

(No Model.)

W. F. COLLINS.
DYNAMO ELECTRIC MACHINERY.

No. 393,742.

Patented Dec. 4, 1888.

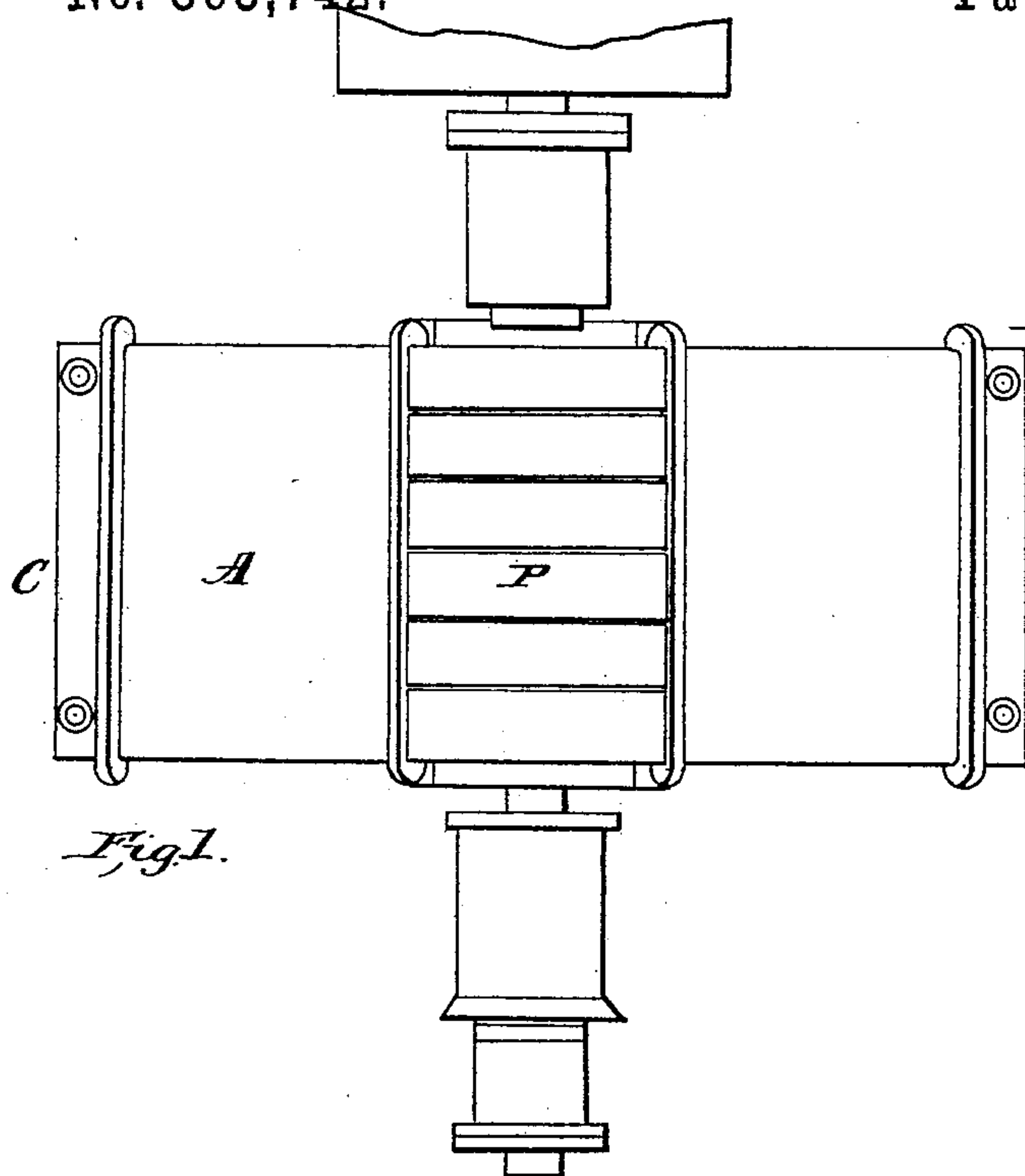


Fig. 1.

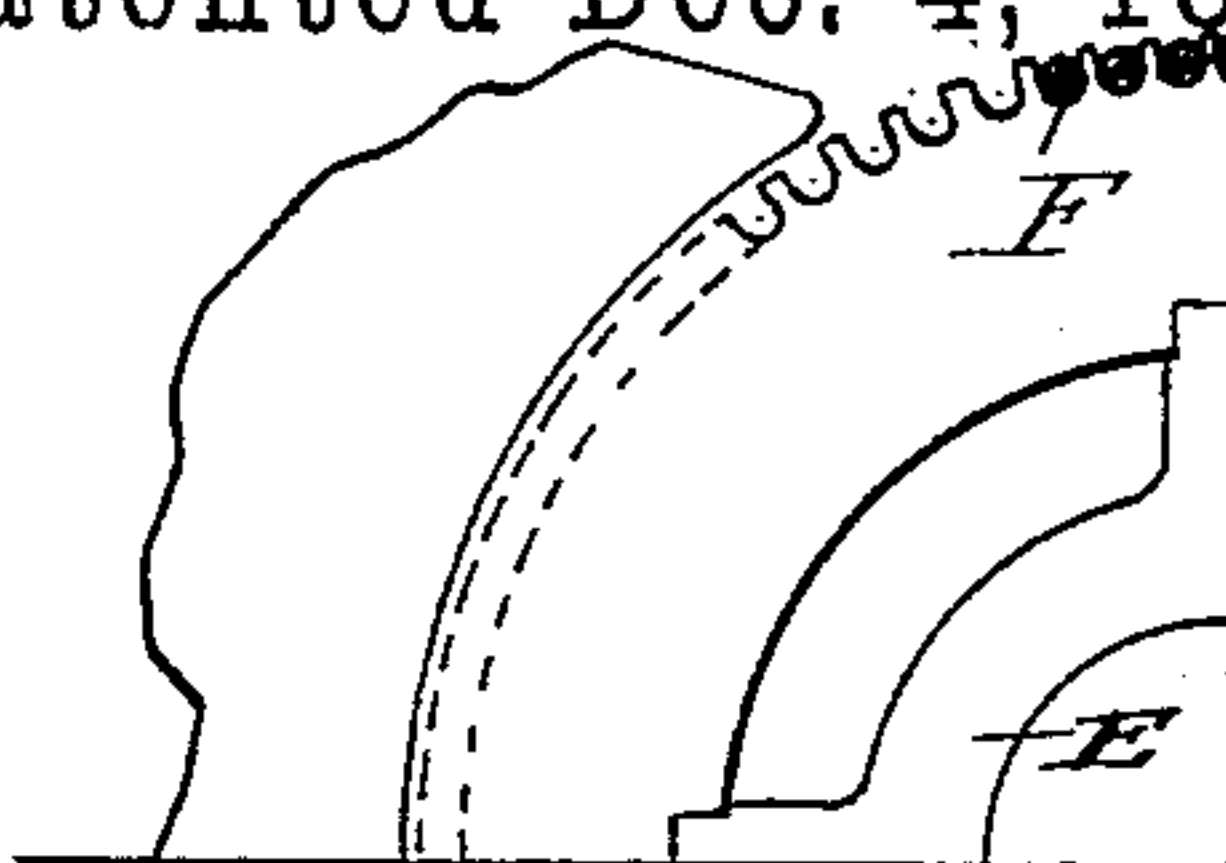


Fig. 4.

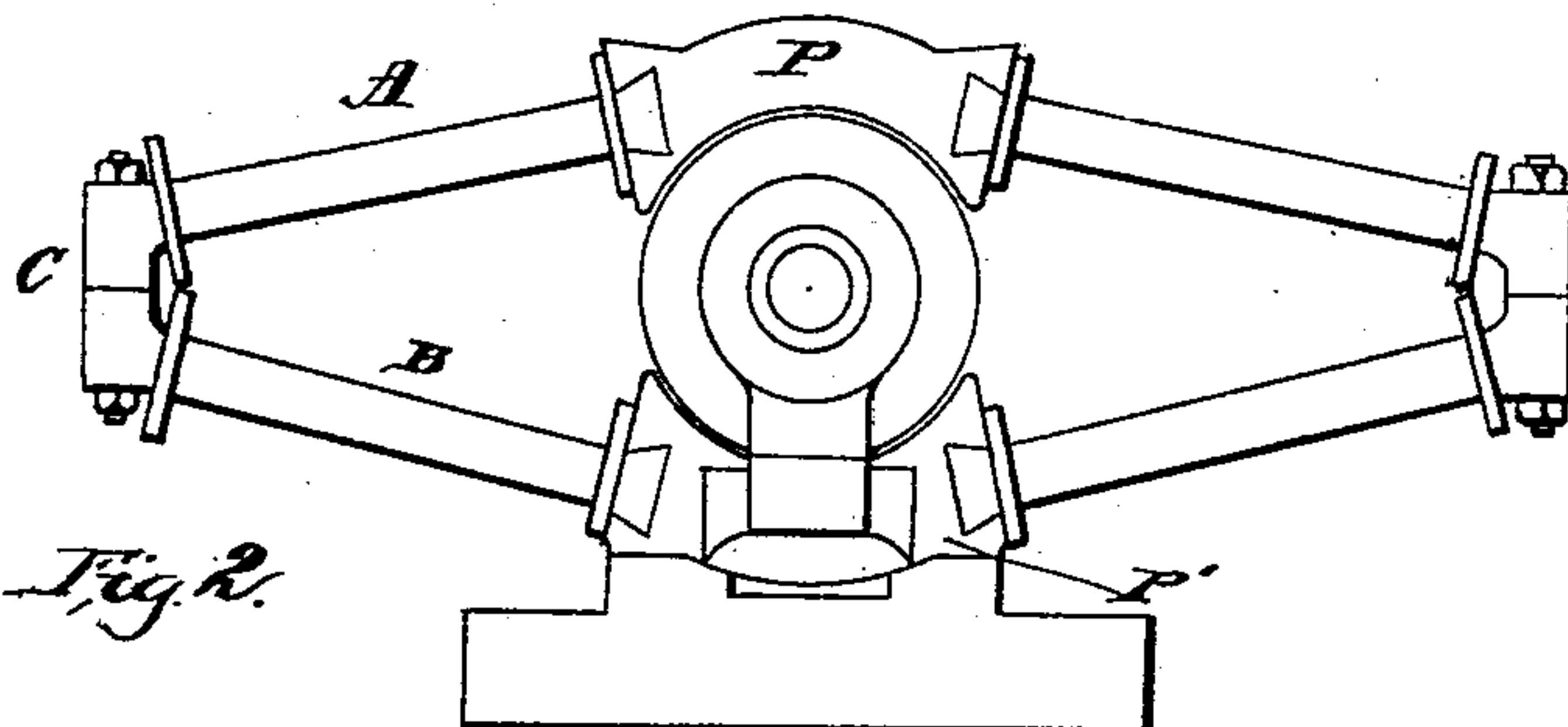


Fig. 2.

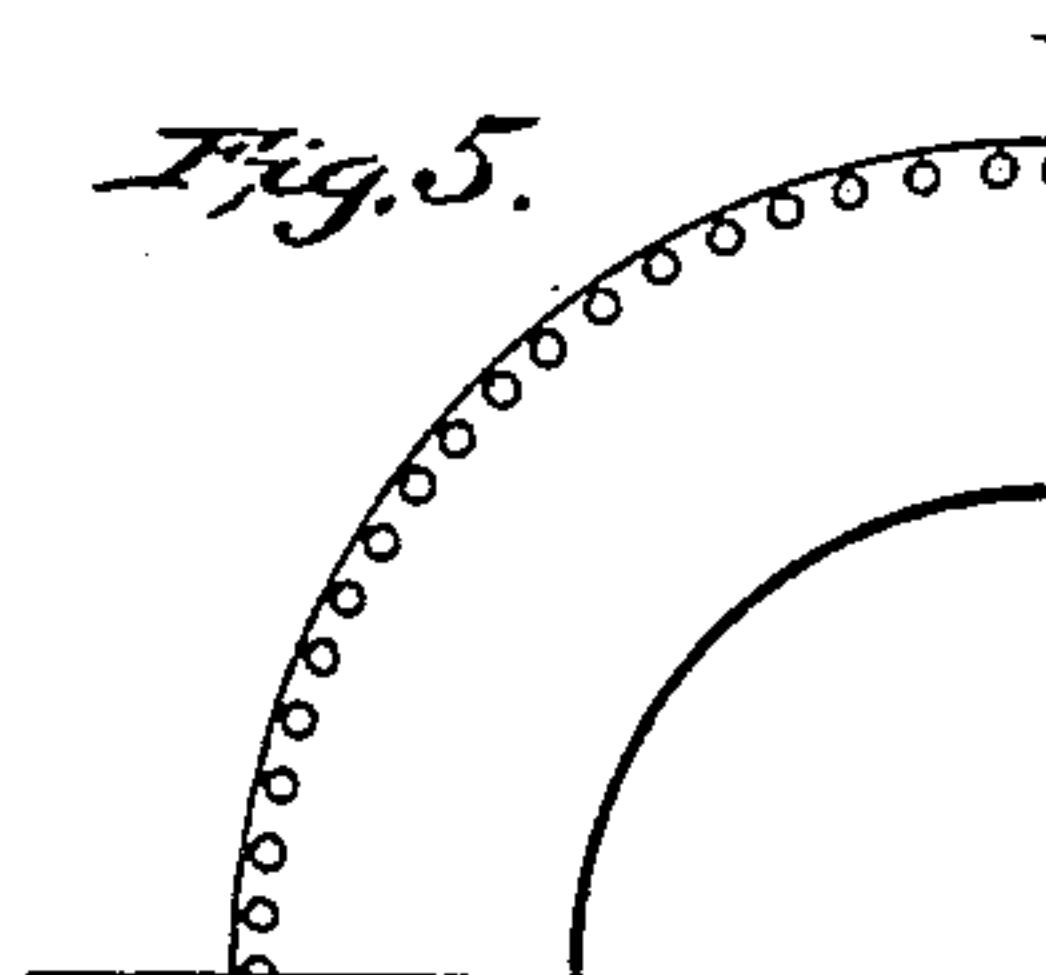
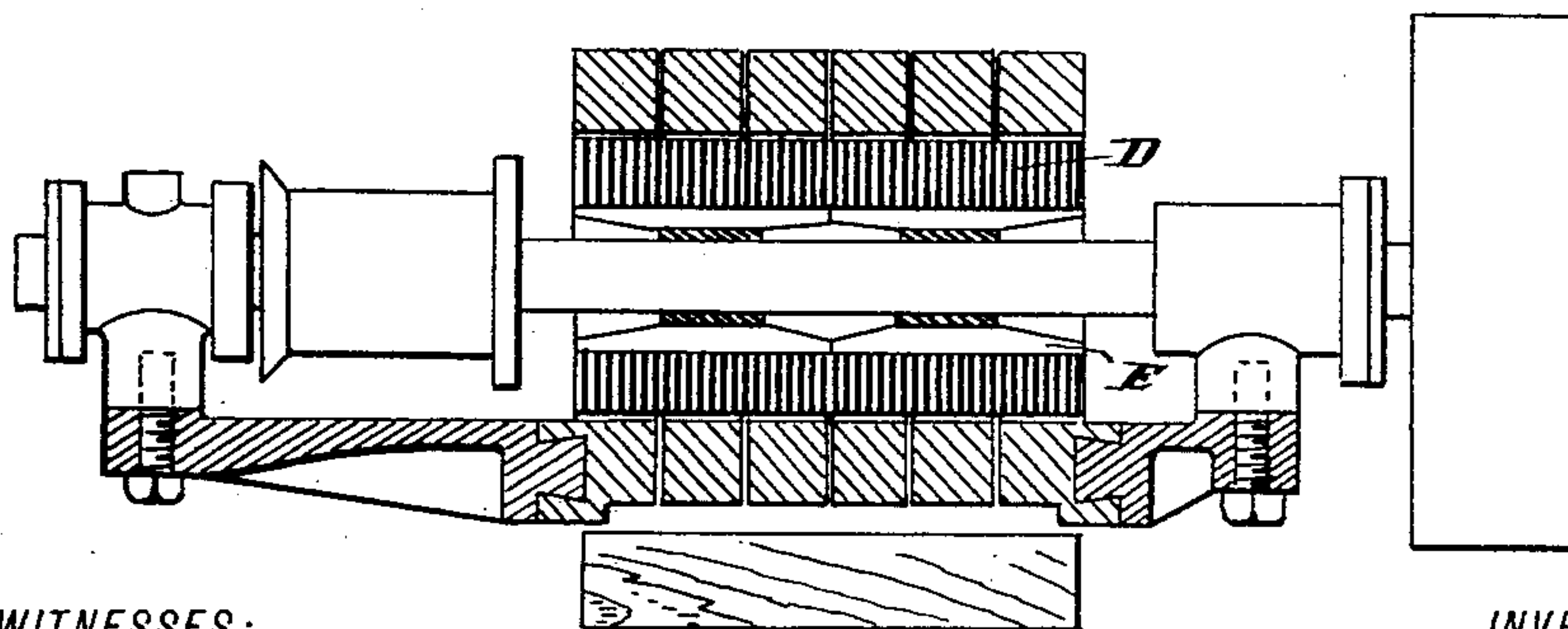


Fig. 5.



WITNESSES:

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Fig. 3.

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UNITED STATES PATENT OFFICE.

W. FORMAN COLLINS, OF NEW YORK, N. Y.

DYNAMO-ELECTRIC MACHINERY.

SPECIFICATION forming part of Letters Patent No. 393,742, dated December 4, 1888.

Application filed September 24, 1887. Serial No. 250,572. (No model.)

To all whom it may concern:

Be it known that I, W. FORMAN COLLINS, a subject of the Queen of Great Britain, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Dynamo-Electric Machines, of which the following is a specification.

My invention relates to certain improvements in the details of construction of dynamo-electric machines or motors, which will be specifically described in the following specification, and pointed out in the claims.

In the accompanying drawings, Figures 1 and 2 are respectively a plan and end elevation of my machine. Fig. 3 is a transverse section through the armature. Fig. 4 is a section through the pole-pieces and armature, showing the wire upon the core. Fig. 5 is a diagram illustrating the electrical connections. Fig. 6 is a modification.

Referring to the drawings, the field-magnet of my machine is illustrated in Figs. 1 and 2. It is formed of four cores, which are joined to form a diamond-shaped frame.

Each pair of magnet-cores A B are joined by bolts through their ends C, and are dovetailed into the pole-pieces P P', respectively, so that there will be no contraction in cross-section which will affect the magnetic conductivity of the metal.

The pole-pieces are laminated in a direction transverse to the shaft of the armature, so that there is no circulation of Foucault currents, and a better ventilation of the armature is secured.

The armature is supported in bearings extending from the lower pole-piece on either side. It is of the drum-type and consists of a series of plates, D, fastened to the spider E, which in turn is carried by the shaft. The armature-core is grooved longitudinally on its

periphery to accommodate the wires F. A groove is made for each wire, and a small wall of iron is left between each two wires. By this means the wires are protected from injury and the iron of the core brought into much closer proximity to the pole-pieces. Instead of the grooves, a series of longitudinal holes may be made near the periphery and the wire wholly inclosed by the iron of the core.

The usual Siemens method of winding may be employed, instead of the arrangement shown.

What I claim, and desire to secure by Letters Patent, is—

1. In a dynamo-electric machine or motor, the combination, with the armature provided with substantially semicircular grooves in its outer surface, of the wire which forms the winding of the armature, the said wire being wound only on the outside of the armature, and a wire or wires being laid in each groove in such a manner that the said wires lie entirely below the surface of said armature.

2. In a dynamo-electric machine or motor, the four cores of the field-magnets, each pair of cores being bolted together at one end C, and at the other end dovetailed to pole-pieces P P', respectively, so as to form a diamond-shaped frame, and an armature therefor having its bearings upon opposite sides of the lower pole-pieces and its periphery grooved longitudinally, one groove for each wire, with a thin wall of iron between each two wires, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

W. FORMAN COLLINS.

Witnesses:

WM. A. ROSENBAUM,
AUGUSTUS MERRITT.