

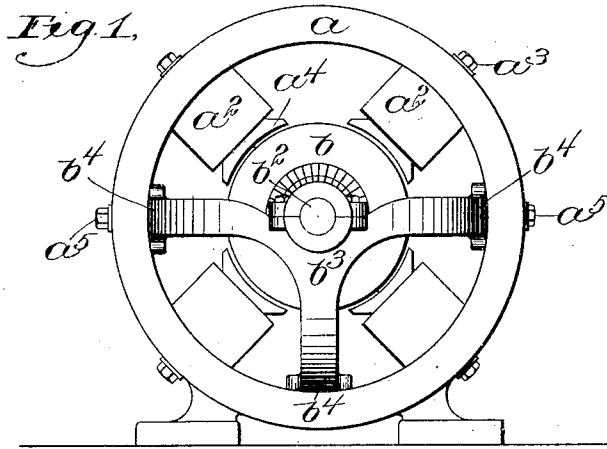
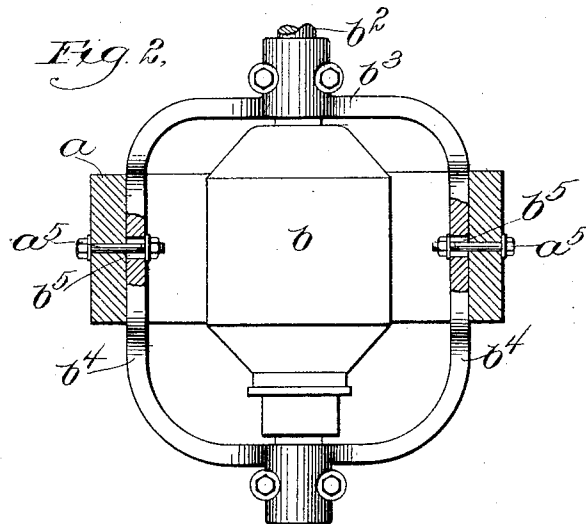
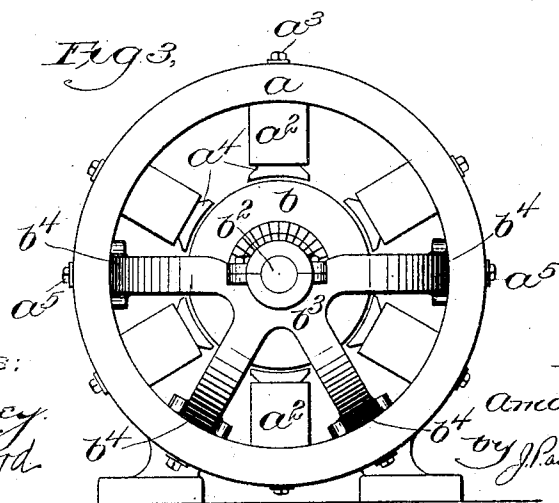
No. 669,573.

Patented Mar. 12, 1901.

A. R. BLISS.
DYNAMO ELECTRIC MACHINE.

(Application filed June 25, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

AMOS R. BLISS, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE NEW ENGLAND MOTOR COMPANY, OF MASSACHUSETTS.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 669,573, dated March 12, 1901.

Application filed June 25, 1900. Serial No. 21,480. (No model.)

To all whom it may concern:

Be it known that I, AMOS R. BLISS, of Lowell, county of Middlesex, and State of Massachusetts, have invented an Improvement in
5 Dynamo-Electric Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 The present invention relates to a multi-polar dynamo-electric machine, and is embodied in a novel construction and arrangement of the field-frame and armature-support whereby the armature and its support
15 are practically independent of the field-frame and adjustably connected therewith, so that the said armature and its support may be adjustably connected with the said frame and the armature properly positioned with relation
20 to the field-magnets without special fitting.

In accordance with the invention the armature support or "spider," as it may be termed, contains the armature-bearings and has three
25 or more supporting members adapted to engage the field-frame between the pole-pieces, so as to properly center and support the armature without interfering with the said pole-pieces, the said spider being adjustably connected with the field-frame. By arranging
30 the several supporting members to correspond with the spaces between the pole-pieces, which project inward from the field-frame, and providing the said field-frame with fastening devices or openings to receive fasten-
35 ing devices between adjacent pole-pieces the said frame may be set up in any desired position—i. e., on the floor, wall, or ceiling—and the armature-spider secured therein in such
40 a way that one or more of the supporting portions will bear against the frame below the armature-bearing, so as to properly sustain the weight of the armature, the other members insuring the proper centering of the
45 armature-shaft.

Figure 1 is an end elevation of a dynamo-electric machine embodying the invention. Fig. 2 is a plan view of the same, the field-frame being shown in section to illustrate the
50 manner of fastening the armature-spider; and Fig. 3 is an end elevation showing a modi-

fication in which the armature-spider is especially adapted for a machine having six polar extremities.

As herein shown, the field-frame *a* is cylindrical in shape, so as to be adapted for any
55 number of pole-pieces, the said pole-pieces *a*² being shown as secured to the said frame by means of bolts *a*³ and projecting inward therefrom in the usual way, so that the polar
60 extremities or pole-shoes *a*⁴ will properly surround the armature *b*. The armature-shaft *b*², in accordance with the invention, is supported in a spider *b*³, which is entirely independent of the field-frame *a*, but adapted to
65 be secured thereto in such a way as to properly position the armature with relation to the polar extremities *a*⁴. The said armature-spider is provided with three or more supporting portions *b*⁴, at least one of which projects
70 downward to form the necessary strut or support, upon which the weight of the armature is mainly borne.

By properly spacing the supporting portions *b*⁴ the said portions can be inserted end-
75 wise between adjacent pole-pieces, and the whole armature-spider, thus properly supported and centered by the downwardly and laterally projecting portions *b*⁴, respectively, can be longitudinally adjusted with relation
80 to the frame to position the armature with relation to the magnetic field. The projections *b*⁴ are shown as in the form of bows so as to surround the armature, and that part of each bow which is parallel to the armature-shaft
85 is provided with a slot *b*⁵ to receive a bolt *a*⁵, Fig. 2, or equivalent fastening device, the slots thus providing for the longitudinal adjustment of the spider as a whole.

In Figs. 1 and 2 the invention is shown as
90 embodied in a four-pole motor and in Fig. 3 as embodied in a six-pole motor, the construction of the spider being substantially the same in both cases. In a six-pole motor, as shown in Fig. 3, the armature-spider may be provided with four of the supporting portions *b*⁴,
95 two of the said portions projecting downward, but being inclined from a vertical position, so as to straddle the lowermost pole-piece of the field-frame, it being obvious that the in-
100 vention may be adapted for use with machines having any desired number of poles.

By providing the field-magnet frame with means for inserting suitable fastening devices between adjacent poles it is obvious that the said frame may be set up in any position desired—that is, the base portion thereof may be horizontally secured to a ceiling or beam, with the frame projecting downwardly, or may be vertically secured to a wall—and in any case the armature-spider may be so inserted as to properly support the armature without disturbing any part of the frame. In any position of the armature-spider there will be substantially vertical supports to mainly sustain the weight of the armature and lateral supports to properly center the same with relation to the polar extremities of the field.

I claim—

1. The combination with the field-magnet frame of a dynamo-electric machine; of an armature support or spider adapted to be slid endwise into the frame and having three or more projecting members adapted to engage the inner surface of the said frame to thereby properly center and support the armature with relation to said frame, as set forth.

2. The combination with the field-magnet frame of a dynamo-electric machine, provided with inwardly-projecting pole-pieces; of an armature support or spider provided with three or more projecting members so spaced as to engage the said frame between adjacent

pole-pieces to properly center and support the said armature, the said support or spider thus being removable endwise without removing or displacing the field-magnets or pole-pieces thereof.

3. The combination with the field-magnet frame of a dynamo-electric machine; of an armature support or spider having three or more points of support adapted to engage the said field-magnet frame between the inwardly-projecting pole-pieces, the frame being arranged to receive fastening devices between adjacent poles; and means for longitudinally adjusting the armature support or spider with relation to said field-magnet frame, as set forth.

4. The combination with the field-magnet frame of a dynamo-electric machine; of an armature support or spider having bearings for the armature; and three or more bow-shaped members extending from one bearing to the other around the armature; the outer surfaces of said members fitting the inner surface of the field-magnet frame, as set forth.

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

AMOS R. BLISS.

Witnesses:

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