(No Model.) 3 Sheets—Sheet 1.

R. OLIVER.

DYNAMO ELECTRIC MACHINE.

No. 384,638. Patented June 19, 1888.

Fig. 1.

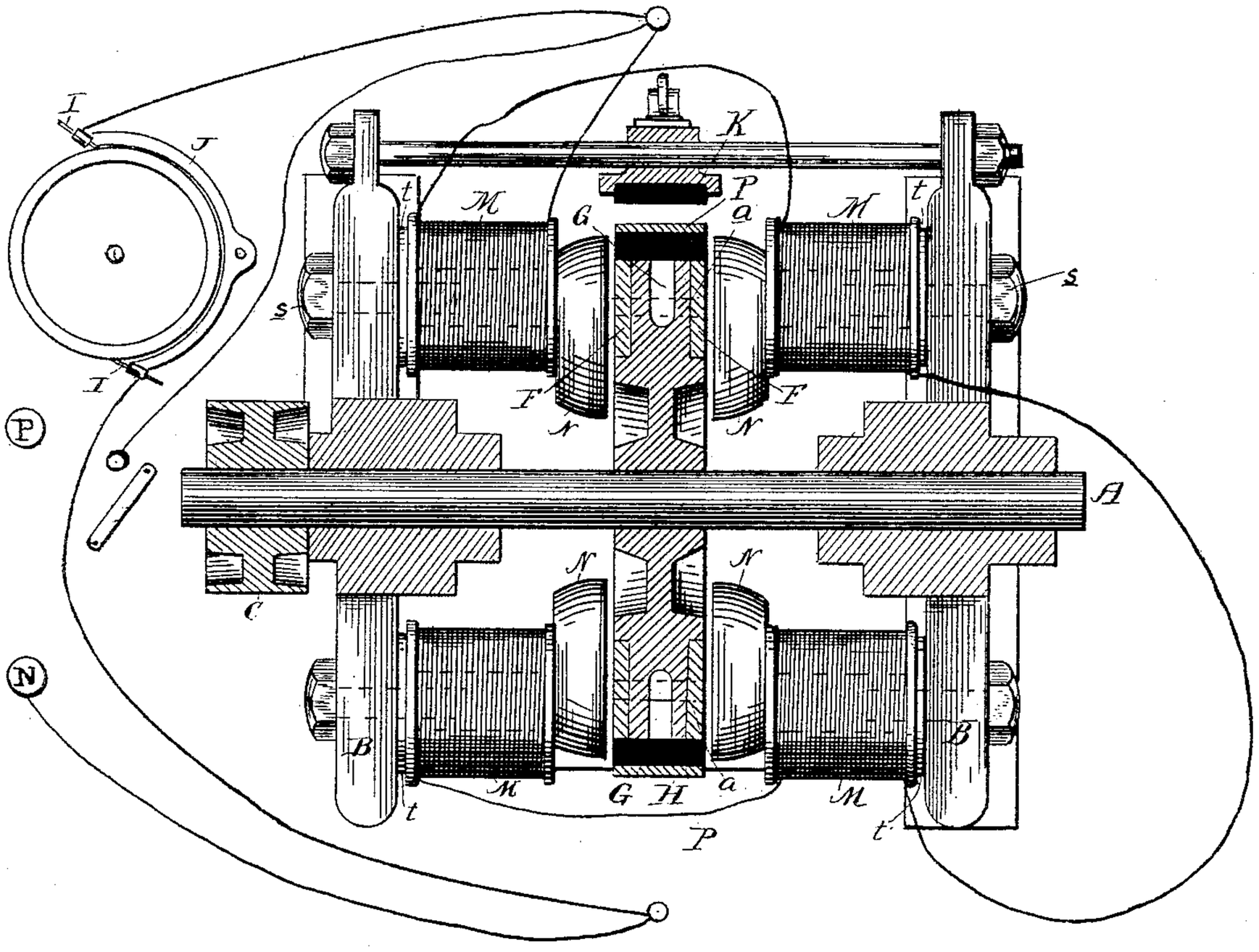
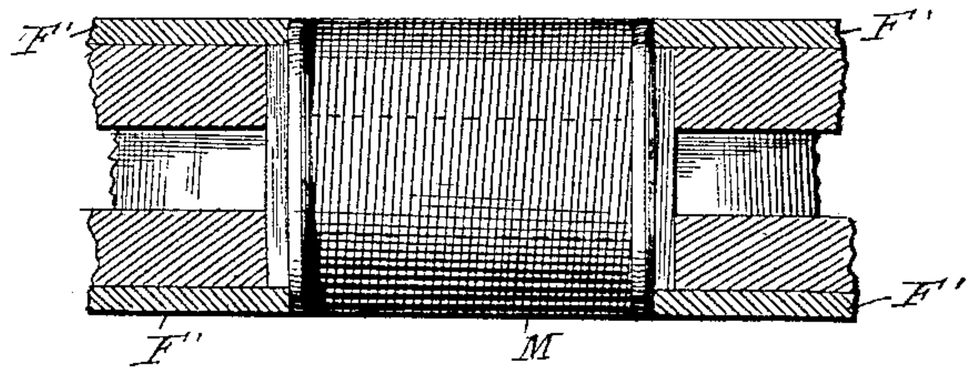


Fig. 4.



WITNESSES:

T. J. Robertson.

E. C. Goepel.

INVENTOR.

Robert Oliver.

By T. J. W. Robertson

ATTORNEY.

(No Model.) 3 Sheets—Sheet 2.

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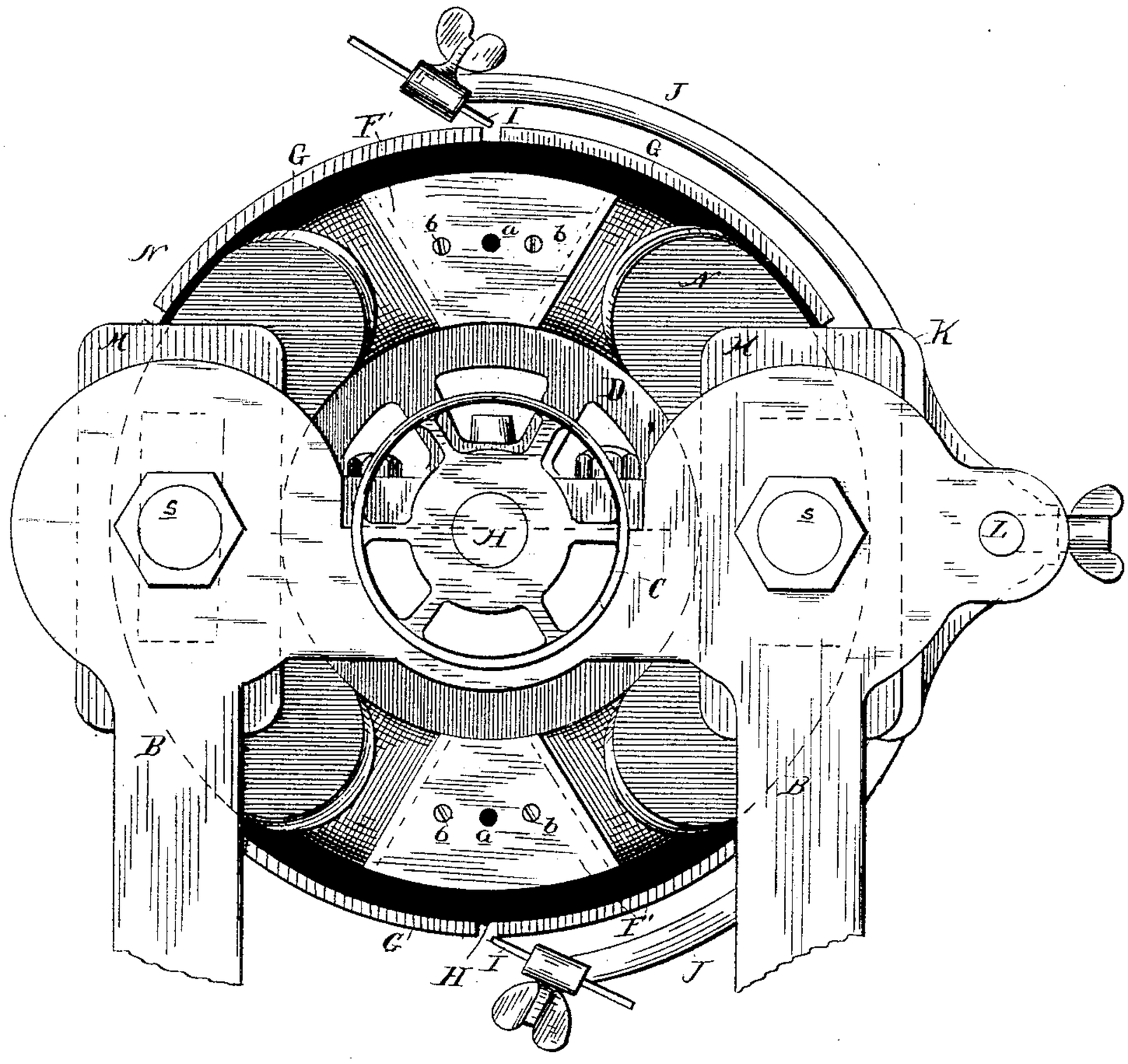
Fig. 2.



WITNESSES:
W. T. Robertson.
C. H. Taeder.

INVENTOR:
Robert Oliver.
BY T. J. W. Robertson.
ATTORNEY.

(No Model.) 3 Sheets—Sheet 3.

R. OLIVER.

DYNAMO ELECTRIC MACHINE.

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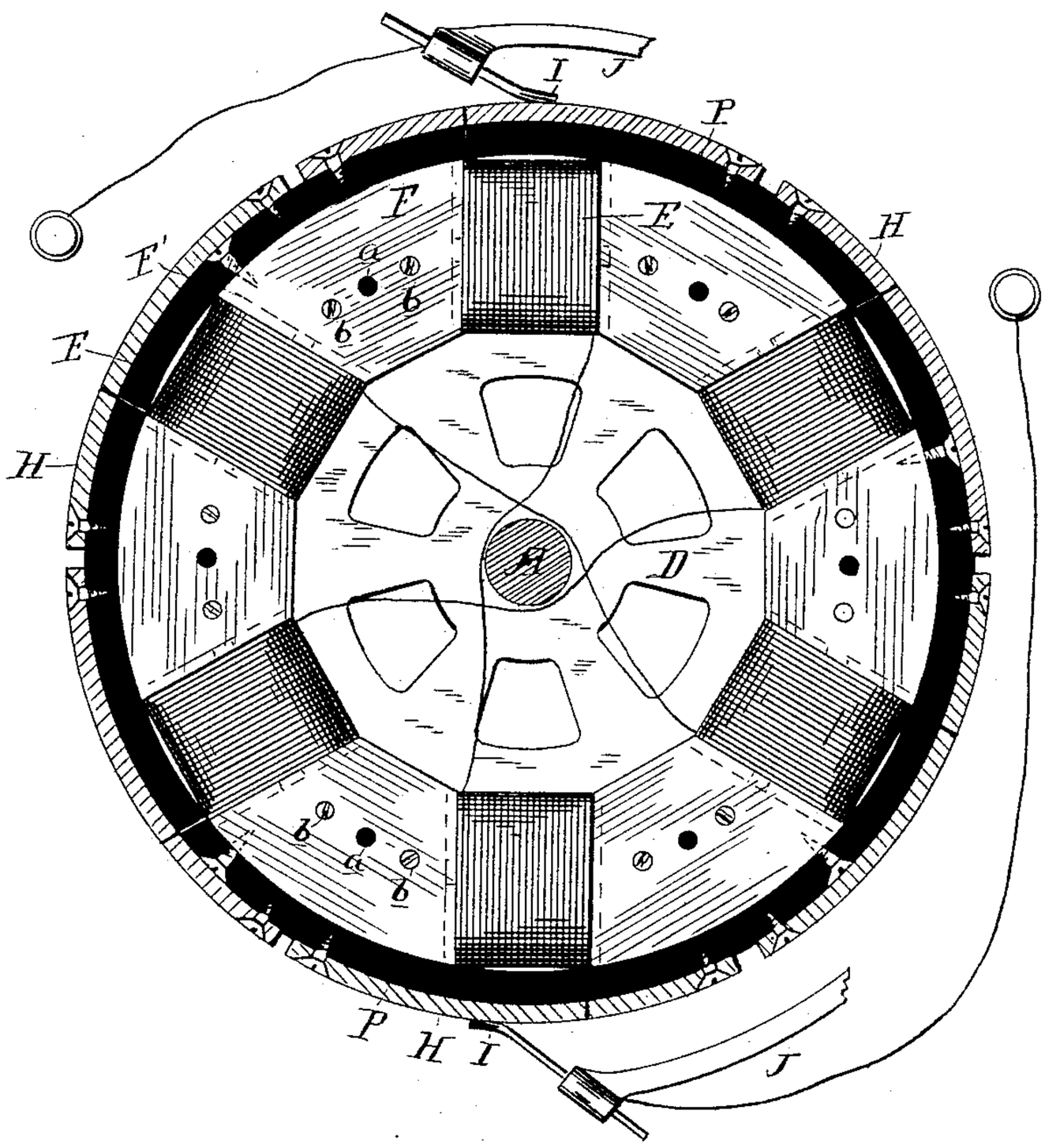
Fig. 3.



WITNESSES:
W. T. Robertson.
C. F. Raeder.

INVENTOR:
Robert Oliver.
BY T. J. W. Robertson.
ATTORNEY.

UNITED STATES PATENT OFFICE.

ROBERT OLIVER, OF ALPENA, MICHIGAN.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 384,638, dated June 19, 1888.

Application filed June 2, 1887. Serial No. 240,038. (No model.)

To all whom it may concern:

Be it known that I, ROBERT OLIVER, of Alpena, in the county of Alpena and State of Michigan, have invented new and useful Improvements in Dynamo-Electric Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in dynamo-electric machines; and the invention consists in the improved construction and arrangement of parts hereinafter described, and specifically set forth in the claims.

In the drawings which accompany this specification, Figure 1 is a vertical central longitudinal section of my improved machine. Fig. 2 is an end elevation of the machine. Fig. 3 is a cross-section through the armature. Fig. 4 is a detail on a large scale showing the manner of securing the bobbins.

The machine consists of a disk-armature revolving between fixed field-magnets arranged on either side thereof. The disk-armature is constructed as follows: Upon a solid shaft, A, mounted in suitable bearings in the frame B and provided with the drive-pulley C, is secured the armature-core, which consists of the cast-iron skeleton wheel D. This wheel is provided with a series of rectangular recesses open at the sides and face of the wheel and of suitable dimensions to receive and hold in position the bobbins E, all so arranged that they can readily be taken out without unwinding any wire in case of an accident and replaced in a few minutes. These bobbins are held in their recesses by the sectional retaining-plates F, which are of wrought-iron and fastened with screws *b* to the armature-core, which is suitably recessed upon the sides to make the sides of the armature-disk flush. The bobbins E have iron tips F′, and the plates F project over these tips and form an iron connection all around.

The wheel or core D is also provided with a deep groove, G, in the portions between the bobbins, and this groove communicates with the air-holes *a* in the retaining-plates F.

Around the rim of the wheel D and suitably secured thereto is placed a ring, P, of insulating material, and to this ring I secure the commutator-strips H. The bobbins are all wound in one direction and connected in pairs, as shown.

I are the brushes secured to the curved rocker-arm J, which is adjustably secured to the shoe K, and the latter is adjustably secured upon a rock-shaft, L, secured in the frame of the machine.

The field of force consists of four fixed magnets, M, arranged in pairs upon opposite sides of the armature-disks. The magnets have cast-iron cores and are provided with segmental wrought-iron pole-pieces N, (see Fig. 2,) detachably secured thereto, to permit of winding the magnets in a lathe.

Each magnet is independently secured to the frame of the machine and can be adjusted closer to the armature in any suitable manner, if desired, or at a greater distance therefrom. For instance, the magnets, as shown in Figs. 1 and 2, are secured to the standards by means of the screws *s*. It is evident that if washers or shims *t* are interposed between the inner ends of the magnets and the standards the magnets may be adjusted from or toward the armature.

The advantage of my machine is its simplicity and compactness. The current being taken directly from the armature dispenses with a separate commutator and permits the use of a solid shaft. The bobbins, by being interchangeable and detachably secured, permit ready repair, in case of accident. In fact the whole machine may be readily taken apart.

The commutator-strips, it will be seen, are solidly supported by the core of the armature.

What I claim as my invention is—

1. In a dynamo-electric machine, the revolving armature-disk consisting of a skeleton wheel provided with a series of rectangular recesses, a series of generating-bobbins secured within said recesses, retaining-plates secured to the sides of the armature-core, an insulating-ring secured to the rim of the skeleton wheel, and commutator-strips secured to the face of the insulating-ring, all substantially as described.

2. In a dynamo-electric machine, the combination of a revolving armature-disk carrying a series of commutator-strips secured to

the rim thereof, separately-removable generating-bobbins secured in rectangular recesses of the iron core of the armature-disk, sectional retaining-plates removably secured to the sides of the armature-disk, and a field-magnet consisting of separately adjustable and removable magnets provided with detachable pole-pieces and arranged in pairs upon opposite sides of the armature, substantially as described.

ROBERT OLIVER.

Witnesses:
ALLAN M. FLETCHER,
WILLIAM E. ROGERS.