provided with short neck portions 15 which fit accurately the openings 13 in the arms, and with shoulders 16 which engage the machined sides of the arms. The outer ends of the bushings which extend beyond the rings are made cone-shaped as is shown at 17.

At 18 are shown two collector rings which are clamped to the beveled ends of the bushing. These collector rings, each of which may consist of a single piece, or of two or more sections, are each provided with a cylindrical contact surface 19, and with a number of inwardly extending arms 20 corresponding in number and position to the arms 12 on the rotary member. If desired each ring may be provided with a continuous inwardly extending flange instead of the arms. Each arm 20 is provided with an opening having a beveled or conical surface 21 into which fits the beveled end of a bushing 14. The rings are carefully insulated from the bushings by insulation 22 which may consist of mica or any other suitable material.

The collector rings and bushings are clamped to the arms 12 by bolts 23 which extend through the openings of the arms 20 on the collector rings, through the openings in the bushings 14, and through the openings 13 in the arms 12 of the rotary member 10 so as to clamp the rings tightly against the

beveled ends of the bushings and the bushings firmly against the sides of the arms 12. The collector rings are carefully insulated from the bolts by means of flat insulating washers 25 interposed between the rings and washers 26 at the ends of the bolts. Each ring is provided with an inwardly extending lug 27 to which the winding on the rotary member may be connected. Thus it is seen that if parts are carefully machined the rings can be centered accurately and firmly held in position. Furthermore, the rings can be easily and quickly assembled or removed. I have in this case shown a single group of arms 12 for supporting the beveled bushings on which the collector rings are mounted, but my invention is not limited to such a structure. In this case I have shown only two rings, but it is obvious that any number of rings may be supported in a similar manner. I therefore do not wish to be confined to details here shown, as it is evident that many changes can be made without departing from the broad spirit and scope of my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In combination, a rotary member having radial arms, centering members having beveled surfaces carried by said arms on each side, collector rings having beveled portions engaging the centering members on each side of said arms, and means for clamping the centering members and rings to the arms.

2. In combination, a rotary member comprising radial arms having openings at their outer ends, bushings having beveled outer ends seated in said openings, a plurality of collector rings having corresponding beveled

portions engaging beveled portions of the bushings on opposite sides of said arms, and means for clamping the rings and bushings to the arms.

3. In combination, a rotary member having radial arms provided with openings near their outer ends, bushings having beveled outer ends seated in said openings, and extending from opposite sides of the arms, collector rings having beveled portions engaging the beveled ends of the bushings, and bolts for clamping the rings and bushings to the arms.

4. In combination, a rotary member having radial arms provided with openings near their outer ends, a pair of bushings having beveled outer ends seated in each opening and extending outward from opposite sides thereof, a collector ring on each side of the arms, said rings having beveled portions engaging the beveled ends of the bushings, and a bolt in the opening of each arm extending through the bushings for clamping the rings in position.

5. In combination, a rotary member having radial arms provided with openings near their outer ends, a pair of bushings having beveled outer ends seated in each opening and extending outward from opposite sides thereof, collector rings having inwardly extending arms provided with beveled openings engaging the beveled ends of the bushings, and bolts extending through the rings and bushings for clamping the rings in position.

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

ARTHUR J. BROWN.

Witnesses:

ARTHUR F. KWIS,
FRED J. KINSEY.