

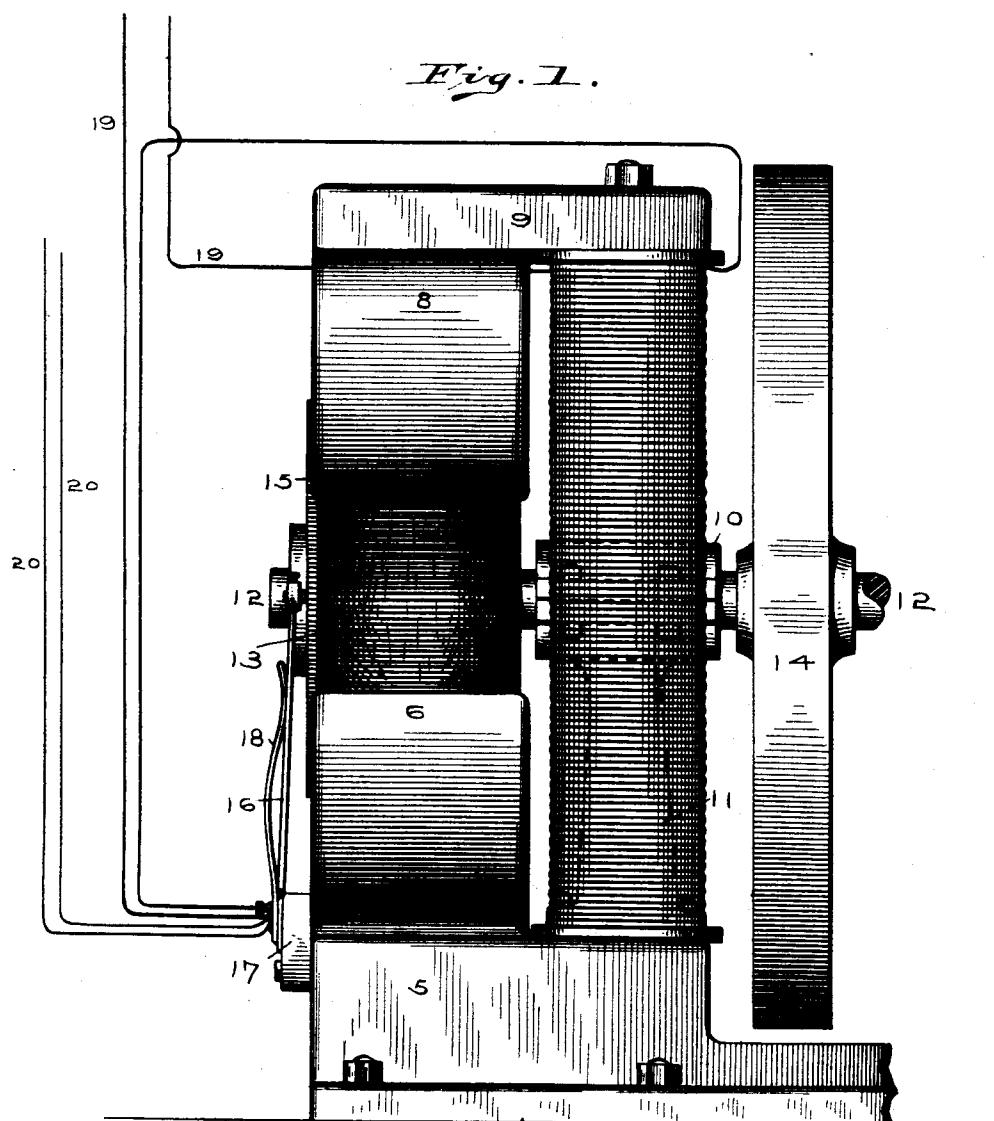
(No Model.)

3 Sheets—Sheet 1.

G. DE CAMP.
DYNAMO ELECTRIC MACHINE.

No. 540,351.

Patented June 4, 1895.



Witnesses

H. B. Neely.
E. E. Tammell.

Inventor

George De Camp

By Attorneys

Huber & Fowler

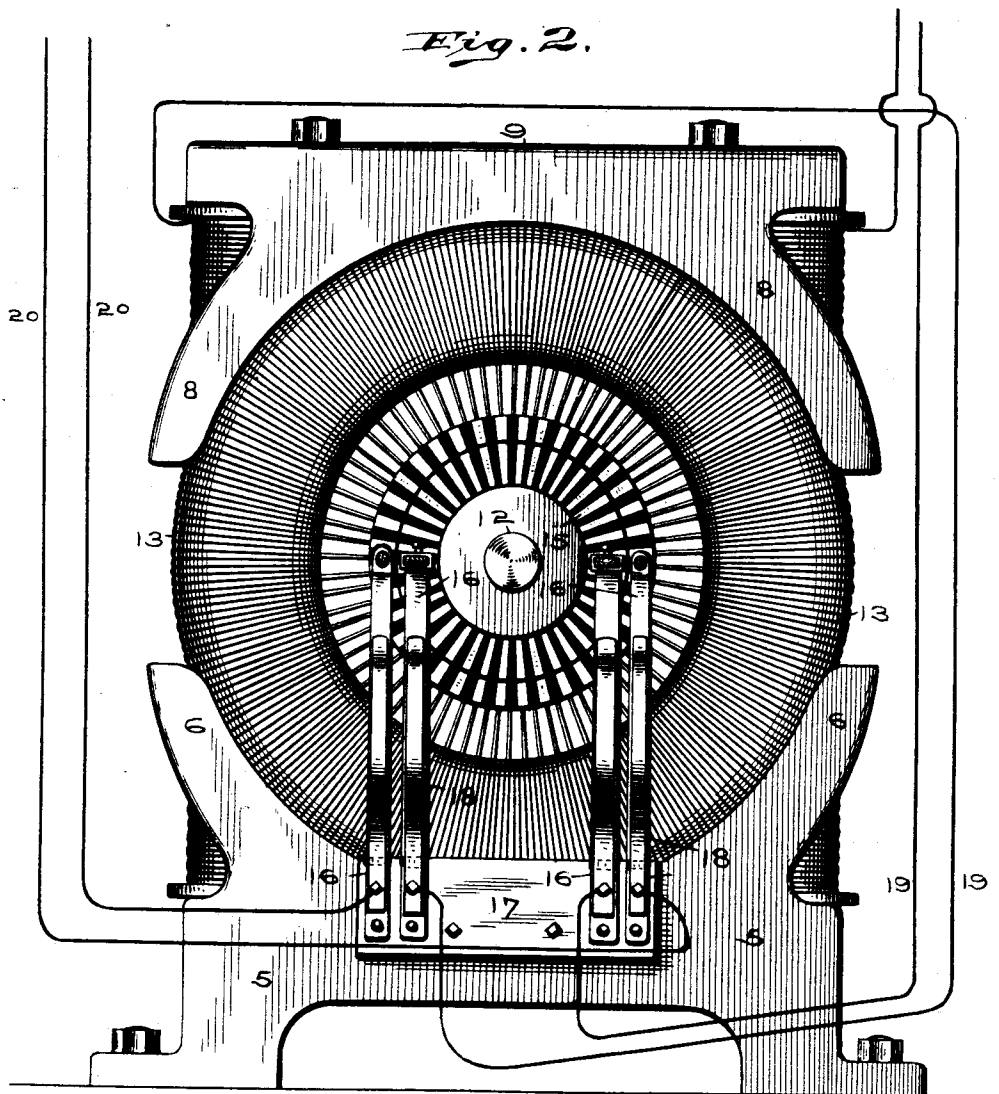
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(No Model.)

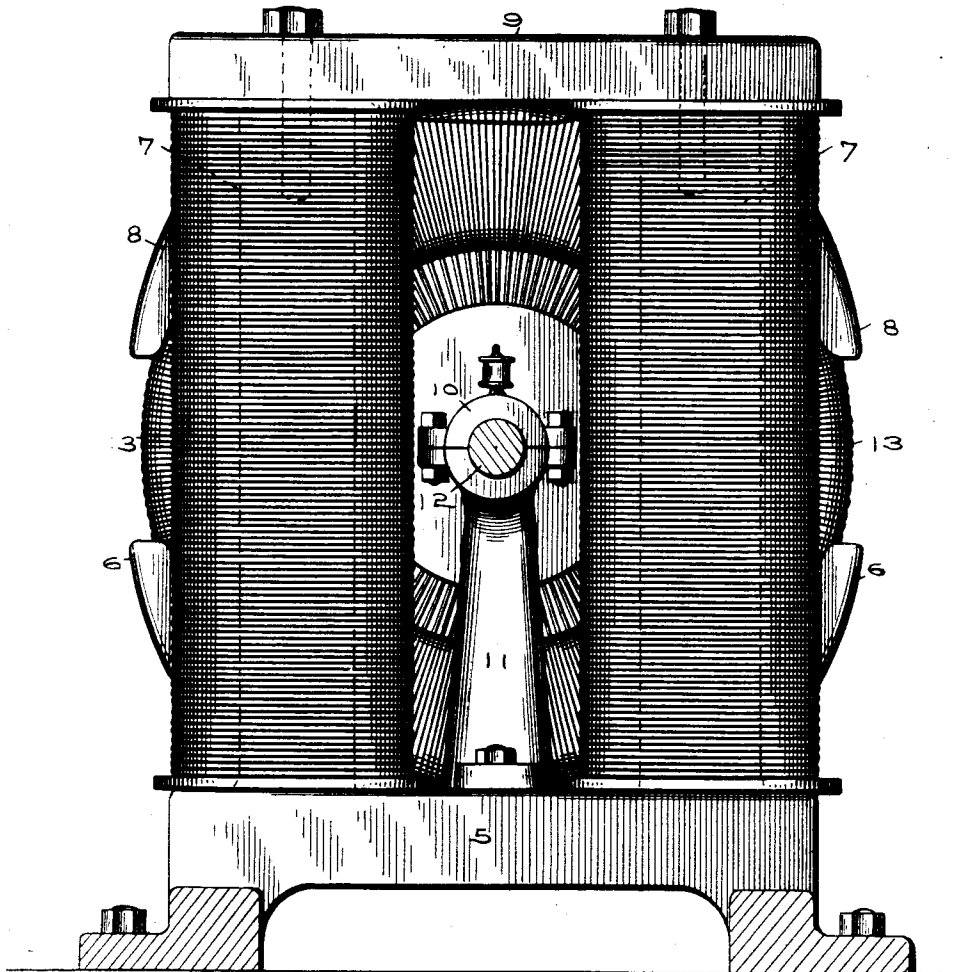
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Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE DE CAMP, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE ATWOOD
ELECTRIC COMPANY, OF SAME PLACE.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 540,351, dated June 4, 1895.

Application filed September 24, 1894. Serial No. 523,948. (No model.)

To all whom it may concern:

Be it known that I, GEORGE DE CAMP, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Dynamo-Electric Machines, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to new and useful improvements in dynamo electric machines, and the main object is to provide such a machine which will require a minimum amount of space and at the same time one that will furnish a maximum amount of power. This class of dynamo is specially desirable for use in electric head-lights for locomotives, and places where but little space is available for the lighting machinery, and where great power is required in proportion to the size of the machine.

In the drawings, where the preferred form of my dynamo is shown, Figure 1 is a side elevation showing the dynamo formed or constructed on one end of an engine-bed, the engine itself, with the exception of the fly-wheel, being broken away. Fig. 2 is a front or end view of the same. Fig. 3 is a rear end view of the dynamo, the bed and armature-shaft being in section and the fly-wheel removed.

In all the views where the same marks of reference refer to the same parts, 5 is the base of the dynamo and 6 the lower pole piece which may be cast or formed integral with the base 5.

7 are the field-magnet cores which are also cast or formed integral with the base 5 and are shown in dotted lines in Fig. 3.

8 is the upper pole piece which is formed integral with the dynamo cap plate 9, this cap plate being bolted to the field-magnet cores after they have been wound.

The field-magnet coils are alongside of and parallel with the pole pieces and in close proximity thereto, as shown in Fig. 1.

10 is a main shaft boxing which is supported from a base piece 11 formed integral or se-

cured to the base 5 of the dynamo, the base piece 11 being between the two field-magnet coils. (See Fig. 3.)

12 is the main shaft of the machine, and is carried in the boxing 10. The armature 13 is secured on the shaft on one side of the boxing to revolve between the pole pieces 6 and 8 and parallel with the field-magnet coils, the fly wheel 14 of the engine being mounted on the shaft 12 on the other side of the boxing 10 to balance the armature.

15 is the commutator which is in the form of a flat ring secured to the armature hub and is in this case, a double one for both arc and incandescent lighting.

16 are the brush holders which are preferably flat and are hinged or pivoted to an insulating plate 17 secured to the base 5 of the dynamo, springs 18 being provided to hold the brushes against the commutator.

19 are the circuit wires of the arc-circuit and 20 those of the incandescent-circuit and are attached to the brush holders in the usual manner.

In the dynamo herein shown, the engine is to be connected directly with the main shaft 12 of the dynamo, 14 being the fly wheel of the engine.

In constructing an electric motor in accordance with my invention, the drive wheel of the motor would take the place of the fly wheel and the shaft would be cut off beyond the drive wheel. The armature being parallel with and at the side of the field-magnet coils, allows of an armature of large size, and does not extend the machine laterally beyond the armature, thus securing economy of space in this direction. The commutator being on the face of the armature hub, but little space is taken up beyond the face of the armature, and with the side shaft boxing between the field-magnets only one boxing is required, whether the construction be applied to a dynamo or to a motor, thereby economizing space longitudinally, *i. e.*, in the other direction also. The upper pole piece being bolted to the field-magnet cores, and they being formed integral with the dynamo base, the whole is strong and rigid. By the construction set forth there are also fewer parts to the machine

than those in ordinary use, making the dynamo cheap to construct, simple and not likely to break down or get out of order.

Having fully set forth my invention, what
5 I desire to claim and secure by Letters Patent of the United States is—

1. In a dynamo electric machine, a shaft having bearings between the field-magnets, an armature mounted on such shaft at one
10 side of the field-magnets, and a fly or drive wheel mounted on such shaft on the opposite side of the field-magnets from the armature and balancing the same, such armature and fly wheel adapted to revolve parallel to the
15 field-magnet coils.

2. In a dynamo electric machine, a base plate, field-magnets whose cores are formed integral with such base, a bearing between such field-magnets, a shaft mounted therein,
20 an armature mounted on such shaft to revolve parallel to and alongside of such field-magnets, and pole pieces, one formed integral with the base of the machine and the other

with the cap piece, such cap piece fixed to the cores of said field-magnets. 25

3. In a dynamo electric machine, a base, field-magnets, their cores formed integral with such base, a cap plate rigidly secured to the top of such cores, pole pieces, one formed on such cap piece and the other on said machine base at the side of and parallel with the field-magnet coils, a bearing between said coils, and a shaft carried therein, an armature mounted on such shaft and adapted to revolve between said pole pieces and parallel with the
35 field-magnet coils, a commutator on the face of the armature, and brushes for taking up the current from such commutator.

In testimony whereof I have hereunto set my hand and affixed my seal, this 17th day of
September, 1894, in the presence of the two
40 subscribing witnesses.

GEO. DE CAMP. [L. S.]

Witnesses:

A. C. FOWLER,
J. F. WESTON.