

No. 725,416.

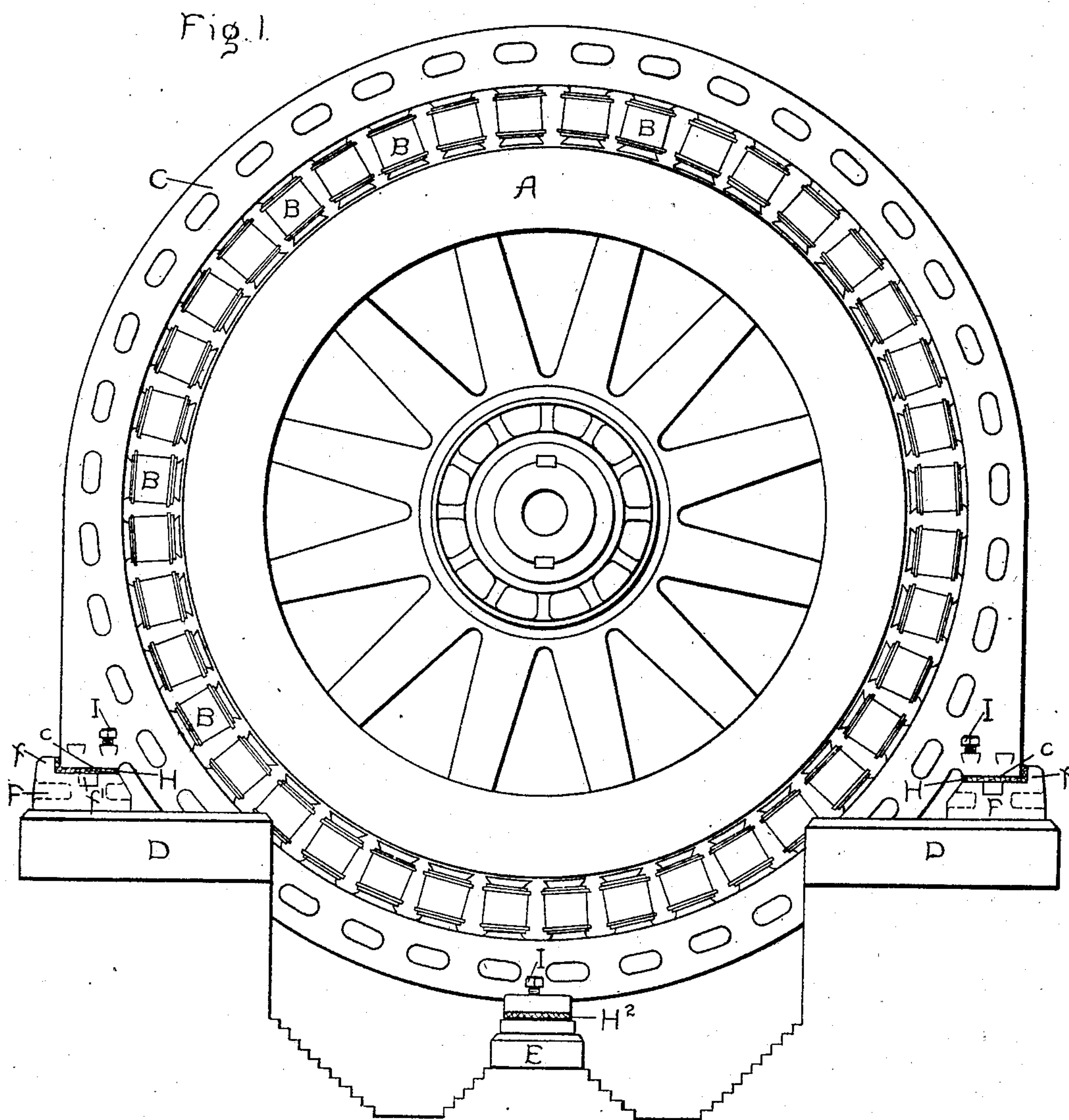
PATENTED APR. 14, 1903.

W. F. DAWSON.  
DEVICE FOR SHIFTING THE FIELD MAGNET FRAMES OF DYNAMO  
ELECTRIC MACHINES.

APPLICATION FILED JUNE 28, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

*Robert L. Chapman*  
*Benjamin B. Hice*

Inventor.

William F. Dawson.

by *Allen S. Davis*

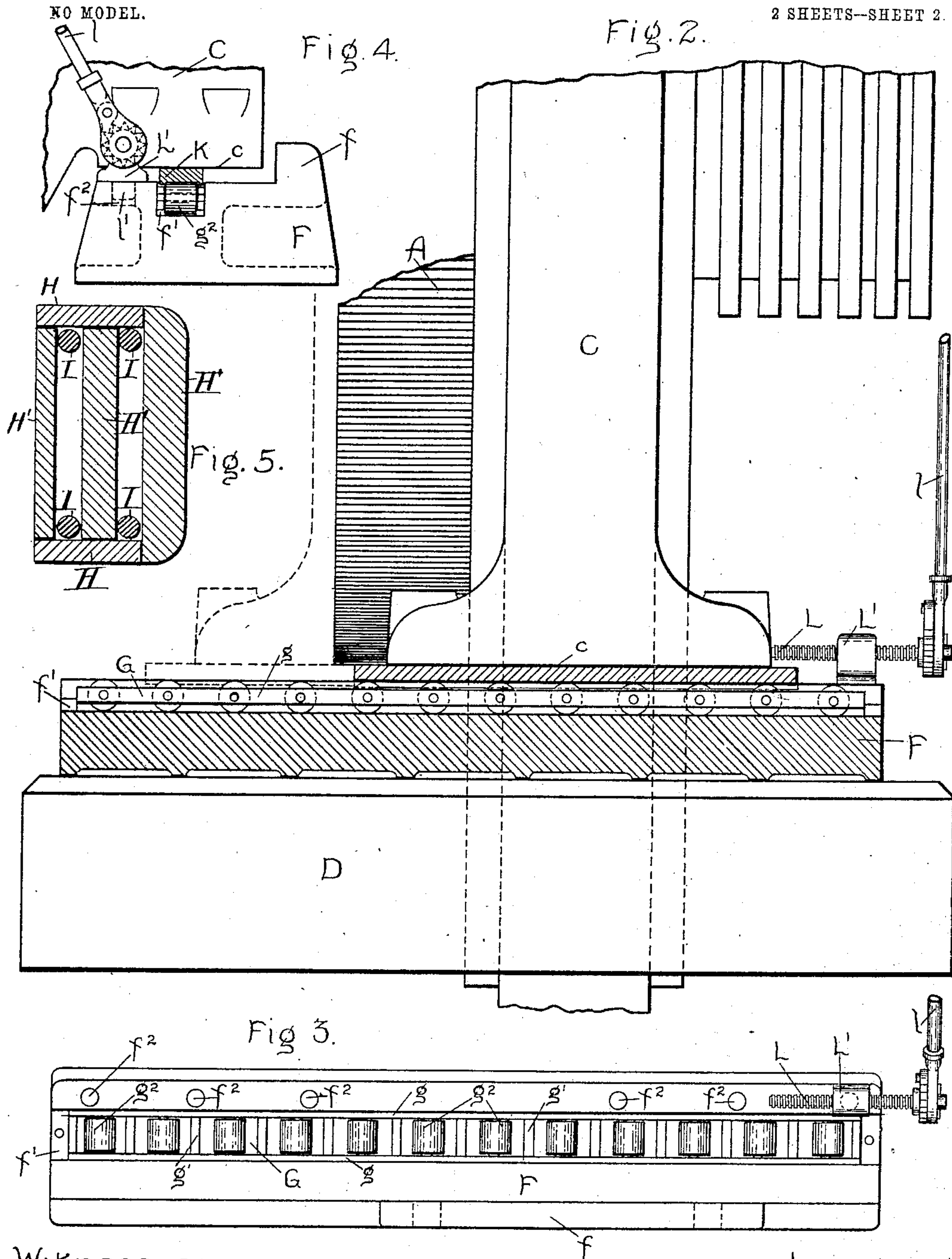
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*Benjamin B. Hall*

Inventor:  
 William F. Dawson.  
 by *Albert S. Davis*

*Atty.*



# UNITED STATES PATENT OFFICE.

WILLIAM F. DAWSON, OF SCHENECTADY, NEW YORK, ASSIGNOR TO  
GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

DEVICE FOR SHIFTING THE FIELD-MAGNET FRAMES OF DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 725,416, dated April 14, 1903.

Application filed June 28, 1901. Serial No. 66,319. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. DAWSON, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Devices for Shifting the Field-Magnet Frames of Dynamo-Electric Machines, of which the following is a specification.

10 This invention relates to dynamo-electric machines; and its object is to provide simple but efficient means whereby the field-magnet of a large multipolar machine can be readily and safely shifted in order to give access to  
15 the armature or other parts. Modern multipolar machines, especially generators, are frequently very large, the field-frame alone weighing sometimes many tons and measuring thirty or forty feet in height. After such  
20 a machine is once set up it is a laborious and often dangerous job to move the field-frame when it becomes necessary to get at the armature to repair it. The present invention aims to facilitate this operation; and to that  
25 end it consists in a carriage arranged under each supporting-foot of the frame, jacking-up screws for lifting and lowering the frame, and portable and changeable jack-screws for effecting an axial movement of the frame after  
30 it has been lowered upon the carriages.

In the accompanying drawings, Figure 1 is an end elevation of a multipolar generator embodying the present invention. Fig. 2 is a side elevation on a larger scale and partly  
35 in section. Fig. 3 is a top plan view of one of the carriages and jack-screws and their bed-plate. Fig. 4 is an end elevation of the same. Fig. 5 is a horizontal section through the plates H and bolts I.

40 In the machine shown the armature A is mounted, as usual, concentric with and inside of the circle of field-magnets B, which project radially inward from the stationary frame C. The lower half of this frame is provided  
45 with a foot *c* at each side, having a horizontal plane lower face to rest upon the foundation D, and thus support the frame. In a large machine one or more additional supports E may be provided under the lower portion of  
50 the frame.

In the present invention the feet *c* are sup-

ported by bed-plates F, mounted on the foundation D and considerably longer than the width of the feet. Each bed-plate has preferably an outside flange *f* and contains a longitudinal groove *f'* and a longitudinal series  
55 of sockets *f*<sup>2</sup>. In each groove is received a long narrow carriage or truck G, composed, preferably, of a cage or frame having side bars *g* and cross-bars *g'* and a plurality of  
60 rollers *g*<sup>2</sup>, rotatably mounted at certain points along the side bars between the cross-bars. The rollers rest on the bottom of the groove, with their tops flush with or preferably a trifle below the plane of the upper surface of  
65 the bed-plate.

When the machine is set up, plates H, of metal, hard wood, or other suitable material, are interposed between the feet *c* and the bed-plates F, the flanges *f* retaining the magnet-frame C in its proper position and the  
70 plates H extending across the grooves *f'* and affording a broad firm bearing for the frame.

In order that the plates H may be readily removed from and placed beneath the feet *c*  
75 when the weight of the magnet-frame is supported by the bolts I, they are divided into sections H', as indicated in Fig. 5.

The feet *c* extend laterally from each face of the frame, affording a wide bearing and  
80 carrying upright jacking-up screw-bolts I. When the field-frame is to be shifted axially, these screw-bolts are run down and lift the feet *c* off the plates H, which can then be removed. A narrow metal bar K is then slipped  
85 in lengthwise of the carriage between the rollers and the feet *c*, as shown in Fig. 4. The bar is preferably provided with flanges fitting down over the ends of the rollers to keep it from accidental lateral displacement. The  
90 screw-bolts I are then slacked off, allowing the frame to drop until the feet *c* rest on the bars K, in which position the frame is supported wholly by the carriages G. The frame  
95 can now be moved axially, the bars sliding along the rollers and the carriages rolling along the grooves. In order to effect this transition steadily and safely, jack-screws L may be used, one on each side, abutting  
100 against the feet *c* and driven by the ordinary ratchet-handle *l*. The screws mesh in nuts L', having laterally-projecting pins *l'*, engag-



ing in the sockets  $f^2$ , which are so spaced that when the screw has made one full traverse another socket will be available for a second operation. The length of the bed-plates and carriages is sufficient to permit the frame to be shifted far enough to completely expose the armature. When the repairs have been completed, the frame is rolled back to its normal position, raised to permit the bars K to be withdrawn, and then lowered upon the replaced plates H.

If a lower support E is used, it is provided with a bearing-plate  $H^2$ , which is removed at the same time with the plates H when the magnet-frame is to be shifted.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with the magnet-frame of a dynamo-electric machine, of roller-carriages under said frame, and means for transferring the weight of said frame to said carriages.

2. The combination with the magnet-frame of a dynamo-electric machine, of supports for said frame, roller-carriages in each support, and means for transferring the weight of the frame from the supports to the carriages.

3. The combination with the magnet-frame of a dynamo-electric machine, of grooved bed-plates under the feet of said frame, roller-carriages in the grooves, and means for transferring the weight of the frame from the bed-plates to the carriages.

4. The combination with the magnet-frame of a dynamo-electric machine, of bed-plates having grooves parallel with the axis of the machine, cages in said grooves, and a plurality of transverse rollers rotatably mounted in said cages and rising no higher than the surface of the bed-plates.

5. The combination with the magnet-frame of a dynamo-electric machine, of bed-plates having grooves parallel with the axis of the machine, roller-carriages in said grooves, and removable plates interposed between the frame and the bed-plates and covering said grooves.

6. The combination with the magnet-frame of a dynamo-electric machine, of bed-plates having grooves parallel with the axis of the machines, roller-carriages in said grooves, and bars adapted to rest on the rollers only and support the frame.

7. The combination with the magnet-frame of a dynamo-electric machine, of roller-carriages to receive and support said frame, and means for moving said frame when so supported.

8. The combination with the magnet-frame of a dynamo-electric machine, of roller-carriages to receive and support said frame, and portable jack-screws for moving said frame when so supported.

9. The combination with the magnet-frame of a dynamo-electric machine, of roller-carriages to receive and support said frame, jack-screws for moving said frame, and means for changing the position of said jack-screws.

10. The combination with the magnet-frame of a dynamo-electric machine, of bed-plates on which said frame is supported, said bed-plates being provided with a series of sockets, and jack-screws having nuts provided with pins to enter said sockets.

In witness whereof I have hereunto set my hand this 25th day of June, 1901.

WILLIAM F. DAWSON.

Witnesses:

BENJAMIN B. HULL,  
MARGARET E. WOOLLEY.