(No Model.) 2 Sheets—Sheet 1.

W. LAHMEYER.

DYNAMO ELECTRIC MACHINE.

No. 370,794. Patented Oct. 4, 1887.

Fig. 1.

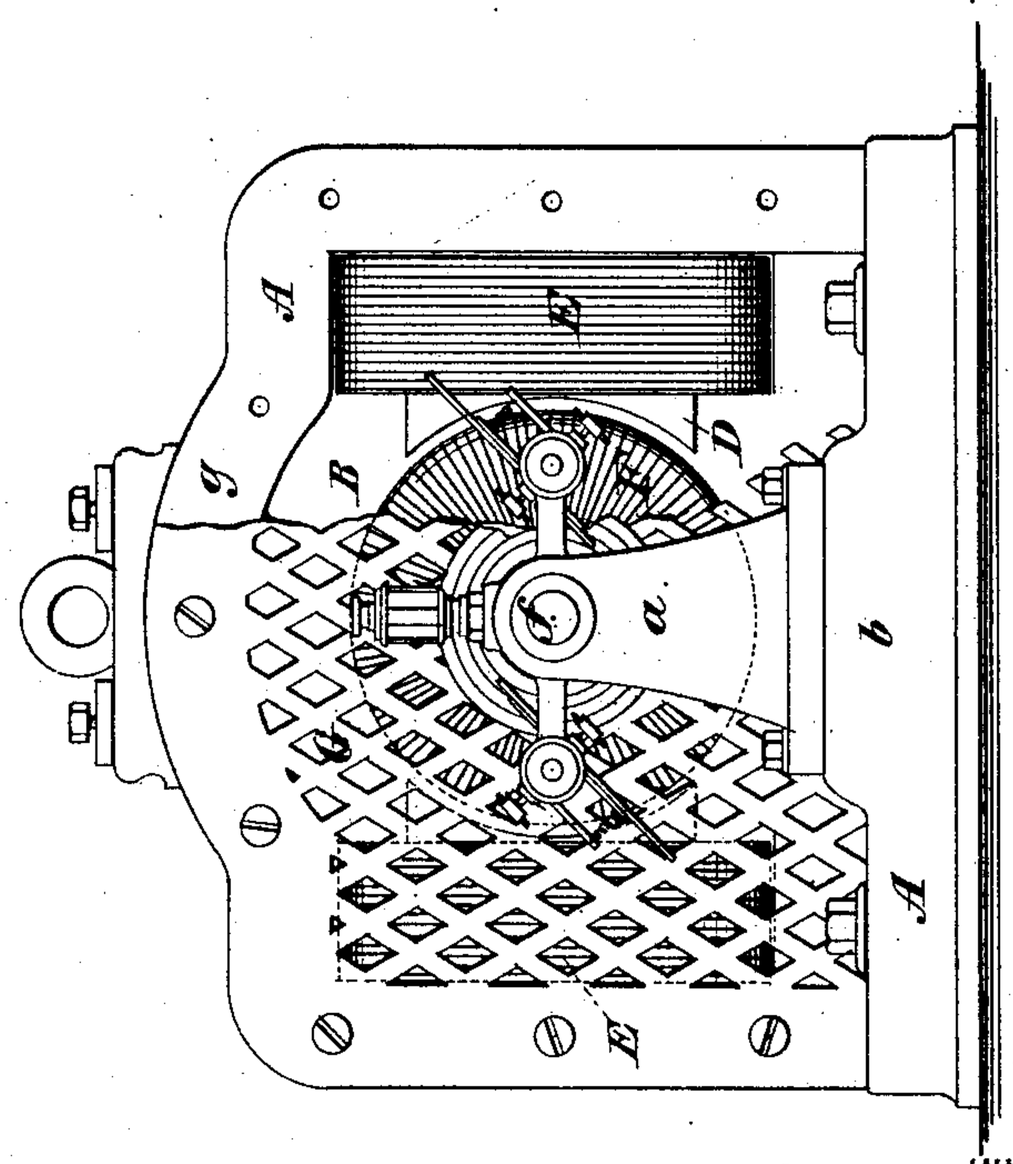
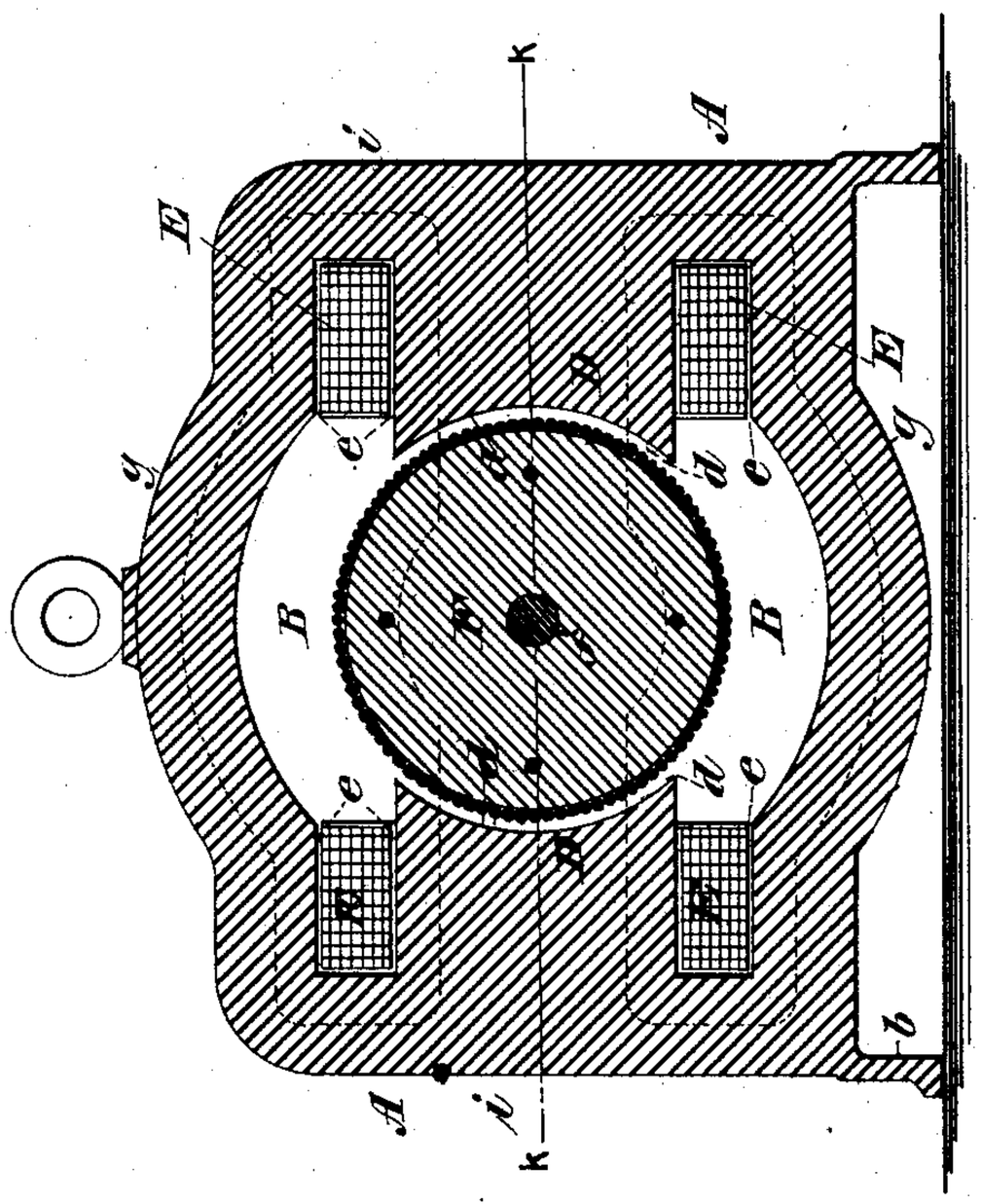


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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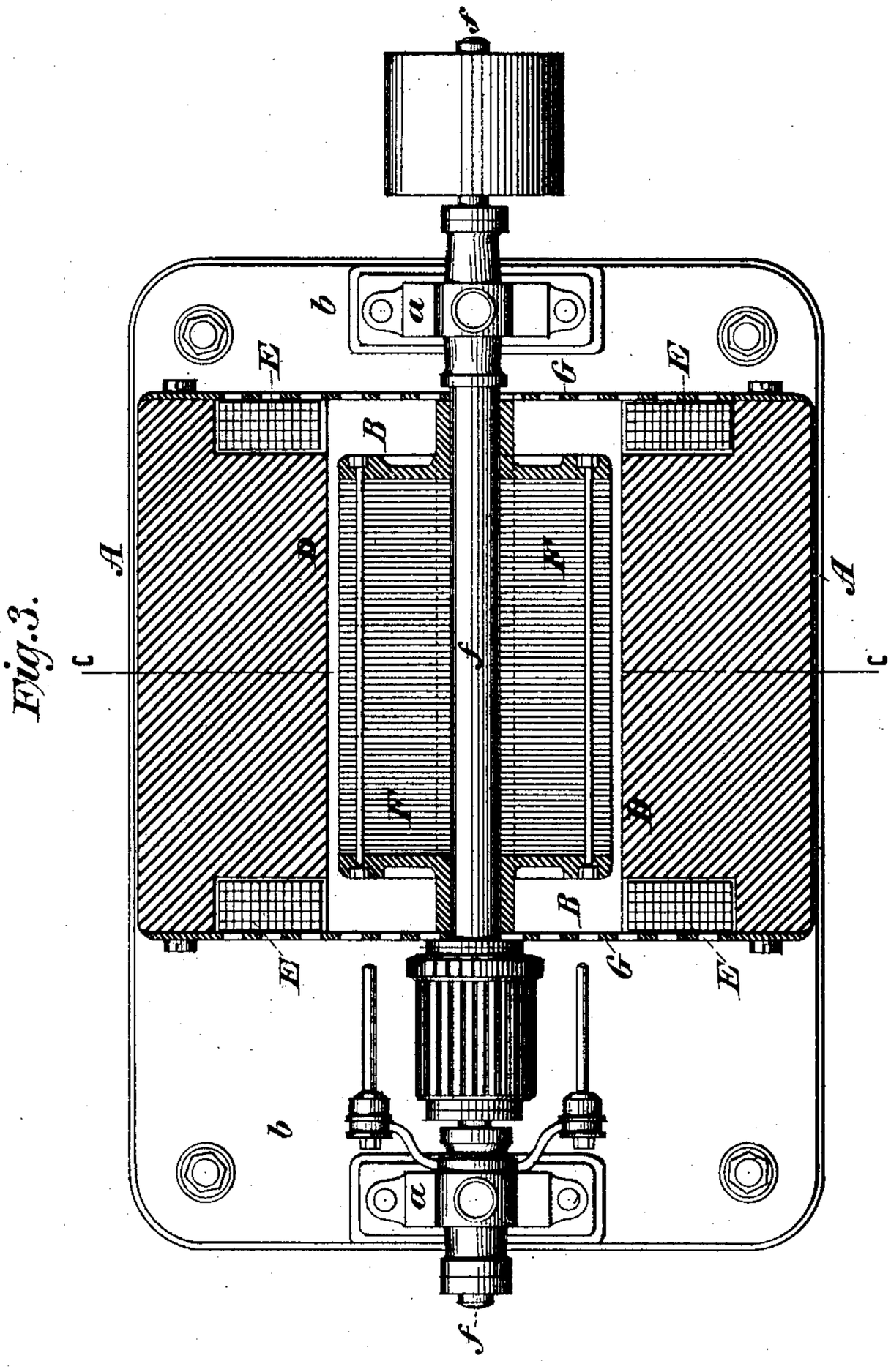

Fig. 3.

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UNITED STATES PATENT OFFICE.

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DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 370,794, dated October 4, 1887.

Application filed April 14, 1887. Serial No. 234,773. (No model.) Patented in Belgium November 15, 1886, No. 75,026.

To all whom it may concern:

Be it known that I, WILHELM LAHMEYER, of Aachen, Prussia, Germany, have invented an Improved Dynamo-Electric Machine, of which the following is a full, clear, and exact description.

The object of my invention is to provide a dynamo-electric machine which will reduce to a minimum the resistance offered to the flow of the electric current by the parts composing the dynamo.

The invention consists in a dynamo the body, cores, and base of which are all cast in one piece of metal in the manner hereinafter described, and in details of construction more fully hereinafter set forth.

Reference is to be had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end view, part being broken away, of a dynamo constructed according to my invention. Fig. 2 is a vertical section taken on line *c c*, Fig. 3, and Fig. 3 is a horizontal section taken on line *k k*, Fig. 2.

One of the most important points in the construction of the electro-magnets of a dynamo-electric machine and their connecting parts, is to so arrange them that a minimum of resistance will be offered to the flow of the electric-current from pole to pole. A great portion of the resistance offered to the current in the dynamo as at present constructed is found in the connections of the various parts of the machine—that is to say, the screws connecting the parts are apt to work loose, thereby separating the parts slightly, causing interruption in the flow of the current, and even the most careful riveting will in time become loosened by and through vibrations and through the constant change from warming and cooling, and especially in damp places the mechanical purity of the joining faces gets lost through rust, &c., and thereby lessens the magnetic intensity. For these reasons I propose to form the frame and poles and certain other parts of a dynamo in one piece, preferably of cast-iron.

The following is the manner in which I construct a dynamo cast in one piece, as above stated.

A, in the drawings, represents the frame of a dynamo-machine, which is left hollow on the inside, forming the cavity B, and stands on a base, *b*.

Projecting inward from the frame A into the cavity B are the two magnetic cores D, of large cross-section, forming the cores of a magnet. The cores D are cast integral with the frame A and with the base *b* thereof. The inner faces of the cores D are formed in the arc of a circle, as at *d*. (Best seen in Fig. 2.) The opposite ends of cores D are brought in good magnetic connection through the arches *g* of the frame A.

E are two coils, which, surrounding the cores D, respectively, make with the cores the electro-magnet. The coils E lie in recesses *e* between the frame A and the cores D. The coils E may either be wound directly on the cores D or they may first be wound in any suitable manner and passed into the cavity B, one by one, between the two cores D, and then slipped over each core and into the recesses *e*, where they are suitably secured.

F is the armature, which may be of any suitable construction. The armature F is passed into the cavity B, and adjusted to revolve between the two faces *d* of the electro-magnets D E. (See Fig. 2.) The armature F is carried by the shaft *f*, journaled in the standards *a*, secured to the base *b*, and is provided with suitable commutators and conductors. (Best shown in Fig. 1.) The shaft *f*, carrying the armature F, may be driven in any suitable manner. Suitable air-holes may be made in the frame to conduct the heat from the magnets.

G are perforated iron plates, secured to the ends of the dynamo-frame A, through which the shaft *f* passes. These plates G help to increase the magnetism of the machine, and also serve to prevent displacement of the movable parts of the machine.

From the above construction it will be seen that I dispense with all joints, pieces, screws, rivets, and connections as ordinarily used for joining the magnets to the frame, thereby giving to the current a continuous and uninterrupted flow, lessening the resistance offered to the current, and creating a more intense magnetism and stronger current with a given expenditure of power over the ordinary construction.

Having now described my invention, what I claim is—

1. In a dynamo, the frame A, parallel cores D D, base *b*, and bridges, *g* cast in one piece, of metal, combined with the perforated plates G, substantially as herein shown and described, and for the purposes set forth.

2. The frame A, magnets D, and base *b*, cast in one piece, combined with the coils E, armature F, and perforated plates G, substantially as shown and described.

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