

(No Model.)

R. L. COHEN.

DYNAMO.

No. 397,340.

Patented Feb. 5, 1889.

FIG. 1.

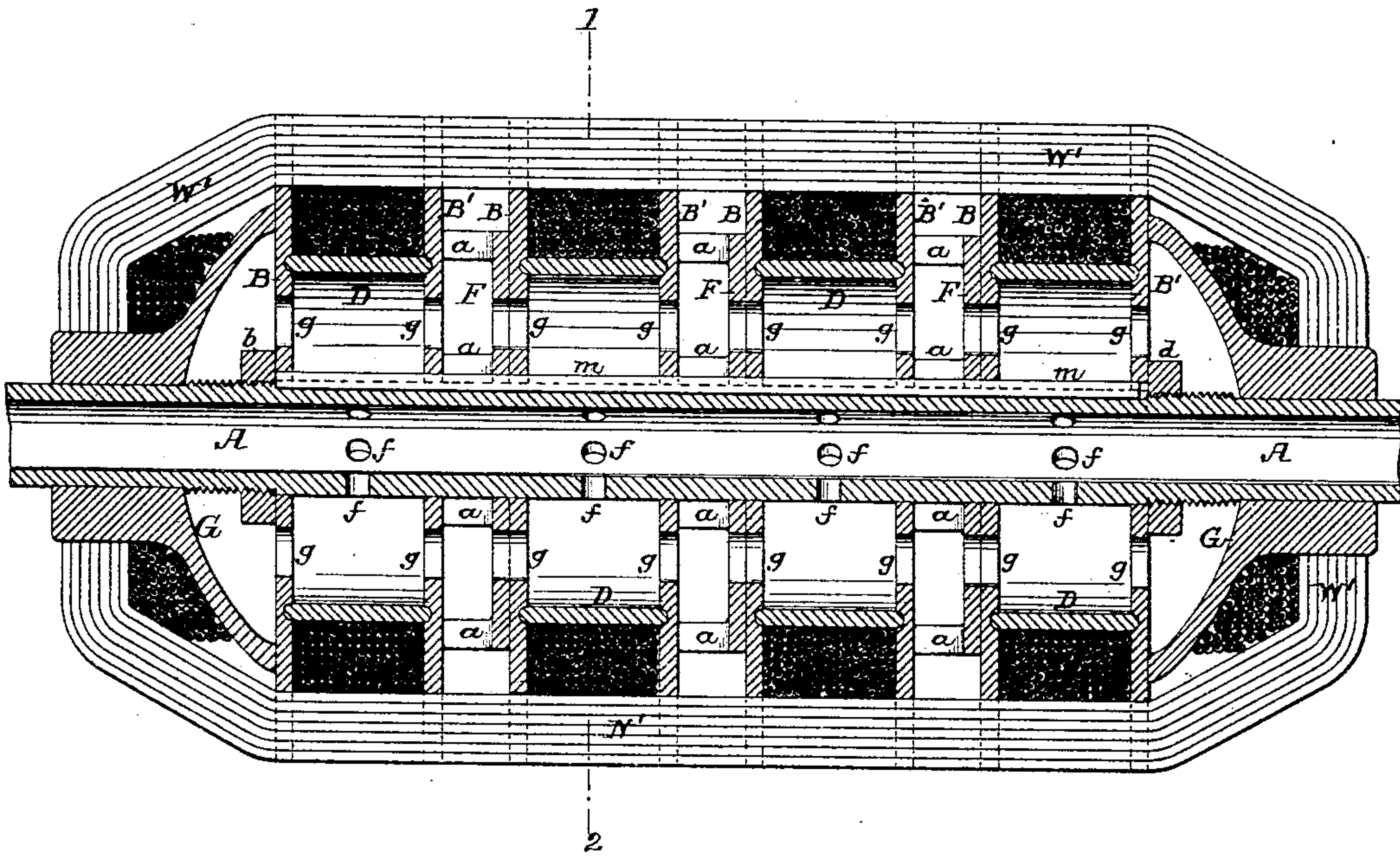


FIG. 2.

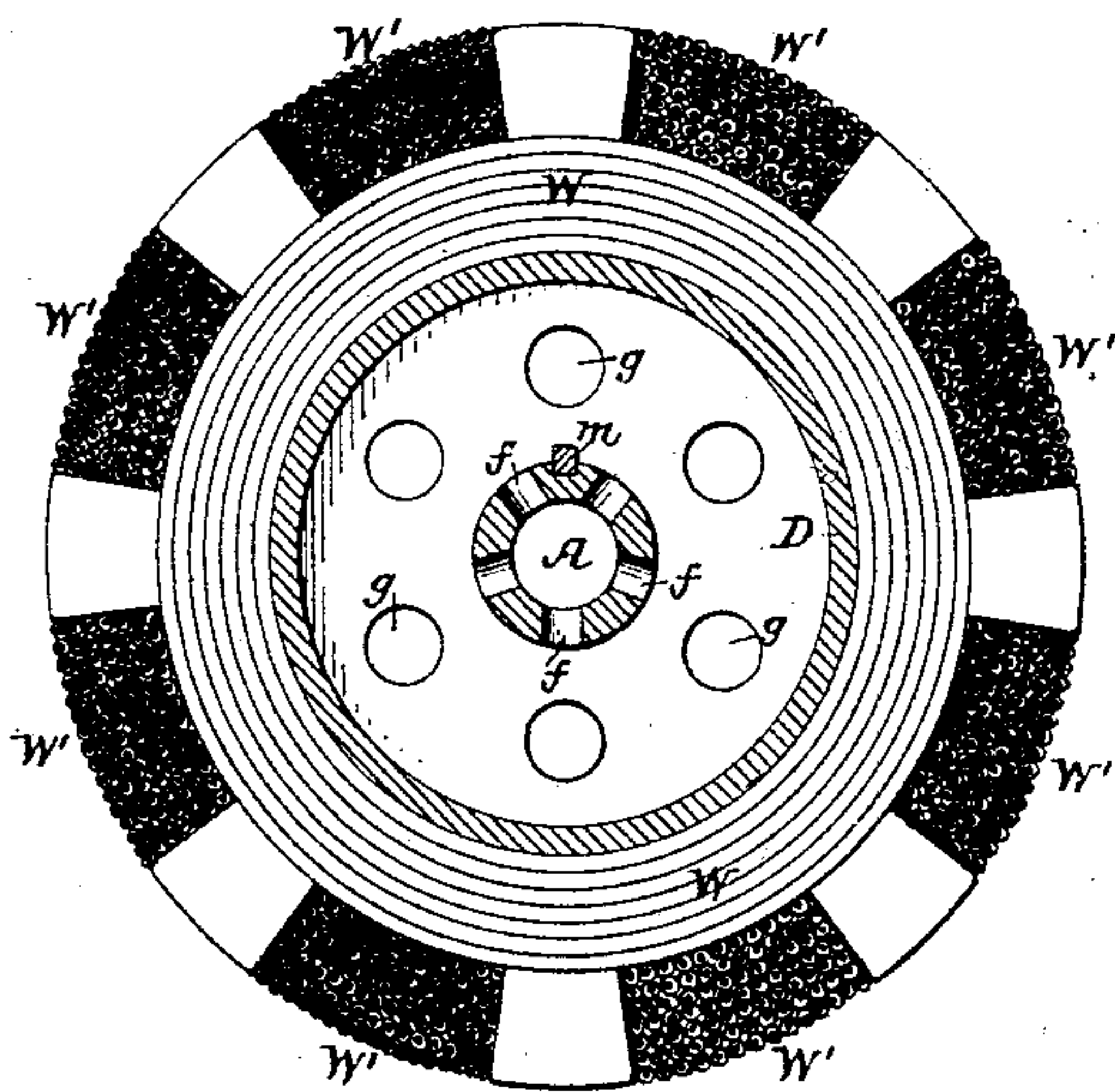
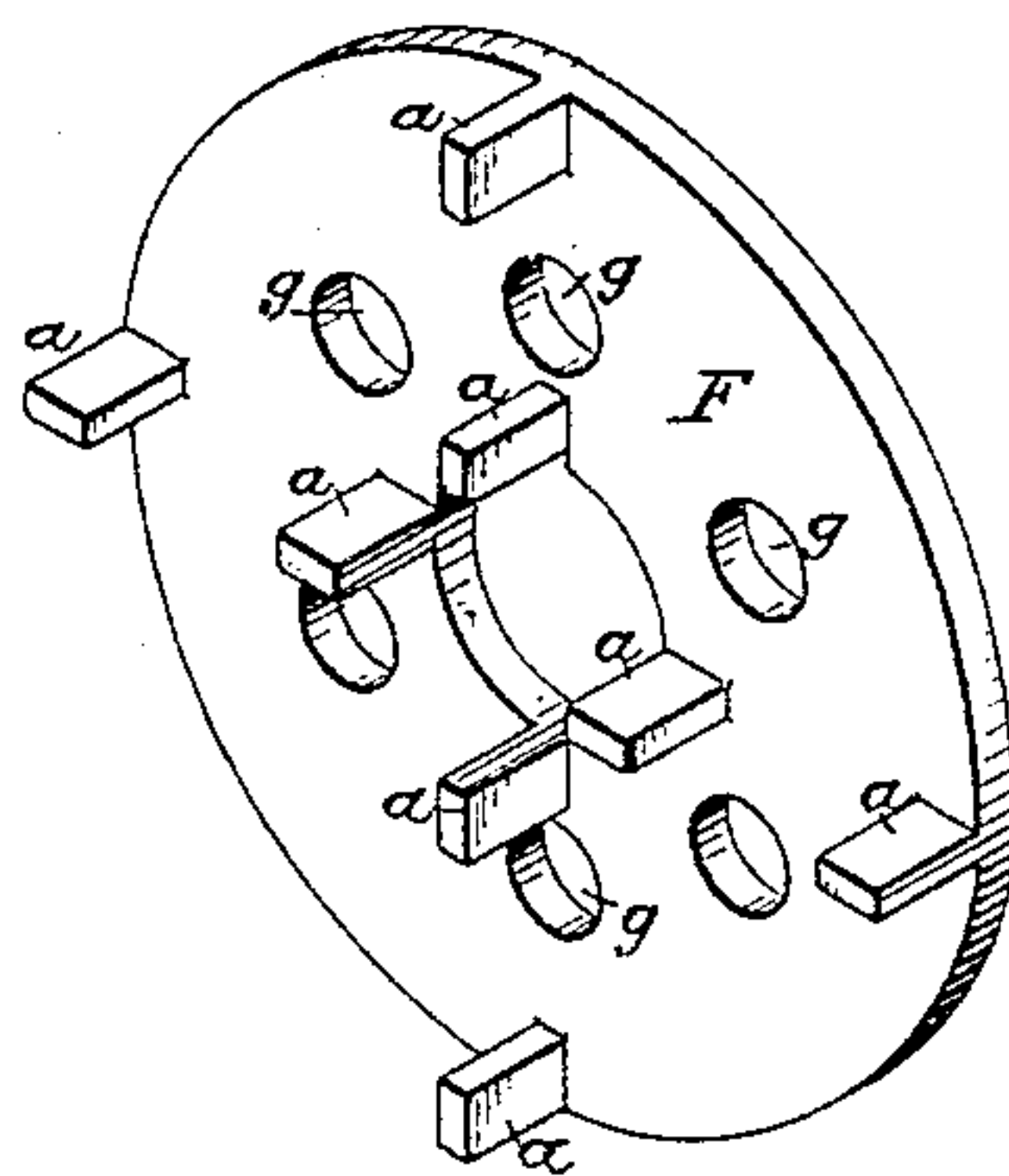


FIG. 3.



Witnesses:
Hamilton W. Turner.
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ROBERT L. COHEN, OF CAMDEN, NEW JERSEY, ASSIGNOR OF ONE-HALF
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DYNAMO.

SPECIFICATION forming part of Letters Patent No. 397,340, dated February 5, 1889.

Application filed September 27, 1888. Serial No. 286,556. (No model.)

To all whom it may concern:

Be it known that I, ROBERT L. COHEN, a citizen of the United States, and a resident of Camden, New Jersey, have invented certain Improvements in Armatures for Dynamo-Electric Machines and Electric Motors, of which the following is a specification.

The object of my invention is to so construct an armature for dynamo-electric machines or electric motors that the body of the armature can be readily built up and made of any desired size, and so that ample opportunity will be afforded for the perfect ventilation of the armature during the working of the machine. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of an armature constructed in accordance with my invention. Fig. 2 is a transverse section of the same on the line 1 2, and Fig. 3 is a perspective view of one of the plates of the armature.

The armature is mounted upon a hollow shaft, A, and consists of a number of bobbins, each composed of opposite end disks, B, B', and an interposed tubular shell, D, these bobbins being separated from each other by distance-pieces, each consisting of a disk, F, with projecting lugs *a*.

In building up the armature the end disk, B, of the first bobbin is slipped longitudinally on the shaft A until it comes in contact with a nut, collar, or flange, *b*, formed on or secured to said shaft. The tubular shell D is then adjusted to its proper position in respect to the end disk, B, and a second disk, B', is slipped on the shaft, so that the tubular shell will be confined between the two disks, each of the latter having, by preference, an annular groove or recess for the reception of one end of the tubular shell. The first bobbin being thus completed, a distance-piece is slipped on the shaft, so that its lugs bear against the disk B' of the bobbin, another bobbin and distance-piece are

then applied to the shaft in the same way, and so on until an armature of the desired length has been made, the end bobbin being secured by a nut, *d*, and the shell of the armature being preferably finished by the application to the shaft of concavo-convex heads G, which bear against the outer disks of the end bobbins of the shell.

The armature is completed by winding insulated iron wire W circumferentially upon each bobbin, and then winding the entire armature longitudinally with insulated copper wire W', the coils inclosing the opposite concavo-convex heads of the shell, as shown in Fig. 1; or suitably-insulated wrought-iron rings may take the place of circumferential wrappings of iron wire, if desired.

The tubular shaft A is open at one or both ends, and has a number of perforations, *f*, distributed at suitable intervals throughout its length, and the disks B, B', and F are also provided with perforations *g*, so that air entering the hollow shaft at one or both ends can pass through the perforations of the same into the hollow bobbins, and from the latter into the spaces between the bobbins, from which it escapes between the wires of the longitudinal wrapping of the armature, both shell and wrapping being thus prevented from becoming hot, whatever the speed at which the armature is caused to rotate.

The hollow shaft is preferably provided with a longitudinal key or feather, *m*, adapted to key-seats or recesses formed in the various disks comprising the shell of the armature, so as to prevent circumferential slipping of said shell on the shaft.

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

1. The combination of the shaft of an armature with the shell comprising hollow bobbins and interposed spacing-pieces, each hollow bobbin consisting of opposite end disks and an interposed tubular shell, all substantially as specified.

2. The combination of the hollow perforated shaft, the hollow perforated bobbins, and the interposed filling-pieces forming chambers between the bobbins, through
5 which air entering the hollow shaft and bobbins can escape outwardly, all substantially as specified.

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

ROBERT L. COHEN.

Witnesses:

WILLIAM D. CONNER,
HARRY SMITH.