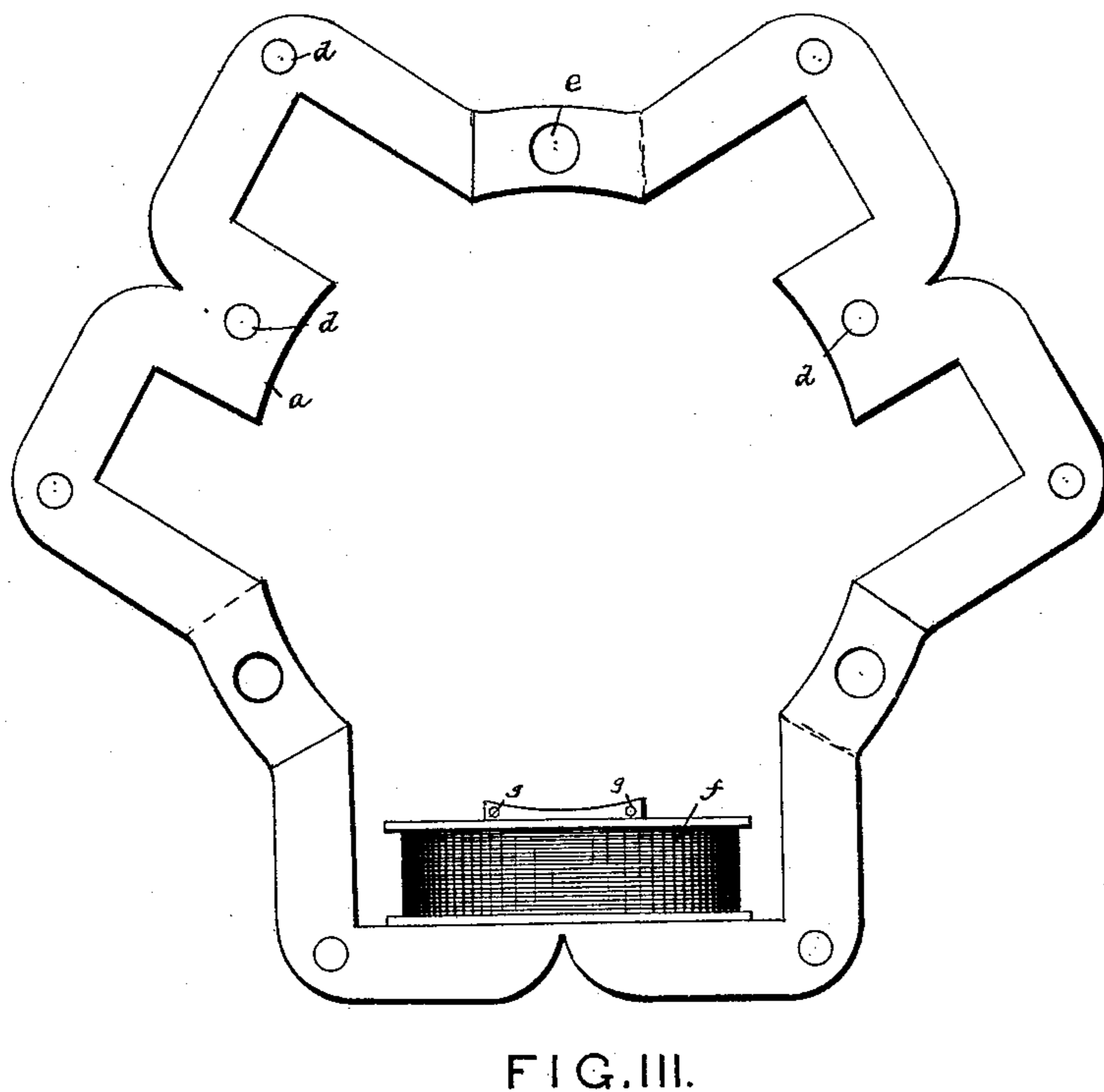
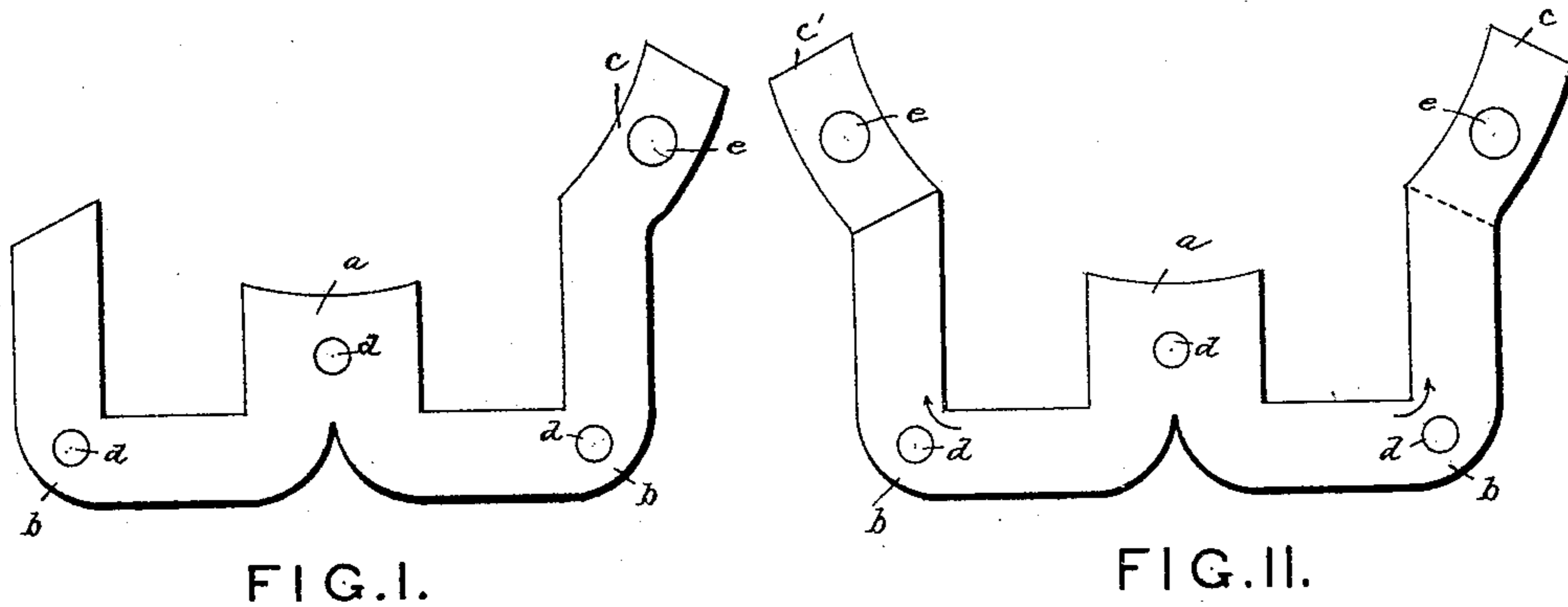


(No Model.)

A. L. RIKER.  
ELECTRIC MOTOR OR GENERATOR.

No. 452,717.

Patented May 19, 1891.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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

## ELECTRIC MOTOR OR GENERATOR.

SPECIFICATION forming part of Letters Patent No. 452,717, dated May 19, 1891.

Application filed February 18, 1891. Serial No. 381,950. (No model.)

*To all whom it may concern:*

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

This invention relates to the construction of electric motors designed for propelling street-cars and like vehicles, and has special reference to the assembling of the laminated frames or supports of the field-magnets of such motors.

The invention may of course be used in the construction of dynamos generally.

The object of the invention is to produce a multipolar field-magnet having its core and pole portions composed of a number of blanks, all of the same pattern, of a size and shape conveniently and easily stamped out of sheet metal, and which can be readily put together and taken apart. The blanks of which the magnetic support of the field-magnet is built up comprises each an inwardly-projecting core-piece and a coil-space around this piece, so that the coils are entirely inclosed by the field-magnet, bringing the motor within the class known as "iron-clads," which are particularly serviceable for the exposed work of propelling vehicles. That portion of the blank surrounded by a coil forms a salient pole, while its ends form consequent poles. The blanks may be constructed and assembled in such manner as to produce a field-magnet having four, six, eight, or a greater number of poles, each alternate pole being a salient pole and the others consequent poles.

The invention is illustrated in the accompanying drawings, in which—

Figure I shows one of the blanks. Fig. II shows how two blanks or series of blanks are placed in building up a section of the field, and Fig. III shows a side view of the completed magnet with one coil in place.

The intermediate part *a* of the blank is the core, the space on each side of it being for the reception of the coil, and the parts *b* are yoke portions connecting core *a*, whose extremity constitutes a salient pole with the adjacent consequent poles. The direction in which the magnetic currents feed is indicated by the ar-

row in Fig. II. A line bisecting core *a*, drawn from the axis of the armature, will divide the blank into two halves, which are exactly alike as to shape, size, position of bolt-holes, &c., except that on one side there is a polar extension *c*, constituting a consequent pole and centrally perforated by a bolt-hole *e*. Consequently, as shown in Fig. II, one blank may be placed upon another turned in the opposite direction and the parts will all register accurately. The extension *c* on the upper blank is shown projecting on one side, while the under blank is reversed, its extension *c'* projecting from the opposite side. A series of blanks built up in this way constitutes one section of the magnetic frame and are secured together by bolts passing through the small bolt-holes *d*. The overlapping polar extensions of adjacent blanks are connected by a bolt passing through holes *e*. Thus the frame is built up, as shown in Fig. III. In the form illustrated it is composed of three sections, each of which is separable from the others at the consequent poles where the ends come together.

In motors used for propulsion of vehicles the coils have frequently to be replaced. In a magnet constructed as shown this can be quickly accomplished by drawing out the two bolts which hold the section and removing the latter. The old damaged coil can then be slipped off and a new one already wound on a bobbin or spool placed over core *a*. One coil *f* is indicated in Fig. III. It is held in place by small pins *g*.

Field-magnets with continuous laminated frames have special advantages in motors of this description, particularly where toothed armatures are employed, and by means of the present invention such frames can be constructed expeditiously with a comparatively small and inexpensive die and admit of the ready removal of any one of the core portions independently of the others whenever its coil has to be renewed.

Having now fully described my said invention, what I claim is—

1. In a dynamo or motor, a continuous magnetic frame for the field-magnet, built up of interlocking sections connected at their ends by a single bolt, each section composed of a series of blanks all of the same pattern, and

each blank comprising an inwardly-projecting core with an inclosed coil-space on each side thereof and a polar extension on one side, substantially as described.

5 2. In a dynamo or motor, a continuous magnetic frame having a series of alternating salient and consequent poles, said frame being composed of interlocking sections built up of flat stamped-out blanks all of the same  
10 pattern, each section comprising an inwardly-projecting core whose end constitutes a salient pole and on each side thereof a portion of the adjacent consequent poles, so that each section is separable from the contiguous sections at the consequent poles, substantially  
15 as described.

3. A sheet-metal blank for building up a frame for an iron-clad field-magnet, said blank having an intermediate inwardly-projecting core, a coil-space on each side thereof, yoke 20 portions on opposite sides of said coil-space and inclosing the same, and a polar extension from one of said yoke portions, said extension being centrally perforated, substantially as described. 25

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

ANDREW L. RIKER.

Witnesses:

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CHARLES M. KIRBY.