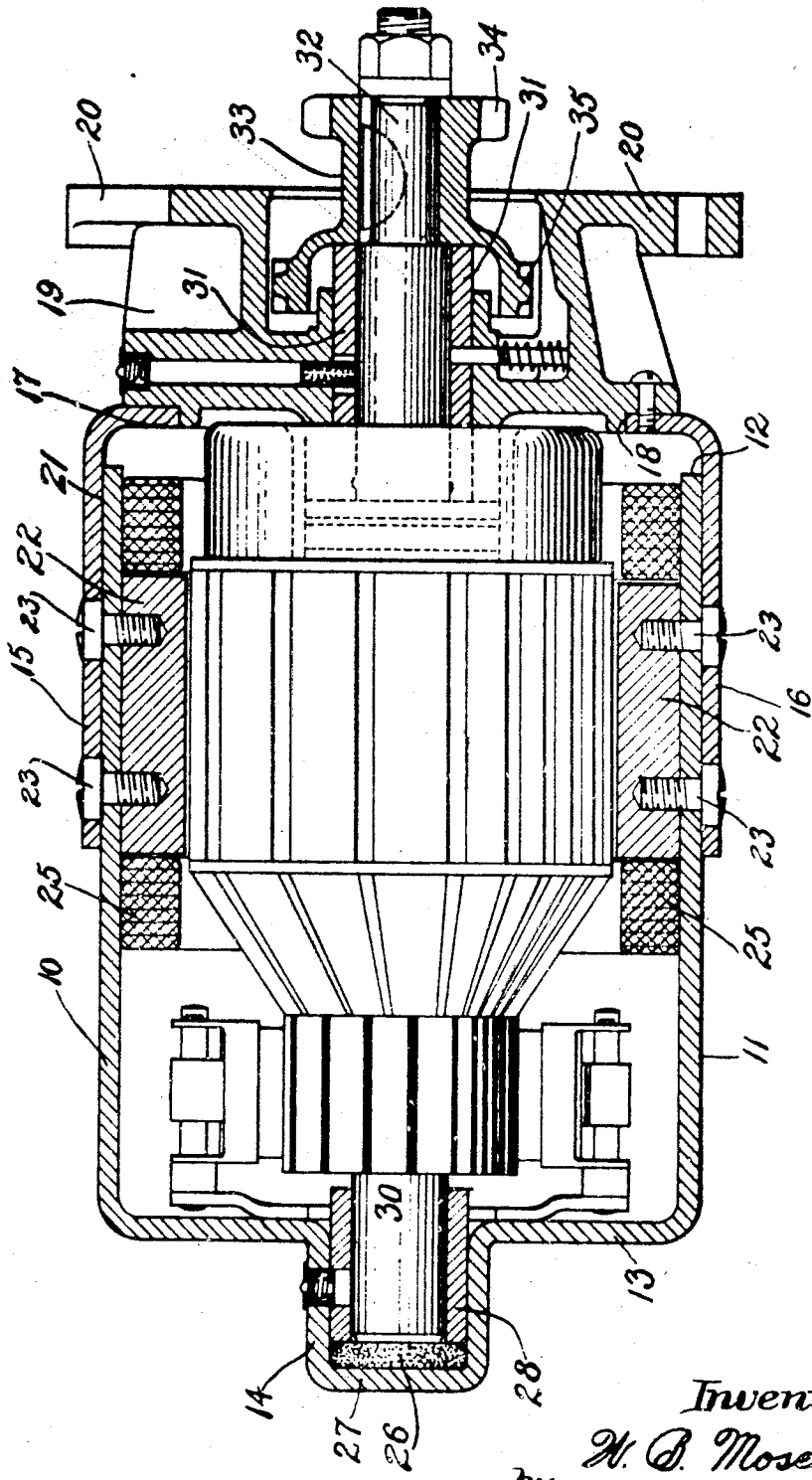


W. B. MOSES.  
DYNAMO ELECTRIC MACHINE.  
APPLICATION FILED JAN. 8, 1918.

1,306,018.

Patented June 10, 1919.



Inventor:  
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# UNITED STATES PATENT OFFICE.

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## DYNAMO-ELECTRIC MACHINE.

1,306,018.

Specification of Letters Patent. Patented June 10, 1919.

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*To all whom it may concern:*

Be it known that I, WILLIAM B. MOSES, a citizen of the United States, and resident of Watertown, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Dynamo-Electric Machines, of which the following is a specification.

This invention relates to dynamo electric machines and with regard to certain more specific features thereof, to the frame structure and bearings of such machines.

It is one of the objects of the present invention to provide a very light dynamo electric machine frame which shall be simple and inexpensive to construct and which shall be capable of withstanding rough usage.

Another object of the invention is to make possible the use of very thin sheet metal which may be stamped or drawn into suitable frame parts which are subsequently assembled or arranged to obtain the magnetic advantages of thicker or heavier material and provide a frame the parts of which may be telescoped to a greater or less degree to vary its housing capacity longitudinally.

Still another object is to provide an extremely inexpensive dynamo frame which shall be substantially dirt proof.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists of the various features of construction, combination of elements and arrangements of parts which will be exemplified by the construction hereinafter set forth and the scope of the application of which will be indicated in the following claims.

The accompanying drawing, which shows one of various possible embodiments of the invention is a view in longitudinal section of a dynamo.

Referring now more particularly to the drawing, there is indicated at 10 a shell comprising a cylindrical body 11 having an open end 12 and a closed end 13. This shell is stamped or drawn from sheet metal and in the stamping or drawing process it is formed with a cup shaped depression 14 at the central region of its end 13. This shell 10 forms one of the main parts of the dynamo frame, the other of which comprises a shell 15 having a cylindrical body portion 16, with an annular inwardly-projecting flange 17. This frame part is also stamped or drawn from thin sheet metal, and the

edge of the inwardly-projecting flange 17 is machined at 18 to receive and locate the bearing supporting member 19 which may serve as a base or attaching plate having the attaching portions as indicated at 20. The shells 10 and 15 have their body portions substantially lapped, as indicated at 21, in this way increasing the thickness of the frame at what may be termed its "polar region". The shells are pressed together in lapped relation and pole pieces 22 are attached to the body of the inner shell substantially opposite in a radial line to the increased thickness of the frame provided by the lapping of the shell portions. These pole pieces may be attached by means of screws 23 passing through the body portion of the inner shell and threading into tapped holes in the pole pieces. The field coils 25 are assembled in the usual way about the pole pieces 22. The aperture formed by the flange 17 is of suitable diameter to permit the introduction and withdrawal of the armature and if desired the shells may be slightly welded together although the piloting of the screw heads in the outer shell will serve ordinarily to prevent relative displacement.

Within the cup-shaped depression 14 formed in the shell 10 a felt pad 26 is inserted abutting the end wall 27 of said depression. A bearing member 28 of bronze or other suitable bearing material, is forced into the cup and is adapted to receive one end of an armature shaft 30. The end cap or attaching member 19 is provided with a bearing bushing 31 similar to the bearing 28 which serves as a journal for the opposite end of the armature shaft 30. In the case of a generator the armature shaft 30 may have a reduced end 32 upon which is mounted a power transmission element 33 comprising a sprocket 34 and a gear 35 the latter being substantially housed by the member 19 and adapted to drive circuit-controlling instrumentalities, such, for instance, as the interrupter or distributor shaft of an ignition device.

Some of the advantages of my invention may be noted, in that it provides a very light, but extremely rigid construction of dynamo frame. Working parts are all enclosed and protected from oil and dirt. The two shells may be struck up from very light magnetic metal and metal of the same thickness may be used for each shell. Opposite

end bearings are connected to respective shells of the frame rendering it possible to vary the distance between these bearings by a simple mechanical expedient, and the lapping of the shells provides increased strength where the weight of the pole pieces and field coils is applied, and at the same time avoids saturation by increasing the amount of stock in the polar region.

10 As many changes could be made in the above construction and as many apparently widely different embodiments of the invention could be made without departing from the scope thereof, it is intended that all mat-  
15 ter set forth in the foregoing description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention what  
20 I claim is:—

1. In a dynamo, in combination, a pair of thin shells having ends which are brought together in lapped relationship to form a casing, and pole pieces arranged within the  
25 shells opposite lapped portions, said lapped portions being of magnetic conductivity and forming a yoke magnetically connecting the pole pieces.

2. In a dynamo, in combination, a pair of  
30 separately produced casing members the outer ends of each of which are provided with means for armature supporting, and the inner ends of each of which are lapped, and pole pieces arranged within the members  
35 opposite the lapped ends, said members serving where lapped as a portion of the magnetic field.

3. In a dynamo, in combination, a pair of  
40 thin sheet metal shells, each having an end which for a portion of its length is telescoped with the other providing a casing having a thickened portion adapted to serve in the magnetic field, the pole pieces ar-

ranged within the casing in a transverse plane with said thickened portion, and means  
45 acting on one shell only for securing the said pole pieces to said casing.

4. In a dynamo, a combined casing and pole piece yoke comprising two shells hav-  
50 ing their inner ends telescoped and their outer ends adapted to serve as shaft bearing supports.

5. In a dynamo, a shell of extruded metal having a tubular body and a closed outer  
55 end, a second shell of extruded metal having a tubular body and an open outer end, the inner ends of said shell bodies being superposed relatively to form a casing and provide a band of magnetic conductivity, and a  
60 plurality of pole pieces attached directly to the inner surface of one of said shell bodies.

6. In a dynamo, a shell of thin steel, a second shell of thin steel, both shells being brought together in lapped relationship to  
65 provide a casing having a magnetic yoke as thick as the aggregate thickness of said shells, and pole pieces separately produced and attached to said shells opposite the lap.

7. In a dynamo, a shell of thin steel, a second shell of thin steel, both shells being brought together in lapped relationships to  
70 provide a casing having a magnetic yoke as thick as the aggregate thickness of said shells, pole pieces separately produced and attached to said shells opposite the lap, one  
75 shell having an end substantially closed and providing a shaft bearing, the other shell having an open end adapted to permit insertion and withdrawal of the armature, and means cooperating with the last said shell  
80 adapted to close said opening and provide a shaft bearing.

Signed at Cambridge in the county of Middlesex and State of Massachusetts this twentieth day of December A. D. 1917.

WILLIAM B. MOSES.