(No Model.)

E. A. SPERRY.

REGULATOR FOR DYNAMO ELECTRIC MACHINES.

No. 353,986. Patented Dec. 7, 1886.

Fig. 1.

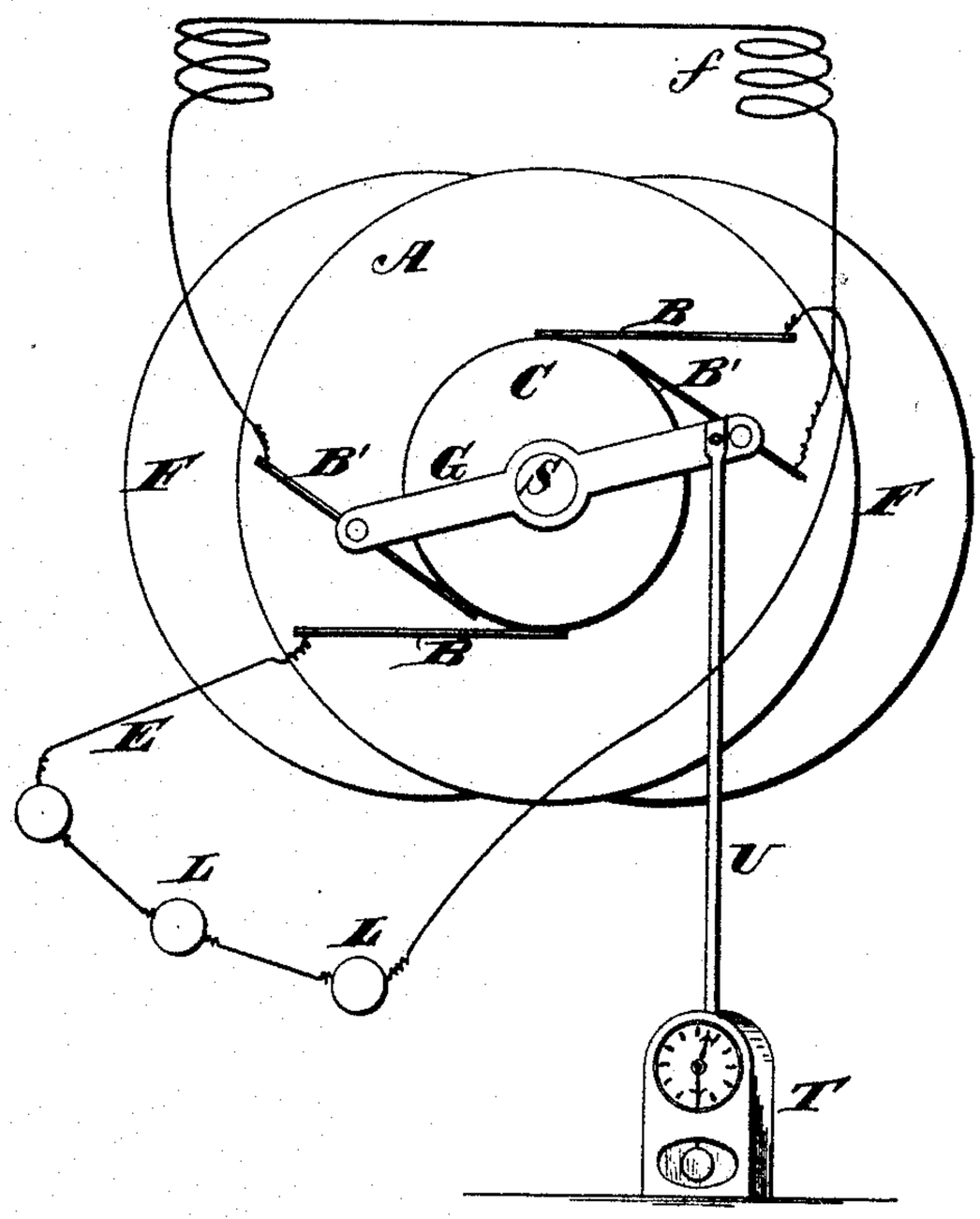
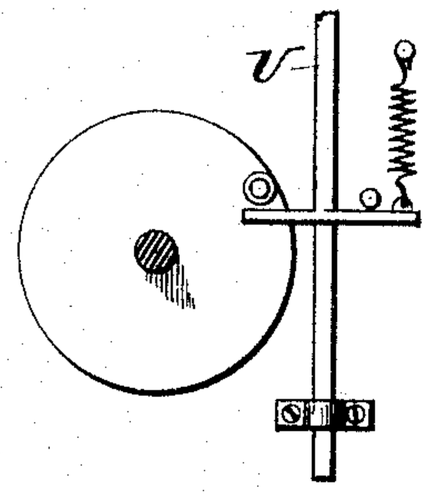


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

ELMER A. SPERRY, OF CHICAGO, ILLINOIS.

REGULATOR FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 353,986, dated December 7, 1886.

Application filed March 14, 1883. Serial No. 88,130. (No model.)

To all whom it may concern:

Be it known that I, ELMER A. SPERRY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Regulators for Dynamo-Electric Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification.

The present invention relates to that class of dynamo-electric machines in which there is combined, with the commutator and the brushes of its external circuit, an additional pair of brushes, connected, respectively, with the helices of its field-magnets, and means for adjusting said additional brushes, these devices being resorted to for obviating waste of electrical energy entailed by the interposition of extra resistance in a derivation which includes the helices of the field-magnets, and to automatically regulate the excitation of the field-magnets in accordance with the demands upon the main current.

The invention consists in the construction and arrangement of devices, which will be hereinafter more fully described, and then set forth in the claim.

Figure 1 is a diagrammatic view of a regulator mechanism embodying my invention. Fig. 2 is a detail view of the trip device on the clock.

The letters F indicate the poles of the field-magnets, and *f* is a conventional representation of the helices of said magnets, while A is the armature, and C the commutator, of a dynamo-electric machine.

B B are the brushes of the external circuit, which is indicated by E, and may include any suitable electrical apparatus to be operated by the current—as, for instance, electric lamps L. (Shown as arranged in series in the present instance.)

B′ B′ indicate two additional brushes, bearing on the commutator and connected, respectively, with the opposite terminals of a circuit including the helices *f* of the field-magnets. These brushes B′ B′ are carried at the ends of a lever, G, which is pivoted at its middle upon or concentrically with the shaft S of the commutator. A rod, U, connected with one end of the lever G, is connected with the train of a clock or time movement, as indicated at T, in such a manner that a suitable trip will be actuated by the train at any predetermined time for the purpose of shifting the field-circuit brushes by mechanical means entirely independent of the generator or dynamo. If, for instance, in an electric-lamp installation it is intended at a given hour to put additional lamps in circuit, the clock-work will be set to shift the field-circuit brushes correspondingly closer to the maximum points of the commutator at that hour. If it is intended to reduce the number of lamps in circuit, the clock-work will be set to shift the field-circuit brushes away from the points of maximum effect at time of reduction.

Having thus described my invention, what I claim is—

The combination, with the commutator of a dynamo-electric machine, the brushes of its external circuit and the additional pair of brushes respectively connected with the opposite terminals of the helices of the field-magnets, of a time-movement or clock and operating devices, substantially as described, for automatically and periodically adjusting said additional brushes, substantially as herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ELMER A. SPERRY.

Witnesses:

HENRY D. SMALLEY,

LOREN GREENE.