

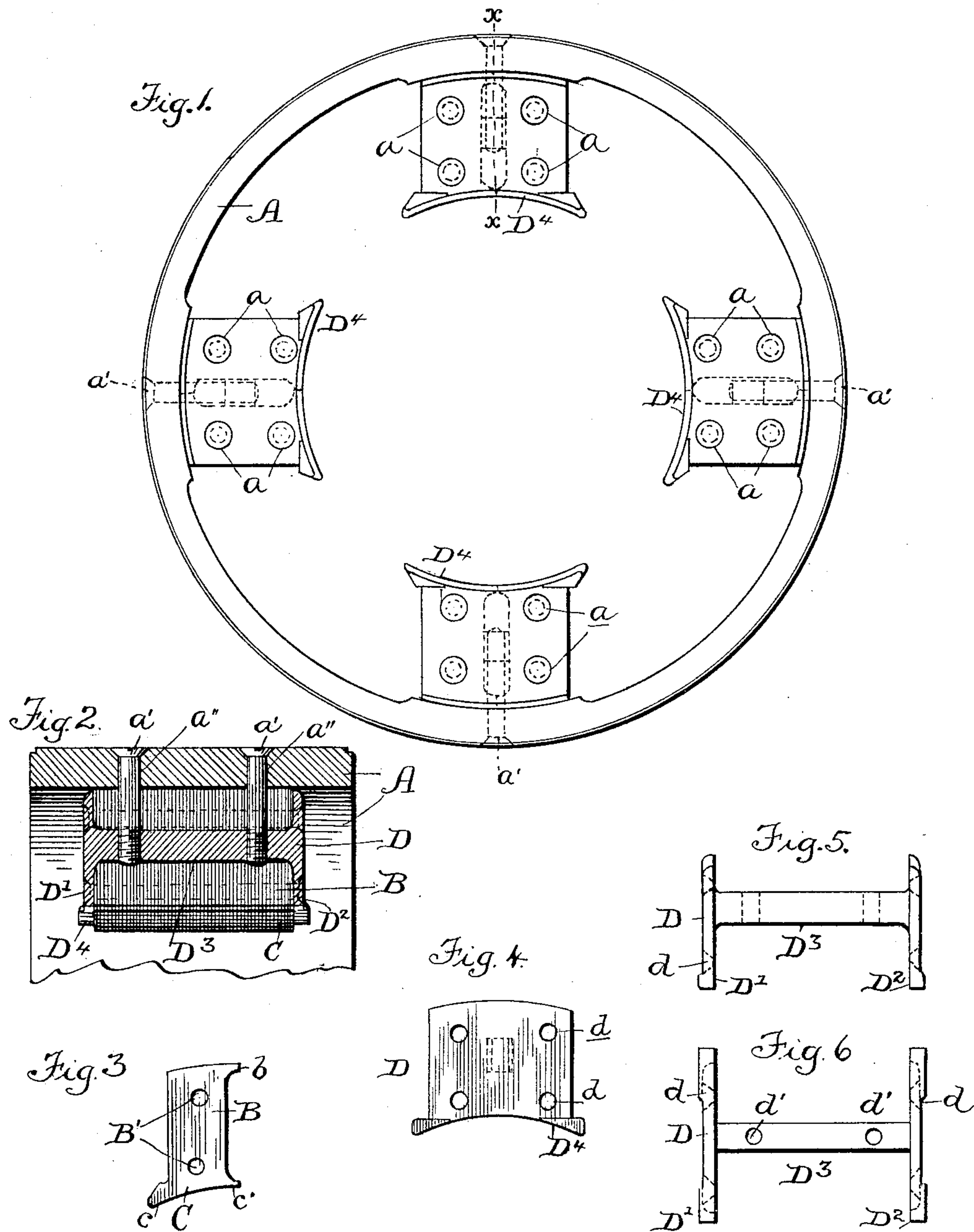
No. 640,603.

Patented Jan. 2, 1900.

M. S. TOWSON.  
FIELD MAGNET.

(Application filed Sept. 5, 1899.)

(No Model.)



WITNESSES

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# UNITED STATES PATENT OFFICE.

MORRIS S. TOWSON, OF CLEVELAND, OHIO.

## FIELD-MAGNET.

SPECIFICATION forming part of Letters Patent No. 640,603, dated January 2, 1900.

Application filed September 5, 1899. Serial No. 729,535. (No model.)

*To all whom it may concern:*

Be it known that I, MORRIS S. TOWSON, a citizen of the United States, residing at 39 Dunham Place, Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Field-Magnets, of which the following is a specification, reference being had to the accompanying drawings.

10 This improvement relates to that class of dynamos and motors in which the field-magnets are made of laminated material; and the object is to so form the magnet-cores and pole-pieces that they can be readily made and secured in position with economy of labor in construction and assembling.

20 With this object in view the invention consists in the peculiar construction and arrangement of parts hereinafter more particularly described and then definitely pointed out in the claims.

In the accompanying drawings, which represent the preferable form of my invention, Figure 1 is an end view of the field-magnet cores and pole-pieces and their supporting-ring. Fig. 2 is a vertical section through the line *xx* of Fig. 1 of part of the supporting-ring and one of the magnet-cores. Fig. 3 shows in side elevation the shape of the laminated cores. Fig. 4 is an end view of the metal frame for holding the laminations in place. Figs. 5 and 6 are side elevations of said frame, taken at right angles to each other.

35 Referring now to the details of the drawings by letters, A represents the outer ring or frame for supporting the magnets, which frame may be of the usual or any desired construction. To this ring or frame the field-magnets are bolted; but I will proceed to describe the construction of the magnets themselves before setting out the manner of bolting the magnets to the ring.

45 The magnet-cores B and pole-pieces C are formed of two "chunks" of laminations made of the peculiar form shown in Fig. 3, and these laminations are preferably stamped out with two perforations or bolt-holes B' and the end portion forming the pole-pieces C with projections *c c'*, the outer edge of the pole-pieces, with said projections *c c'*, being formed on a slight curve to conform to the curvature of the armature. (Not shown.) The rear ends

of the laminations may also be formed with projections, as shown at *b*; but these may be omitted, if desired, and, in fact, are left off of those laminations through which pass the securing-bolts, hereinafter mentioned. The frame for holding these laminations in place is represented by the letter D, and consists of two ends D' D<sup>2</sup>, connected together by the web D<sup>3</sup>. The ends D' D<sup>2</sup> are perforated at *d* and have their inner surfaces D<sup>4</sup> (see Fig. 4) formed on the same curve as that of the pole-pieces C. The web D<sup>3</sup> is also drilled and threaded, as shown at *d' d'*. The laminations are secured in the frames D in two chunks, as clearly shown by dotted lines in Fig. 1, and two bolts *a a* firmly secure each chunk into its side of the frame by passing through the perforations *d* in the frame and the bolt-holes B' in the laminations. When the two chunks are thus secured in position, there is left a central air-space between them, with the web D<sup>3</sup> passing therethrough, as shown by the dotted lines in Fig. 1. This web, which, as before stated, is drilled and threaded, forms a means for securing the magnet-core frames to the supporting-ring A without the necessity of drilling or tapping the laminations "end on," which latter is to be avoided, as it is very difficult to drill or tap into a chunk of laminations end on, especially if they are very fine. The frame, with its laminated magnet-cores and pole-pieces, is now ready to be secured to the supporting-ring, and this is accomplished by placing bolts *a'* through the perforations *a''* in said ring and screwing them between the chunks of laminations into the threaded holes in the web D<sup>3</sup>, when the frame and laminations will be most securely but detachably held to the supporting ring or frame.

From the above description and accompanying drawings it will be seen that I have produced an exceedingly simple field-magnet that is most economical to make, is easily placed in position, and is formed of two sets of laminated material with an air-space between them.

I am of course well aware that it is old in the art to make field-magnet cores and pole-pieces of laminated material held between two plates and bolted to a frame and do not claim such as my invention; but I believe



I am the first to form a laminated field-magnet by having two sets of laminations held in a frame, with the securing-bolts passing into a web of the frame between the said sets  
5 of laminations, thereby avoiding the necessity of drilling and tapping the laminations end on.

What I claim as new is—

1. In a dynamo or motor, a frame having two  
10 separate sets of laminations secured therein, and means for securing said frame in place, the said securing means passing into said frame between the sets of laminations, substantially as described.

15 2. In a dynamo or motor, a frame having two independent sets of laminations secured therein, a web forming part of said frame, and means for securing said frame in position, the said securing means passing into  
20 said web between the sets of laminations, substantially as described.

3. In a dynamo or motor, a frame having two independent sets of laminations secured therein with an air-space between them, a web forming part of said frame and located  
25 between said sets of laminations, and retaining-bolts passing between said sets and into the said web, substantially as described.

4. In a dynamo or motor, a frame having two sides connected by a web, two sets of lamina-  
30 tions secured in said frame, one on each side of said web, and retaining-bolts passing between said sets of laminations and into said web, substantially as described.

In testimony whereof I affix my signature  
35 in the presence of two witnesses this 25th day of August, 1899.

MORRIS S. TOWSON.

Witnesses:

MONA KERRUISH,  
MAUD KERRUISH TOWSON.