C. W. STARKER.

DYNAMO ELECTRIC MACHINE.

APPLICATION FILED FEB. 1, 1912.

1,130,211.

Patented Mar. 2, 1915.

Fig. 1.

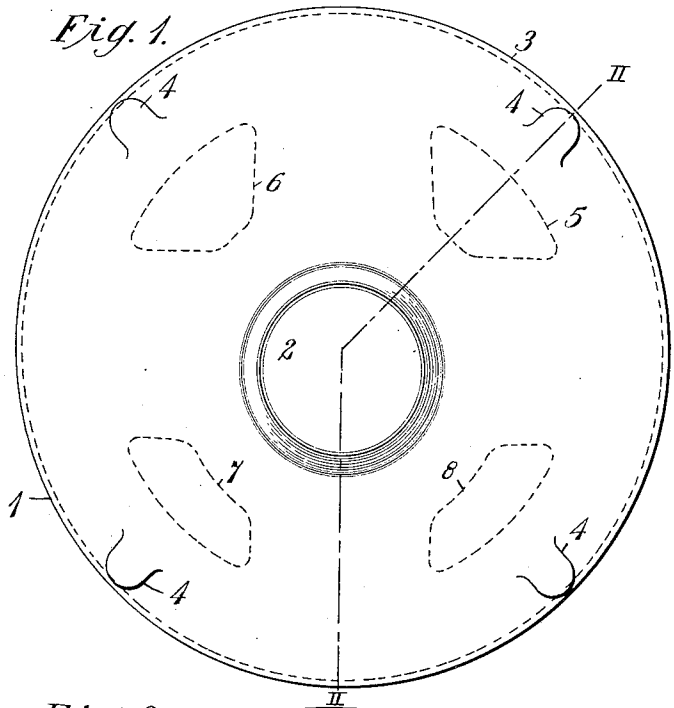


Fig. 2.

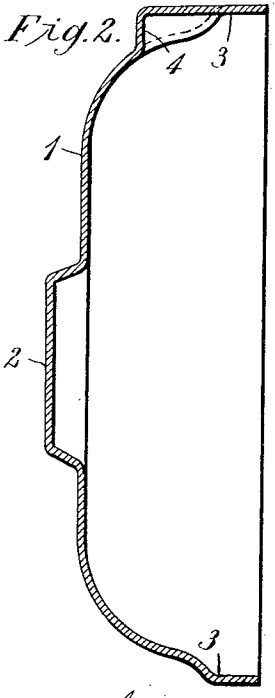


Fig. 3.

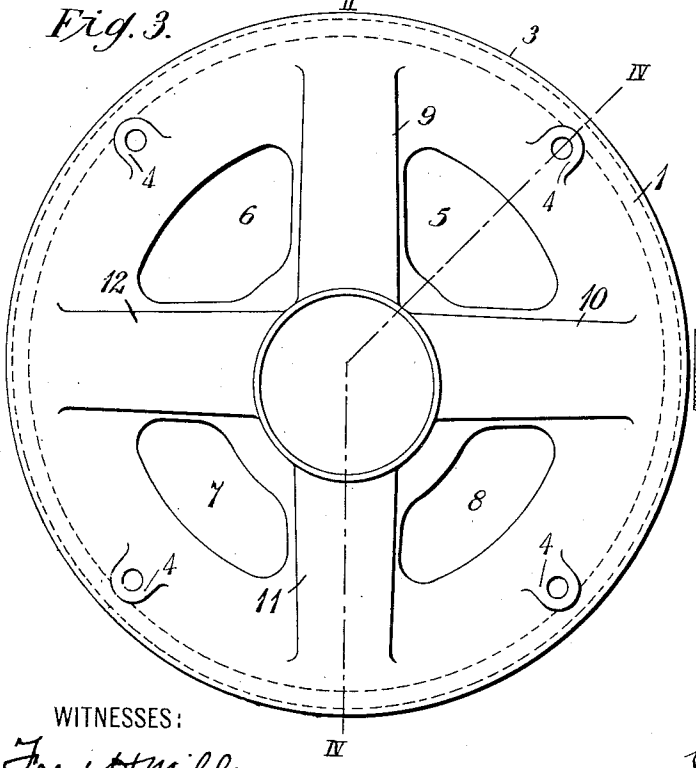
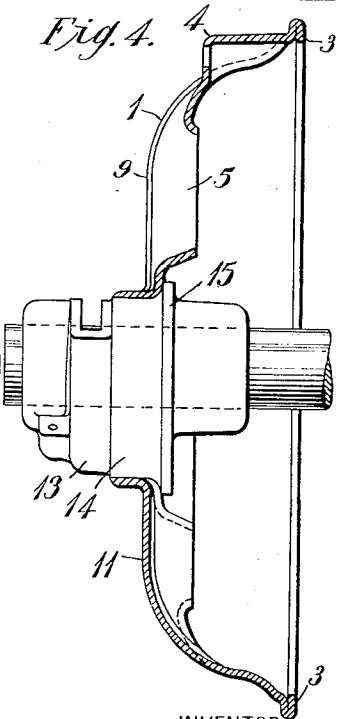


Fig. 4.



WITNESSES:

Fred H. Miller

R. H. Barbour

INVENTOR

Charles W. Starker

BY

Wesley G. Carr

ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES W. STARKER, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

DYNAMO-ELECTRIC MACHINE.

1,130,211. Specification of Letters Patent. Patented Mar. 2, 1915.

Application filed February 1, 1912. Serial No. 674,799.

To all whom it may concern:

Be it known that I, CHARLES W. STARKER, a subject of the Emperor of Germany, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Dynamo-Electric Machines, of which the following is a specification.

My invention relates to dynamo-electric machines and it has special reference to end bells or brackets which are secured to and form parts of the frames of such machines and support bearings for its rotary member.

The object of my invention is to provide a bracket of the class above indicated that shall be particularly rigid in structure, light in weight and inexpensive to manufacture, and a simple process of producing the same.

It has heretofore been customary to utilize cast iron or steel end brackets for dynamo-electric machines although considerable difficulty has been experienced on account of the cracking of the bracket arms or the breakage of the other parts. Punched or stamped metal brackets heretofore proposed consist of several pieces, including arms, rims and housing, held together by welding or riveting and are consequently relatively expensive to construct and less rigid than one piece brackets.

It has been my aim to produce a rigid end bracket having a minimum number of parts and possessing the advantages of both cast and stamped metal.

Figure 1 of the accompanying drawings is an elevation and Fig. 2 is a sectional view, on the line II—II of Fig. 1, of an end bracket in the course of construction, and Figs. 3 and 4 are corresponding views of a completed, end bracket constructed in accordance with my invention.

Referring to Figs. 1 and 2 of the drawings, the bell or bracket 1 here shown is punched or stamped from sheet steel or other suitable material, which may first be heated, and it has an offset portion 2, which may be eccentric as shown, a flange 3 and a plurality of boss projections 4 which are equally spaced, as shown in Fig. 1. Before any further forming is done, four holes 5, 6, 7 and 8, shown in broken lines in Fig. 1, are produced by a punching or stamping process. The bell is then placed in a suitable die and is given its final form, as shown in Figs. 3 and 4, the metal in the vicinity of the holes 5, 6, 7 and 8 being forced inwardly while the metal between the holes is maintained in position to produce radial arms 9, 10, 11 and 12. The end or cap which closes the eccentric offset 2 is next removed and a bearing-housing 13, having a shoulder 14 of proper size to expand the walls of the offset 2 and a flange 15, is forced into the offset by relatively high pressure to change it from a frusto-conical to a cylindrical form. Holes are also either drilled or punched in the boss projections 4. If the bearing-housing 13 is forced into the end bracket while the bracket is hot, the cooling of the parts and the shrinkage accompanying it cause the housing to be very firmly gripped and securely held in position. If the metal is worked cold, either the expanding of the hole in the offset and the consequent fit between the housing and walls of the offset, or bolts or rivets may be depended upon for holding the housing in position. By forming the radial arms 9, 10, 11 and 12 and forcing the metal around the holes 5, 6, 7 and 8, inwardly, the bracket, when completed, is extremely rigid and shows no tendency to warp.

It may be found desirable to make the bearing-housing of relatively soft bearing metal and to secure it in position by rivets, screws or by a welding process. The holes 5, 6, 7 and 8 may, of course, be omitted if it is desired to adapt the end brackets for an entirely inclosed dynamo-electric machine. It may be found of advantage to substitute notches for the holes 5, 6, 7 and 8, thereby making a bracket with a plurality of arms instead of a complete bell-shaped bracket. Other modifications may be effected within the spirit and scope of my invention.

My invention has the advantage of being well adapted for use with motors and generators varying in size up to several hundred horse power and may be used for almost any size instead of being restricted to very small sizes, as heretofore.

As shown in Fig. 4, the flange 3 is preferably bent back on itself to further stiffen the structure and to improve the surface of the bracket which makes contact with the frame of a dynamo-electric machine.

I claim as my invention:

1. An end bracket for dynamo-electric machines comprising a bell-shaped member having an approximately central outwardly projecting cylindrical flange, a plurality of

radial integral ribs separated by openings having inwardly projecting walls, and a bearing-housing supported by the cylindrical flange.

2. An end bracket for dynamo-electric machines comprising a bell-shaped member having an approximately central flanged hole and a plurality of radial integral ribs separated by holes having inwardly projecting walls.

3. An end bracket for dynamo-electric machines comprising a bell-shaped member having an approximately central flanged hole, a plurality of radial ribs formed integral with it and separated by holes having inwardly projecting walls, and a bearing-housing supported in the flanged hole.

4. An end bracket for dynamo-electric machines comprising a punched or stamped sheet metal member having an approximately central flanged hole, a plurality of radial integral ribs and a bearing-housing supported in the flanged hole.

5. An end bracket for dynamo-electric machines comprising a punched or stamped sheet metal member having an approximately central flanged hole and a bearing-housing supported in the flanged hole.

In testimony whereof, I have hereunto subscribed my name this 18th day of Jan. 1912.

CHARLES W. STARKER.

Witnesses:
R. J. DEARBOON,
B. B. HINES.