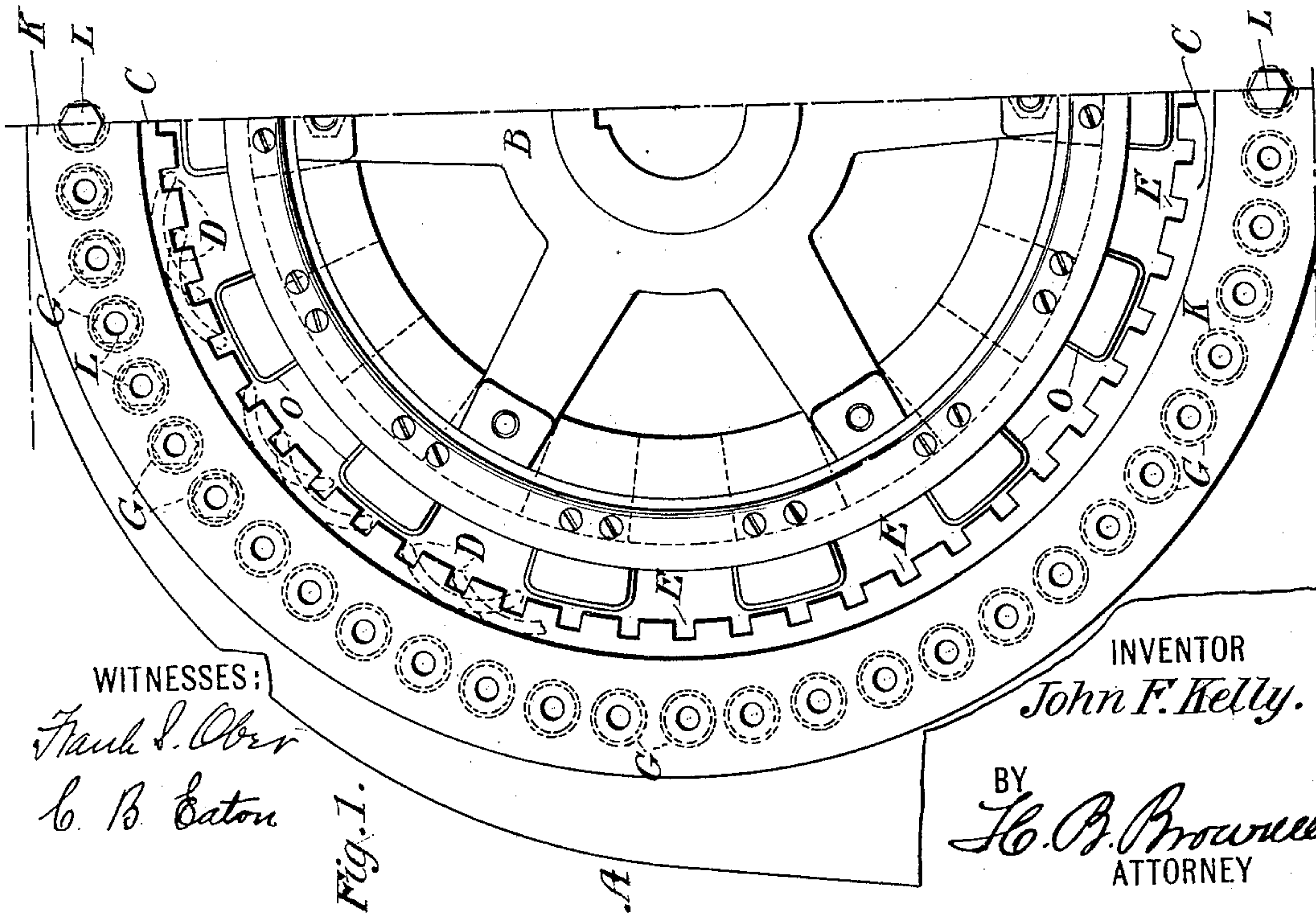
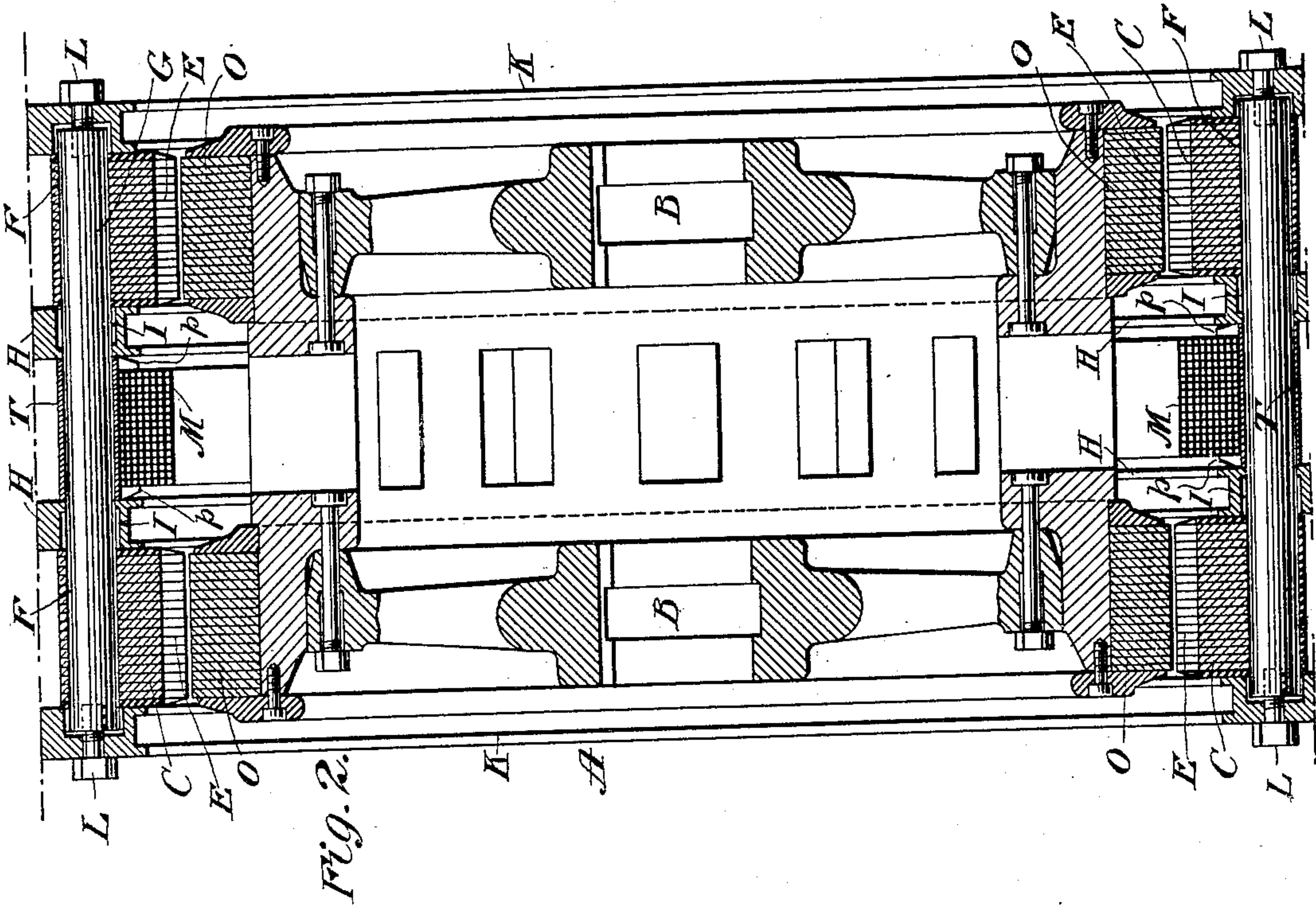


(No Model.)

J. F. KELLY.  
DYNAMO ELECTRIC MACHINE.

No. 559,531.

Patented May 5, 1896.



WITNESSES:

Frank S. Ober  
C. B. Eaton

Fig. 1.

INVENTOR

John F. Kelly.

BY

H. B. Brownell

ATTORNEY



# UNITED STATES PATENT OFFICE.

JOHN F. KELLY, OF PITTSFIELD, MASSACHUSETTS, ASSIGNOR TO THE  
STANLEY ELECTRIC MANUFACTURING COMPANY, OF SAME PLACE.

## DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,531, dated May 5, 1896.

Application filed January 18, 1896. Serial No. 575,968. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. KELLY, a citizen of the United States, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, have invented a new and useful Improvement in Dynamo-Electric Machines, of which the following is a specification.

My invention relates to improvements in dynamo-electric machines, whether generators or motors, of the general form of that shown in Patent No. 499,446, granted to William Stanley, Jr., and myself on the 13th day of June, 1893, in which the armature is made up of two stationary rings carrying fixed coils, the two rings in that patent being embedded in and connected by solid massive framework portions, forming a bridge for a part of the magnetic circuit through which the effective flux of the machine passes.

My invention has for its object to secure in such machines a more steady and fixed magnetic flux in certain parts and at the same time provide greater rigidity, lightness, and ventilation in the structure.

The following is a description of my invention, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a part of a dynamo-electric machine embodying my invention, and Fig. 2 is a sectional view of the same.

In the drawings, A represents one half of the armature of an alternating-current generator, which may be of single or double phase, according to how it is wound, or can be reversed and be used as a motor.

B represents one half of the inductor. The other halves of the armature and inductor are duplicates of those shown and described. The armature A is stationary and is composed of two rings C C of laminated iron, the laminations being in a plane at right angles to the axis. These two rings are preferably made up of two equal segments. They carry the stationary armature-coils D D, lying in grooves E E in their faces, and have holes F F, in which are wrought iron or steel bolts or bars G G. These bolts or bars, as shown, extend through the rings and serve to keep the rings and framework fastened together, while at the same time forming the bridge for the magnetic flux between the two laminated rings. Be-

tween the armature-rings C C are parts of the framework H H, which are also ring form, following the line of bolts or bars G G and having holes I I, through which these bolts pass. These parts H H of the framework are expanded at their lower portions into feet or standards, which form or are attached to the base of the machine. These parts H H of the framework are braced apart in the present case by iron or steel tubes T T, passed over the bolts or bars G G, it only being necessary to provide some means for keeping them at their proper distance without interfering materially with the ventilation or magnetic flux of the machine. On the outside of the rings C C are placed the outside parts of the framework K K, which are secured to the bolts or bars G G by screw-bolts L L, whereby the parts of the armature and framework are all secured together in their proper relations. The lower portions of the parts K K are also expanded. Between the rings C C of the armature the coil M is placed for energizing the inductor. This coil rests upon and is supported by the bolts G G, and surrounds the inductor B with its projecting pole-pieces O O. It is kept in the center of the space by the lugs P P.

By using wrought iron or steel bolts or bars G G for the bridge between the laminated rings a more direct and intimate relation of the parts is obtained, each bolt being embedded in and surrounded by the two laminated parts which it is desired to connect. Moreover, by their use the cross-section of the bridge may be materially reduced without interfering with the magnetic flux. In addition the mere breaking up of the bridge into separate pieces is of advantage, in that it tends to check the development of Foucault currents in the bridge should the construction otherwise fail to secure perfectly steady and fixed flux therein. The reduction in cross-section of the bridge results in lightness, while the intimate connections between the rings at numerous points afford great rigidity of structure. Moreover, the spaces around and between the bolts afford good ventilation.

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

1. In a dynamo-electric machine an armature consisting of two stationary laminated

rings, having between them a magnetic bridge formed of bolts or bars, substantially as described.

2. In a dynamo-electric machine an armature consisting of two stationary laminated rings, in combination with connecting bolts or bars embedded in said laminated rings and forming a magnetic bridge between them, substantially as described.

10 3. In a dynamo-electric machine an armature consisting of two stationary laminated

rings, each carrying coils, in combination with connecting-bolts each embedded in both of said rings, and framework supporting and holding the same, substantially as described. 15

In witness whereof I have hereunto set my hand this 15th day of January, 1896.

JOHN F. KELLY.

Witnesses:

C. C. CHESNEY,

A. C. CLARK.