W. L. BLISS.

DYNAMO ELECTRIC MACHINE.

APPLICATION FILED SEPT. 16, 1912.

1,193,349. Patented Aug. 1, 1916.

Fig. 1.

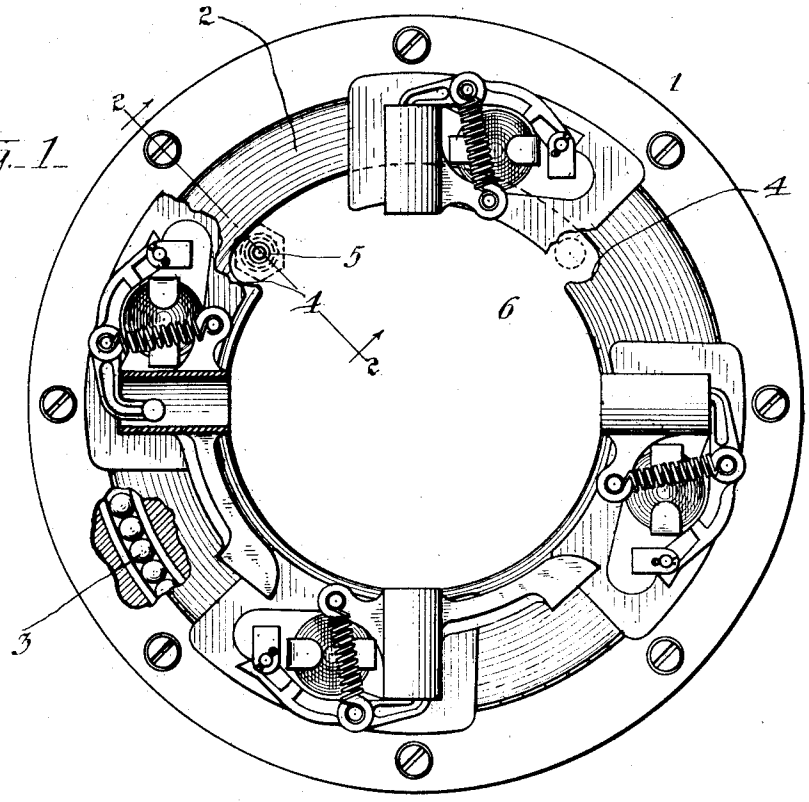


Fig. 3.

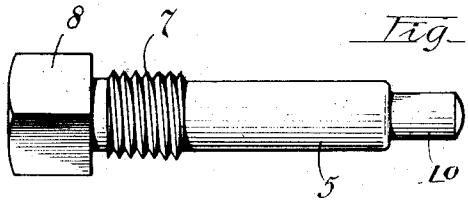


Fig. 4.

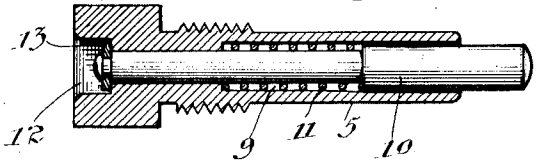
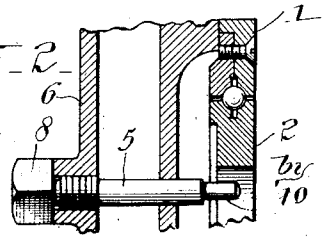


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM L. BLISS, OF NIAGARA FALLS, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO U. S. LIGHT & HEAT CORPORATION, OF NIAGARA FALLS, NEW YORK, A CORPORATION OF NEW YORK.

DYNAMO-ELECTRIC MACHINE.

1,193,349. Specification of Letters Patent. Patented Aug. 1, 1916.

Application filed September 16, 1912. Serial No. 720,532.

To all whom it may concern:

Be it known that I, WILLIAM L. BLISS, a citizen of the United States, residing at Niagara Falls, in the county of Niagara and State of New York, have invented new and useful Improvements in Dynamo-Electric Machines, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to bolts.

It has among its objects to provide an improved bolt.

A further object of my invention is to provide an improved stop for the movable element of a reversible generator brush mechanism which may be readily inserted from the exterior of the machine casing without damage to the brush rig, and which through its coöperation with the movable element thereof, may be snapped into position upon rotation of the latter.

Others objects and advantages of my invention will hereinafter appear.

In order that my invention may be clearly and fully disclosed, I have illustrated one embodiment of the same in the accompanying drawings.

Figure 1 is a side elevation of a dynamo electric machine brush rig. Fig. 2 is a sectional view on line 2—2 of Fig. 1. Fig. 3 is a side elevation of the stop. Fig. 4 is a longitudinal sectional view of the stop.

The brush mechanism shown is of the type described and claimed in my co-pending application, Serial No. 694,014, filed April 29, 1912, wherein an outer brush ring 1 is fixed to a suitable support, as, for instance, a dynamo electric machine head, and an inner brush ring 2 is arranged to revolve therein upon ball bearings 3 located between the rings. As in the construction shown in that application, the inner ring 2 carries the usual brush holders and is arranged to be automatically reversible upon the engagement at predetermined times of abutments 4 with the end of a pin 5 carried by the head of the machine.

In my improvement the pin 5 is adapted to be threaded in through the head 6 of the dynamo electric machine and is provided with a casing having a threaded portion 7 and a nut 8 upon one of its ends. This casing is provided with a central bore 9 arranged to receive a reciprocable stop pin or plunger 10. One end of this pin normally protrudes from the casing. This end is of slightly larger diameter than the other end and is arranged to reciprocate in an enlarged portion of the bore 9, a coiled spring 11 being wound around the adjacent reduced portion of the pin and compressed when the pin is forced into the casing. In order to indicate when the plunger strikes an obstruction, the shank of the same is arranged to protrude through an opening 12 in the nut 8. The normal position of the pin, however, is shown in Fig. 3 wherein the end of the pin is seated on the inner wall of the recess 12 and the spring is extended. In order that the pin may not be forced out of the casing by this spring, a suitable collar 13 is fixed upon the end of the same, as, for instance, by riveting.

When it is desired to insert the stop for the brush mechanism, the same is inserted through a suitable opening in the head of the dynamo electric machine. Should the inner ring 2 then occupy such a position that the slotted portion of the same is not opposite the opening through which the pin would protrude, the end of the pin would strike the ring and be pressed inward. This compresses the spring 11 and at the same time causes the outer end of the pin to protrude from the casing so that the workman inserting the pin will know that the brush mechanism must be adjusted and will not continue to force in the pin to the detriment of the mechanism. All that it is then necessary for him to do, is to rotate the inner ring 2 until the slot in the ring comes opposite the plunger, whereupon the spring 11 forces the pin 10 outward so that it is in a position to engage the abutments 4 when the brush mechanism is put in operation. In fact, the friction of the brushes is enough to cause the brush rig to rotate and allow the stop pin to protrude into the slot.

I am thus able to provide improved means for establishing the limits of travel of the brush rig which may be very readily inserted from the outside of the dynamo electric machine and which at the same time serve to provide a visual indication to the workman as to whether or not they are being properly inserted. Further, the construction is an exceedingly simple one which

may be very readily and cheaply manufactured.

While I have herein described one embodiment of my invention, it is of course to be understood that the same is susceptible of modification without departing from its spirit and that it may find various other uses than that described herein.

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

1. In combination, a shiftable member provided with stops, a fixed member, said fixed member being provided with a bolt adapted to be located between said stops and to coöperate therewith, said bolt being provided with spring pressed means biased to move into position between said stops, and normally concealed signal means to indicate when said spring pressed means is not in its biased position.

2. In combination, a shiftable brush mechanism and a spring pressed element to limit movement thereof, and automatically movable into the desired relation therewith upon rotation of said mechanism, said spring pressed element being provided with a normally concealed signal means.

3. In combination, a movable brush carrier having a slot therein, and spring-pressed means for limiting the movement of said brush carrier adapted to automatically snap into position in said slot upon movement of said brush carrier, said spring pressed means being provided with normally inclosed signal means.

4. In combination, a casing for a dynamo electric machine, a brush mechanism movable therein and having a slot therein, and a stop for said brush mechanism adapted to be inserted from the exterior of said casing and having a spring pressed plunger therein adapted to snap into position in said slot upon rotation of said movable element, said plunger being provided with normally concealed signal means to indicate when said plunger is not in its biased position.

5. In combination, a dynamo electric machine casing, a stationary brush ring carried therein, a movable brush ring rotatably mounted in said stationary ring, said movable ring having a slot therein, and a spring pressed plunger extending through the end of said casing and adapted to snap into said slot upon the rotation of said inner ring, said plunger being provided with normally concealed signal means.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM L. BLISS.

Witnesses:
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E. J. HANNIG.