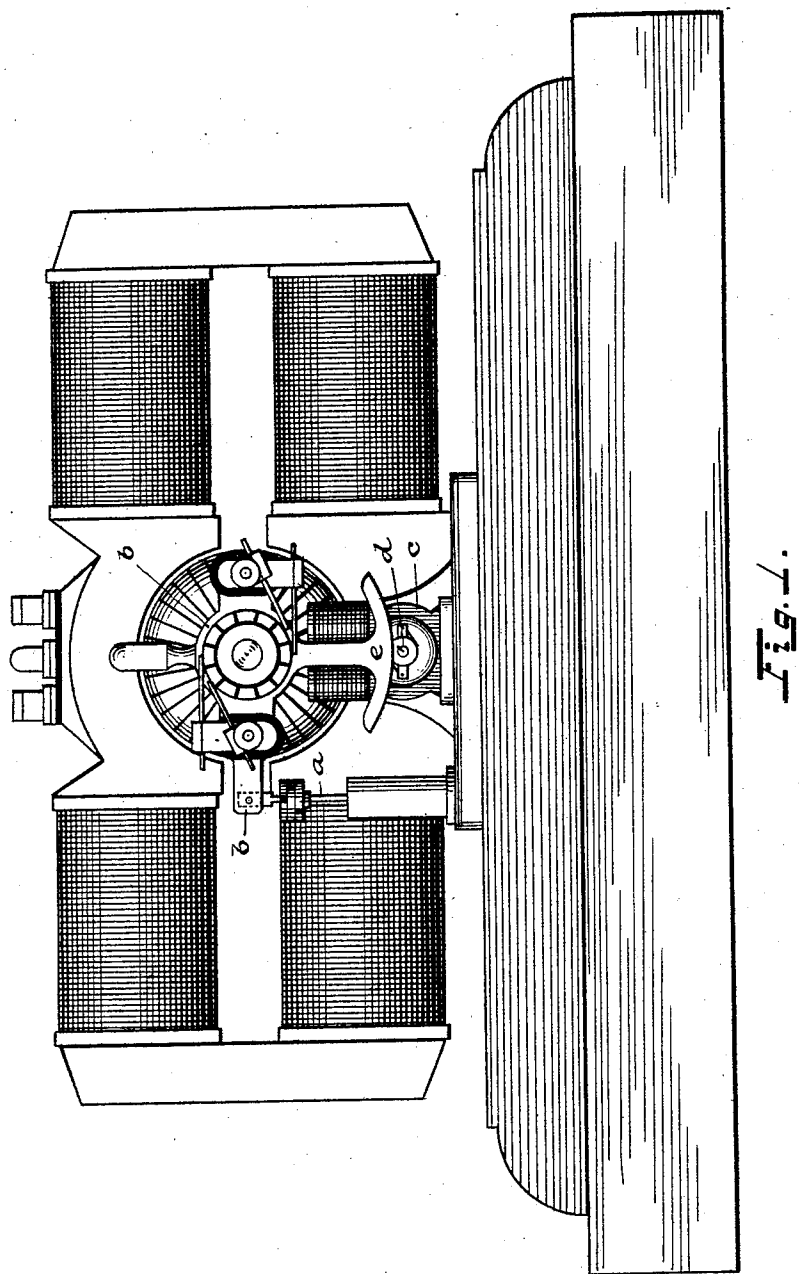


C. E. SCRIBNER.

REGULATOR FOR DYNAMO ELECTRIC MACHINES.

No. 522,275.

Patented July 3, 1894.



Witnesses.

Charles H. Hawley,
George R. Parker.

Inventor.

Charles E. Scribner.
George P. Barton
Attorney.

5 coil, another field magnet in shunt of the main circuit in position to create electro-motive forces in each set of active coils, a constant and a variable field magnet terminating in a single pole piece presented to the armature, said pole piece being increased in magnetic resistance on a line between the two magnets, substantially as described.

In witness whereof I hereunto subscribe my name this 16th day of May, A. D. 1889.

CHARLES E. SCRIBNER.

Witnesses:

ELLA EDLER,
GEORGE P. BARTON.

UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

REGULATOR FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 522,275, dated July 3, 1894.

Application filed October 14, 1889. Renewed December 7, 1893. Serial No. 492,988. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Regulators for Dynamo-Electric Machines, (Case No. 208,) 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 regulators for dynamoelectric machines, whereby the brushes are automatically shifted from time to time to maintain a practically uniform current strength notwithstanding variations in the resistance of the current. Heretofore various devices have been used for this purpose with good results.

The object of my invention is to provide means for doing this work which shall be simple in construction, durable, and efficient in operation.

My invention consists in the combination with a dash pot connected with the brush carrier and weighted or adjusted to tend to move the brushes in a given direction, of an electric motor included in or connected with main circuit and adapted to cause an arm or lug in its rotation to engage with or take the frictional surface of a segment provided upon the brush carrier at each revolution of said arm or lug, thus moving the brush carrier forward, as it were, step by step in opposition to the movement thereof caused by the weighted piston or counter-balance of the dash pot.

My invention will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is an elevation illustrative of my regulator applied to a dynamo electric machine. Fig. 2 is an elevation showing the regulator connected with the brush carrier, together with a diagram of the circuits.

Like parts are indicated by similar letters of reference in both the figures.

The dash pot, as shown most clearly in Fig. 2, has its piston rod *a* pivoted to an arm or extension of the brush carrier *b*, this piston being weighted as shown, the amount of weight being adjustable. The motor *c* is

placed in the main circuit and upon its revolving shaft is carried the arm or striker *d*. Upon the brush carrier or connected therewith is provided the bearing piece *e* against the under convex surface of which the striker *d* is brought at each revolution. Every time the striker thus takes the bearing surface the brush carrier is rotated a short distance against the force of the weight of the dash pot piston. The position which the brush carrier will occupy depends, therefore, upon the amount of weight on one side and the frequency of strikes on the other side. The weight is initially adjusted to the normal current of the machine and then the position of the brush carrier, and hence of the brushes upon the commutator, will depend upon the speed of rotation of the motor, that is the greater the number of blows of the striker the greater will be the force opposed to the counter-balance weight of the brush carrier, and hence the brush carrier will be moved to adjust the brushes forward upon the commutator to decrease the voltage. Now as lamps are cut in or out of the circuits, the resistance thereof is increased or diminished as the case may be. Thus the rate of revolution of the motor is changed and the brushes are accordingly shifted forward or backward upon the commutator to maintain the current strength.

The armature of the motor should be provided with only a moderate number of ampère turns so that the motor will not become saturated but will always readily respond to changes in current strength, whether above or below the normal or predetermined strength.

My invention admits of various modifications that would readily suggest themselves to those skilled in the art, and I, therefore, do not limit myself to the construction shown.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with the brush carrier and the brushes mounted thereon and resting on the commutator of a dynamo electric machine, of a counter-balance weight and dash pot tending to move the brush carrier in one direction, and a motor connected with the circuit of the machine and acting intermittently upon the brush carrier with greater or less

