

(No Model.)

2 Sheets—Sheet 1.

A. L. RIKER.

MAGNETIC FRAME FOR FIELD MAGNETS.

No. 507,689.

Patented Oct. 31, 1893.

Fig. I.

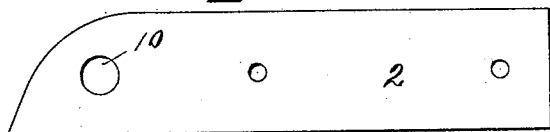


Fig. II.

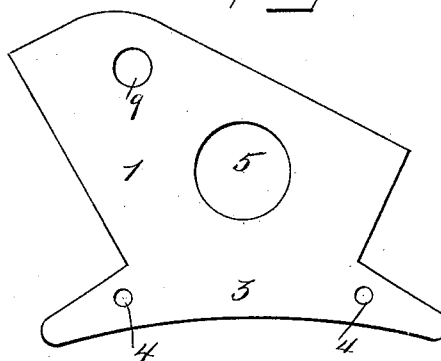


Fig. IV.

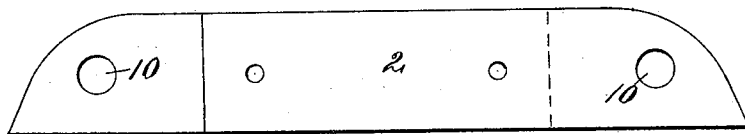


Fig. V.

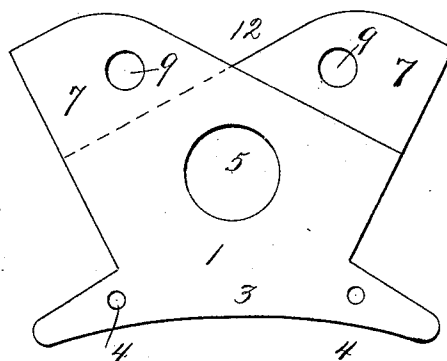
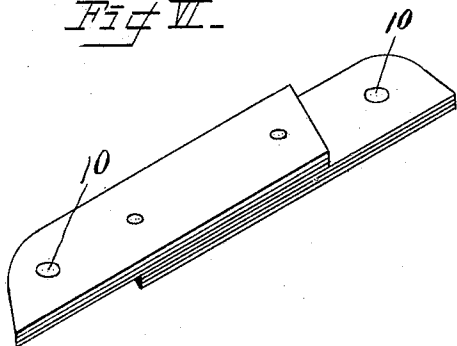


Fig. VI.



Attest

Arthur A. Cobb.
Reverend Lewis

Inventor.

Andrew L. Riker
by Edward Mauro,
his attorney.

(No Model.)

2 Sheets—Sheet 2.

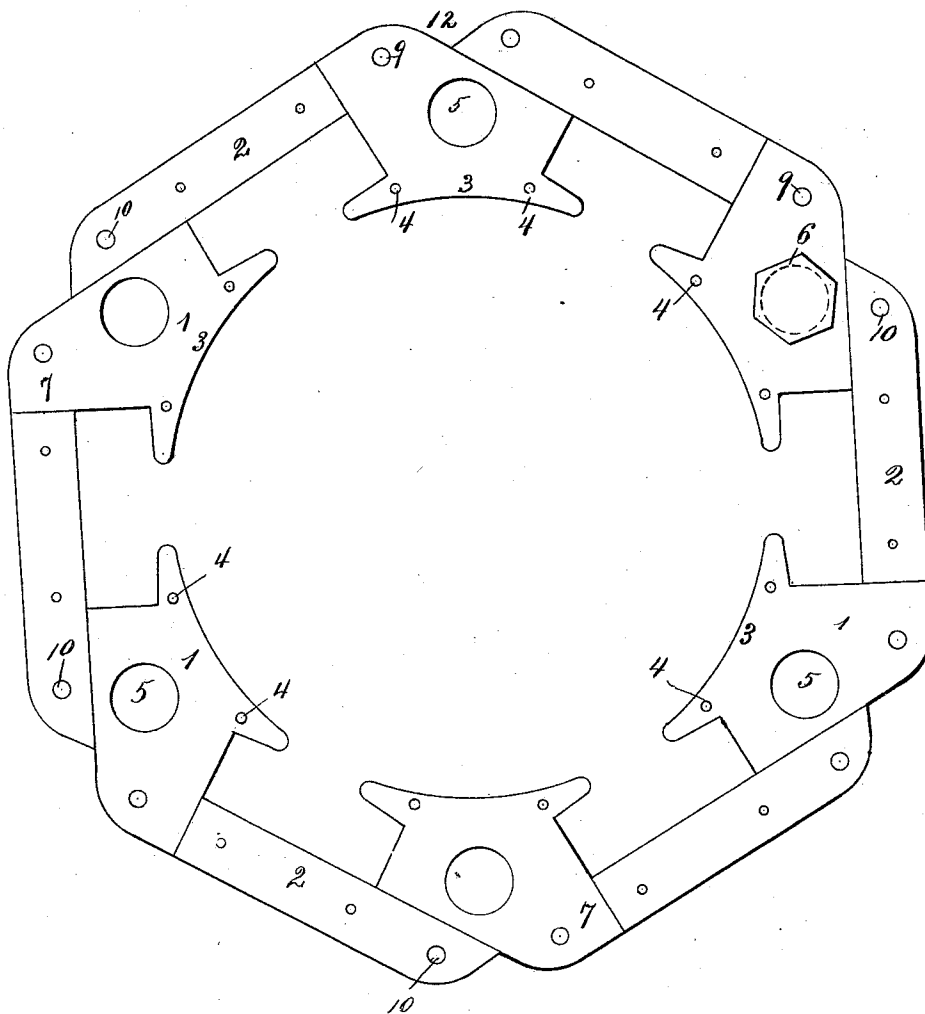
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Fig. III.



Attest.
Arthur A. Erb.
Reverend Lewis

Inventor
Andrew L. Riker
by J. H. D. Manno
his attorneys.

UNITED STATES PATENT OFFICE.

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

MAGNETIC FRAME FOR FIELD-MAGNETS.

SPECIFICATION forming part of Letters Patent No. 507,689, dated October 31, 1893.

Application filed July 27, 1893. Serial No. 481,603. (No model.)

To all whom it may concern:

Be it known that I, ANDREW L. RIKER, of New York city, New York, have invented a new and useful Improvement in Magnetic Frames for Field-Magnets, which is fully set forth in the following specification.

The present invention has reference to the construction of magnetic frames for the field-magnets of multipolar dynamos or motors and more especially to the construction of laminated frames, built up into a solid structure from blanks or stampings of soft wrought iron. Structures of this general character are described in Letters-Patent granted to me November 20, 1888, No. 393,266, and May 19, 1891, No. 452,717. In both of these structures the continuous frame was built up of elements of the same pattern, and so put together that it could be separated into two like parts. In the later patent the frame was of the "iron-clad" type having inwardly projecting cores upon which the spools of wire could be readily placed. In the former patent the construction was such that the wires had to be wound directly upon the cores. Both structures required the use of blanks of large dimensions.

The general plan or principle of construction here referred to is found to be practical both mechanically and electrically, and to result in highly efficient machines, and the object of the present invention is to improve upon the modes of construction pointed out in the aforesaid patents, particularly for machines of large size, to facilitate and cheapen the construction of such machines, and to realize other advantages as will be apparent from the detailed description contained herein.

The construction hereinafter described and claimed has been found in practice to be very advantageous for the purpose specified, and applicable to machines varying from machines of medium size to those of the largest capacity.

The main feature of the present invention consists in the employment of two blanks, which may be distinguished as the core-blank and pole blank, respectively, and in the shape of these blanks, which gives them reversibility and permits the core sections and pole sections to be built up and bolted together, half of the entire number of blanks in each being turned in one direction and half in the other.

The invention permits each section to be fitted solidly into the adjacent sections by tongue and groove joints making a structure of great strength, yet from which each section can be taken out separately without disturbing other parts of the frame. Furthermore these results are attained without any superfluous metal in the frame, and with a minimum of wastage in cutting the sheets from which the blanks are stamped.

The invention, and its advantages, will be better understood by reference to the accompanying drawings, in which—

Figure I represents the shape of a pole blank, and Fig. II the shape of a core blank. Fig. III represents in elevation the outline of a six-pole dynamo or motor. Figs. IV and V are details illustrating how the pole-sections and core sections are built up. Fig. VI a perspective view of a finished pole-section.

The shape of the blanks 1, 2 and the manner in which they are laid together to form a solid continuous ring (without overlapping parts) will be understood from the drawings. It will also be observed from Fig. III that each blank can be turned in the opposite direction from that which it occupies in that figure, and that the resulting ring will fit exactly upon that shown in the figure with perfect coincidence of all the bolt holes. The blank 1 has an inwardly projecting polar extension 3 in which are two small rivet holes 4. It also has a large central bolt hole 5 through which pass the large bolts 6 (Fig. III) which clamp the magnet frame between the iron rings usually placed at the sides of the machines of this type. In building up the blanks 1 to form a pole-section I usually take a group of four or five blanks together in the same position; and then a group of equal number in the reverse position, as shown in Fig. V. When so arranged each blank has a portion 7 projecting at one side beyond the edge of the oppositely turned blanks, forming recesses or spaces in the otherwise solid figure. These recesses or spaces are exactly filled by the curved ends of the core-sections, making the frame solid throughout. In the projecting part 7 of the core sections are bolt holes 9, and in the corresponding parts of the core blanks 2 are similar holes 10. A single bolt

passing through these overlapping parts fastens adjacent sections together in such manner that any section can be removed independently of the others. The shape of the blanks and the manner of assembling them result in depressions 12 in the frame opposite the middle of each pole-piece, at which points it is desirable to diminish the thickness and magnetic-capacity of the ring.

10 The method of building up large solid frames from blanks of small size, and in separate detachable sections I believe to be entirely new. Obviously it may, with slight modification, be applied to machines having 15 eight or more poles.

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

A laminated field-magnet frame for multi-

polar dynamos or motors composed of two 20 sets of blanks or stampings shaped as described, one set forming the pole sections, and the other the core-sections, portions of the blanks in each section being turned in opposite directions, the pole sections having 25 large central bolt holes, and other bolt holes in the projecting portions of the blanks for connection with the core-sections so that each section is detachable from its adjacent sections, substantially as described. 30

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

ANDREW L. RIKER.

Witnesses:

CORNELIUS J. JORDAN,
WM. W. RICHARD.