Sept. 11, 1923. 1,467,339

A. N. SAMMARONE

ELECTRO DYNAMIC MACHINE

Filed May 31, 1921 2 Sheets-Sheet 1

Fig. 1.

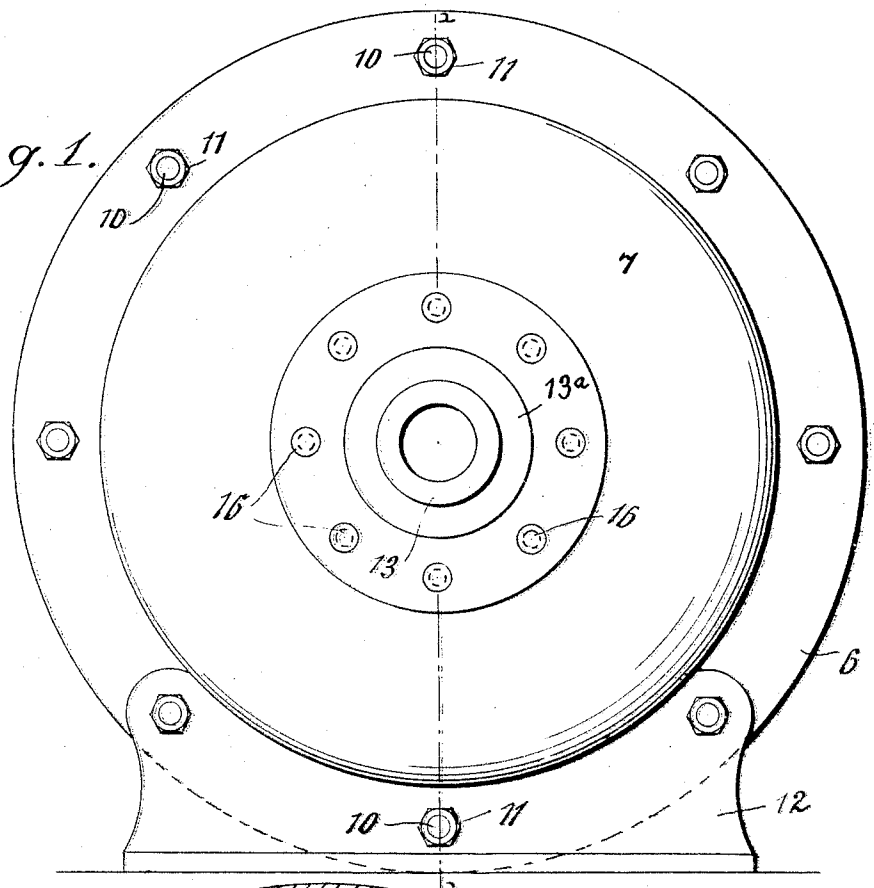
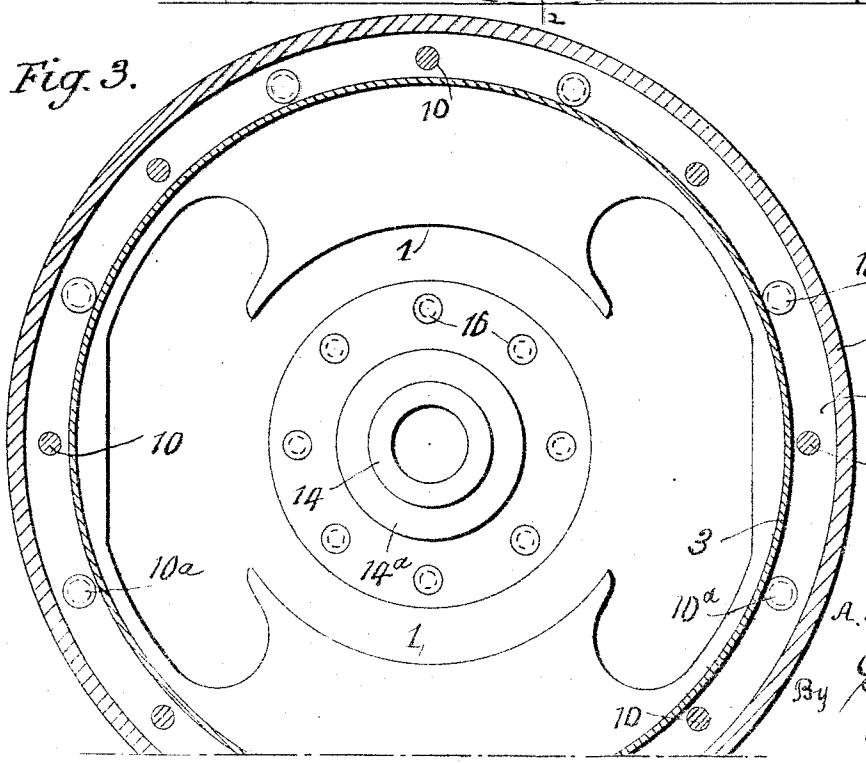


Fig. 3.



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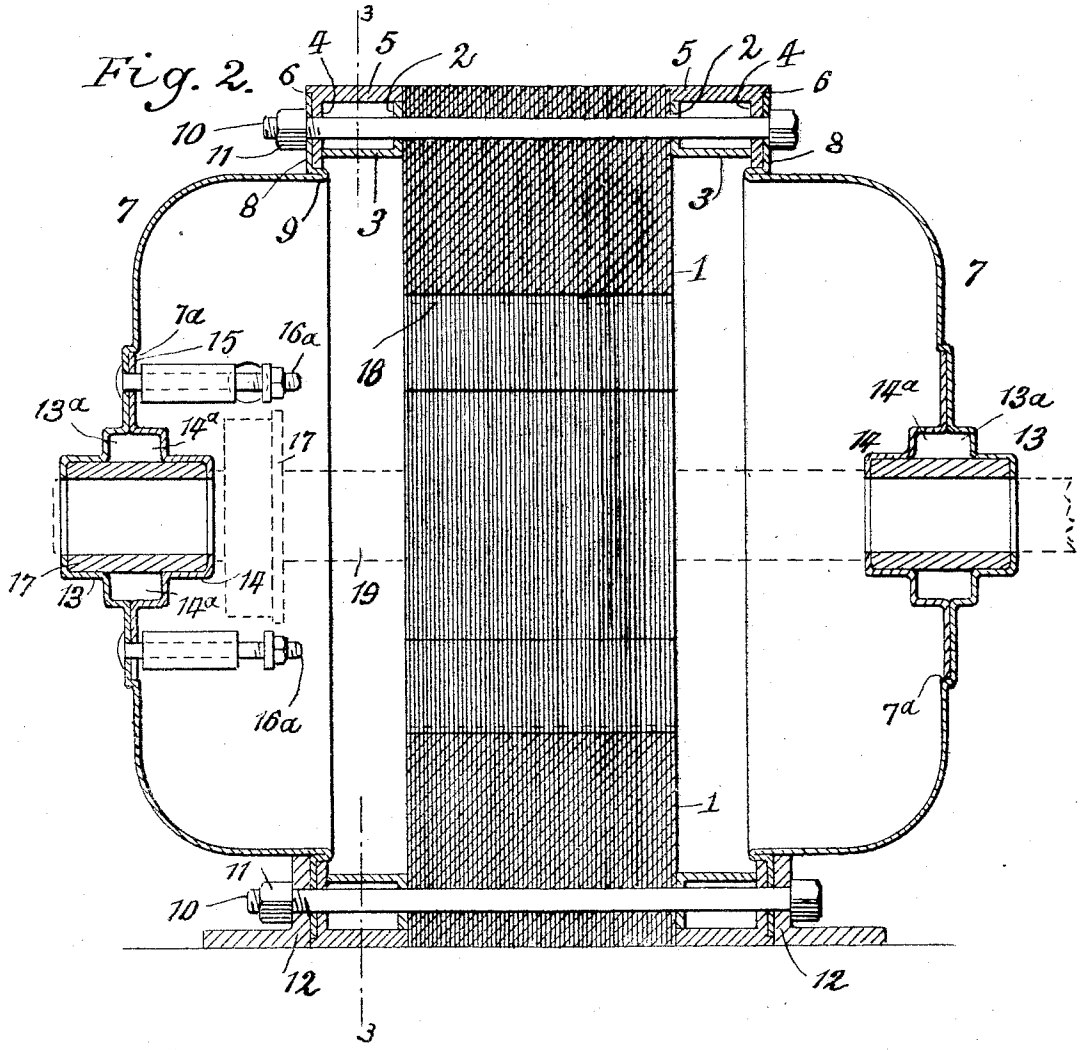
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Fig. 2.



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UNITED STATES PATENT OFFICE.

AMATO N. SAMMARONE, OF CLEVELAND, OHIO.

ELECTRODYNAMIC MACHINE.

Application filed May 31, 1921. Serial No. 473,703.

To all whom it may concern:

Be it known that I, AMATO N. SAMMARONE, a citizen of the United States, and resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Electrodynamic Machines, of which the following is a specification.

This invention relates to electrodynamic machines, having reference particularly to direct and alternating current generators or motors.

An object of my invention is the provision of a simple assemblage of parts of such novel correlation as to include means of centralizing the armature shaft and fixing the pole pieces, means for lubricating the armature shaft, means for supporting the commutator brushes and means constituting a supporting base for the structure, all of said parts of such construction as to be readily assembled and maintained in proper relative arrangement without liability of undue vibrations and accidental displacement.

A further object of my invention is to provide an apparatus of this character which is relatively light in weight though of very durable character, and which is noiseless while in operation.

These and other objects are attained by employing a laminated magnet comprising pole pieces; a pressed steel frame comprising interlocking rings, pressed steel bonnets, base members, and bolts and nuts for holding said parts in secure assembled correlation, means for centralizing an armature shaft, and means for holding commutator brushes and other features, all as hereinafter fully described and specifically set forth in the appended claims.

In the accompanying drawings forming part of this specification, Figure 1 is an end view illustrating an embodiment of my improvements;

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1; and

Fig 3 is a cross sectional view taken on the line 3—3 of Fig. 2.

In the drawings, 1 indicates a laminated magnet forming pole pieces which are fixed between oppositely located pressed steel rings 2, having respectively an outwardly extended annular flange 3. Interlocking over these rings 2 are similar pressed steel rings 4, having respectively a rearwardly extended annular flange 5 and an annular recess 6. Fitted within each of these recesses 6 is a pressed steel bonnet or head 7, having a radial flange 8 and a horizontally extended annular flange or rim 9 adapted for centralizing the assembled parts; these bonnets being held in fixed relation with the rings 4 by means of bolts 10 and nuts 11, which extend horizontally through the structure. Bolts 10^a, are also extended through the rings 2 and the magnet 1 forming the laminated pole pieces, whereby said magnet and pole pieces are maintained in rigid and fixed engagement with the rings 2 before the rings 4 are placed. As a means for supporting the device I provide oppositely located pressed steel saddles 12, constituting a base whereby the structure may be maintained on a horizontal plane.

The bonnets 7 take the place of cast iron hangers which are commonly employed for supporting the bearing boxes for journaling the armature shaft, said boxes, in my construction, respectively comprise two sections 13 and 14, the section 13 being pressed outwardly from the face of the bonnet 7 and having an enlarged annular extension 13^a, and the section 14 having a similar extension 14^a and a flanged extension 15, which fits within a recess 7^a of the inner face of the bonnet 7, said sections being held together by suitable bolts or rivets as 16, elongated bolts 16^a being provided and employed for holding commutator brushes, not shown, as they do not form part of the present invention. The commutator 17, armature 18 and armature shaft 19, are shown in outline only by dotted lines for the purpose of illustrating the correlation of the shaft with the bearing boxes which have suitable bushings 17 for direct contact with the shaft, but I do not consider it necessary to illustrate the armature and commutator construction in detail, as I do not claim any special construction of these parts.

It is manifest that the annular horizontally extended flange 9 and the annular recess 6 of the respective bonnets maintain a close joint with the ring 4, whereby a very stable housing structure is provided which automatically centralizes the armature shaft, and the rigid connection of the parts obviates vibration and makes the motor noiseless while in operation and, owing to the strong sheet steel construction of the bonnets, the

housing is not only very durable, but also comparatively light in weight, and it is readily adaptable for disassembling when desirable without necessity of disassembling the laminated magnet and pole pieces. It is especially noteworthy that the bonnets 7 are formed of pressed sheet steel by means of dies whereby the flanges 9 are absolutely uniform for the purpose of perfectly and automatically centralizing the components of the casing when assembled, while at the same time providing efficient means for stiffening and stabilizing the structure.

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

1. In housing for electrodynamic machines, inner rings which are L-shaped in cross section and adapted for clampingly engaging a laminated field, and outer rings which are L-shaped in cross section, said last named rings in interlocked engagement over said first named rings, and bonnets having annular flanges for engaging the last named rings, and means for fastening said elements together.

2. In a housing for electrodynamic machines, inner rings which are L-shaped in cross section and adapted for clampingly engaging a laminated field, and outer rings which are L-shaped in cross section, said last named rings being in interlocked engagement with said first named rings and respectively having an annular recess, and bonnets having outwardly extending annular flanges for engaging said recesses and inwardly extending annular flanges for extension through said outer rings, and means for fastening said elements together.

3. In a housing for electrodynamic machines, inner rings which are L-shaped in cross section and adapted for clampingly engaging a laminated field, and outer rings which are L-shaped in cross section, said last named rings being in interlocked engagement around said first named rings and respectively having an annular recess, and bonnets having outwardly extending annular flanges for engaging said recesses and inwardly extending annular flanges for extension through said outer rings, said bonnets having means for journaling an armature shaft.

Signed at city of New York in the county of New York and State of New York this 4 day of April A. D. 1921.

AMATO N. SAMMARONE.