

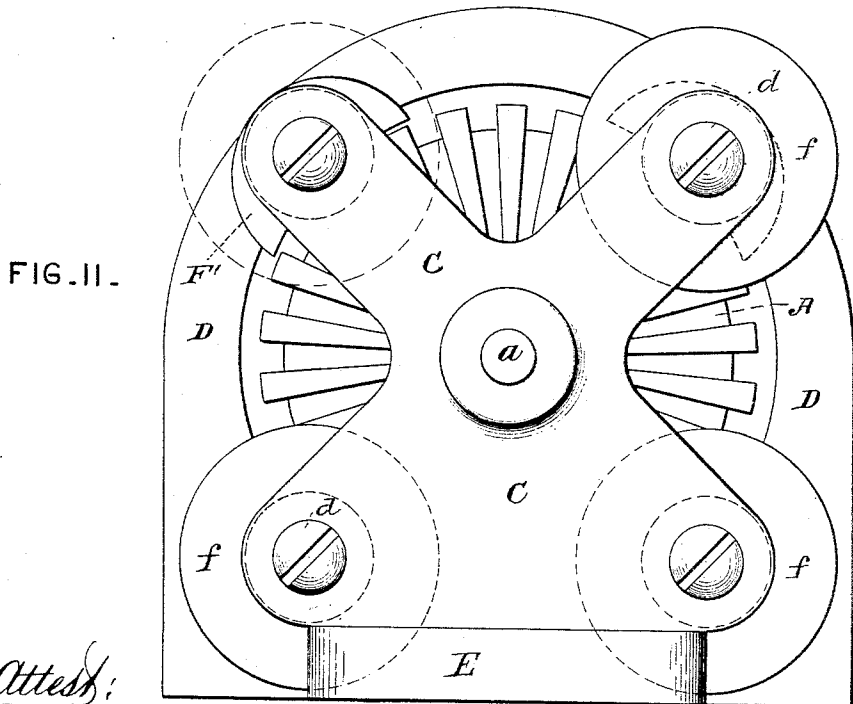
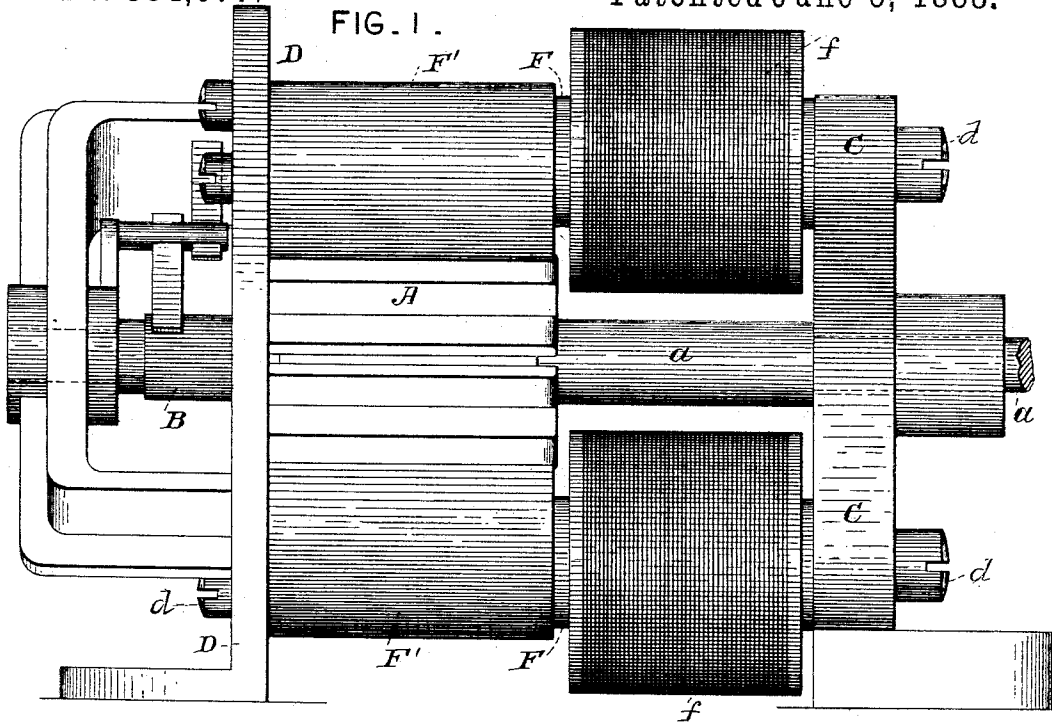
(No Model.)

A. L. RIKER.

DYNAMO ELECTRIC MACHINE OR MOTOR.

No. 384,077.

Patented June 5, 1888.



Attest:  
Geo. T. Smallwood.  
Philip Lawrence

Inventor:  
Andrew L. Riker by  
A. L. Lottok his attorney.

# UNITED STATES PATENT OFFICE.

ANDREW L. RIKER, OF NEW YORK, N. Y.

## DYNAMO-ELECTRIC MACHINE OR MOTOR.

SPECIFICATION forming part of Letters Patent No. 384,077, dated June 5, 1888.

Application filed November 25, 1887. Serial No. 256,132. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW L. RIKER, of New York city, in the county and State of New York, have invented a new and useful improvement in Dynamos and Electric Motors, which improvement is fully set forth in the following specification.

This invention has reference to the construction of dynamo-electric machines or motors, and has for its object to produce a compact machine, showing high efficiency with the minimum cost and weight of metal. It has also been my aim to construct a machine capable of withstanding the continual jar incident to use as motors on land-vehicles, (street-railways, for example.) For such service it is important that the structure should possess great strength and rigidity between its several parts, which cannot be obtained in motors of certain well-known types.

The invention relates particularly to the construction of the field-magnets and the shape and manner of supporting the cores and pole-pieces. Each core and pole is in one piece, being drop-forged from wrought-iron. The core is cylindrical in form. The pole is approximately the form of a semi-cylinder with its inner surface concaved to correspond with the curvature of the ring-armature. This form of pole-piece is found advantageous in that it presents no points or angles for scattering the lines of force, while it dispenses with all superfluous metal. The axis of each pole and core is a continuous straight line parallel with the axis of the armature, and these pieces are bolted firmly between the two uprights or side frames and constitute a part of the supporting-frame of the machine. One of these uprights is an iron casting and constitutes the yoke or neutral portion of the field-magnets. The other support, to which the pole ends of the magnets are bolted, is of brass or other non-magnetic metal. The construction is such as to facilitate manufacture and assemblage of the parts and to produce a very solid structure.

In the accompanying drawings, which form a part of this invention, Figure I is a side elevation of a four-pole dynamo or motor constructed in accordance with the invention, and Fig. II an end elevation thereof.

The construction of the armature A and commutator B is or may be such as described

in my application for patent, filed November 1, 1887, No. 253,971, and therefore requires no particular description here.

The uprights C D are supported by the bed-plate E, and the core F and pole-pieces F' are secured firmly between them by means of bolts *d*, the pieces F being at the four corners of the machine. Each core and its corresponding pole are in one piece, and their axes are parallel with that of the armature shaft *a*. The core portion F is cylindrical, and on it is wound the coil *f* in any suitable way. The exterior surface of the pole portion F' has in cross-section the form of an arc of a circle of larger diameter than the core F. Its inner surface is curved in the opposite direction, the curvature corresponding with that of the armature A.

The upright C is preferably of cast-iron. It constitutes the yoke or neutral portion of the magnets, and in it is one bearing of the armature-shaft *a*.

The upright D is of brass or like metal, being in direct contact with the poles of the field-magnets. The field-magnets being placed at the corners of the machine—that is to say, to the right and left of the armature instead of directly above and below the same—produces a more compact machine, the height and width thereof being but little more than the diameter of the armature.

The operation of the machine is the same as that of other well-known dynamos or motors, and therefore need not be described.

I claim—

In a dynamo or motor, the combination, with the ring-armature, of the four field-magnets, each having its core and pole in one piece of wrought-iron, the outer surface of each pole having the form of an arc of a circle in cross-section, and the uprights to which said pieces are bolted at their ends, said magnets being parallel to the armature shaft and located at the four corners of a rectangle whose base is horizontal, substantially as described.

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

ANDREW L. RIKER.

Witnesses:

A. POLLOK,  
PHILIP MAURO.