

(No Model.)

W. P. FREEMAN.

DYNAMO ELECTRIC MACHINE.

No. 270,779.

Patented Jan. 16, 1883.

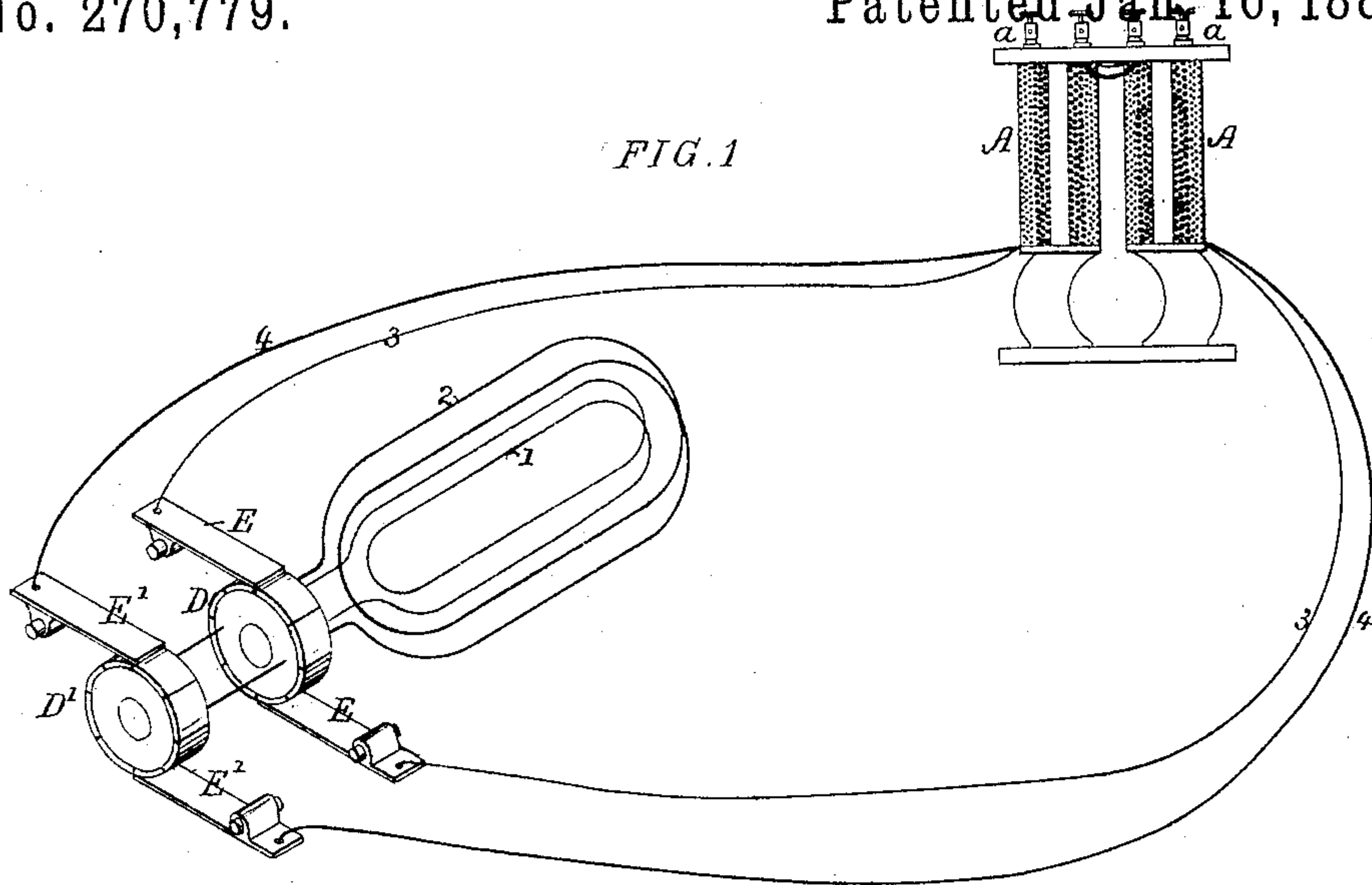
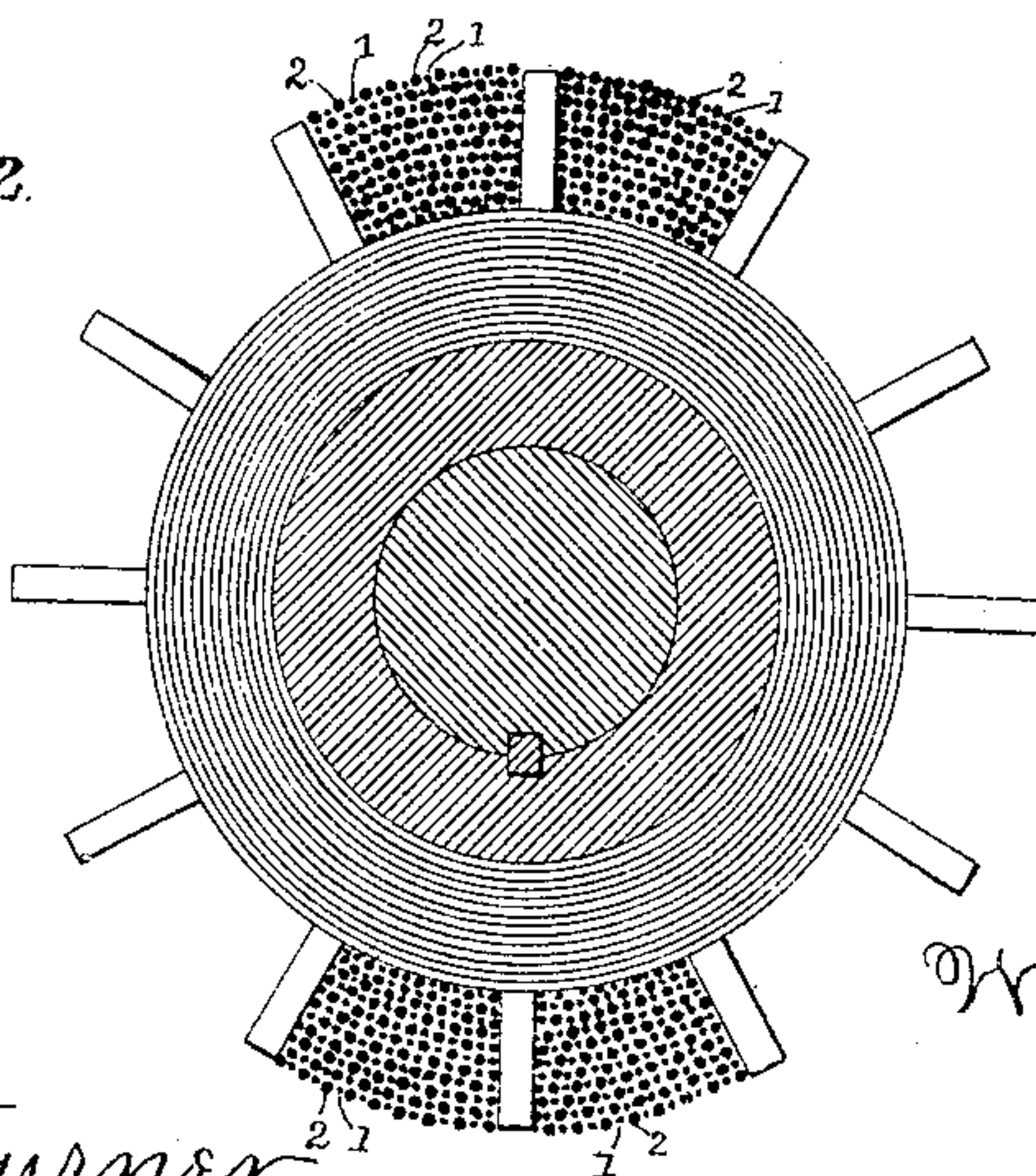


FIG. 2.



WITNESSES:

Harry Drury  
Hamilton D. Turner.

INVENTOR:

Warren P. Freeman  
by his attys.  
Howson & Son

# UNITED STATES PATENT OFFICE.

WARREN P. FREEMAN, OF NEW YORK, N. Y., ASSIGNOR TO WILLIAM F. JOBBINS, OF EAST ORANGE, NEW JERSEY.

## DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 270,779, dated January 16, 1883.

Application filed August 7, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WARREN P. FREEMAN, a citizen of the United States, and a resident of New York city, New York, have invented certain Improvements in Dynamo-Electric Machines, of which the following is a specification.

The main object of my invention is to so construct a dynamo-electric machine that it may be used for generating either an "intensity" current or a "quantity" current, or both, as may be desired; and this object I attain by winding the armature and the field-magnets with fine and coarse wire, and providing devices whereby either or both may be thrown into circuit, as more fully described hereinafter.

In the accompanying drawings, Figure 1 is a diagram showing the armature-circuits in perspective and separate from the field-magnets, which are on a smaller scale; Fig. 2, a transverse section of a double-wound armature.

It should be understood at the outset that, although I have shown in the drawings only one form of field-magnets, A A, Fig. 1, and armature, my invention is applicable to dynamo-electric machines of almost any construction.

Referring to the diagram Fig. 1 for the sake of simplicity, only one fine-wire coil, 1, and one coarse-wire coil, 2, are shown, the terminals of the coil 1 being connected to the segments of the commutator D, while the terminals of the coil 2 are connected to the segments of the commutator D'. The brushes E E, which bear on the commutator D, are connected by conductors 3 3 to the corresponding fine-wire coils of the field-magnets A A; and the brushes E' E' of the commutator D' in like manner are connected by conductors 4 4 to the thick-wire coils of the field-magnets, and the four terminals of these field-magnet coils are connected to the four binding-stops a, so that the two

independent circuits in the machine may be connected up into two independent external circuits, or into one and the same external circuit, as may be desired. For instance, where it may be desired to supply either a quantity-current or an intensity-current for the arc or the incandescent systems of electric lighting, as may be required, they can both be supplied from the one machine by connecting up the two independent external circuits; or where it is desired to have a circuit which may be supplied with an intensity or quantity current, or both at once, both machine-circuits may be connected up in one and the same external circuit, and by throwing either of the sets of brushes E or E' out of contact with their commutators, or putting them both into contact with their commutators, a quantity or intensity or a united current may be supplied at pleasure, according to the capacity of the machine.

The two sizes of wire may be wound on together, as shown in connection with the armature, Fig. 2, or one over the other, as shown in connection with the field-magnets in Fig. 1.

I claim as my invention—

1. A dynamo-electric machine having both the armature and field-magnets wound with coils of two different sizes of wire in two independent circuits for the production of currents of different intensity by the one machine, substantially as described.

2. In a dynamo-electric machine, the field-magnets and armature both wound with two sizes of wire in separate circuits, in combination with a commutator and brushes for each circuit.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WARREN P. FREEMAN.

Witnesses:

GEO. S. HICKOK,  
HUBERT HOWSON.