

No. 772,096.

PATENTED OCT. 11, 1904.

J. H. HALLBERG.
SYSTEM OF ELECTRICAL DISTRIBUTION.

APPLICATION FILED OCT. 26, 1903.

NO MODEL.

FIG. 1.

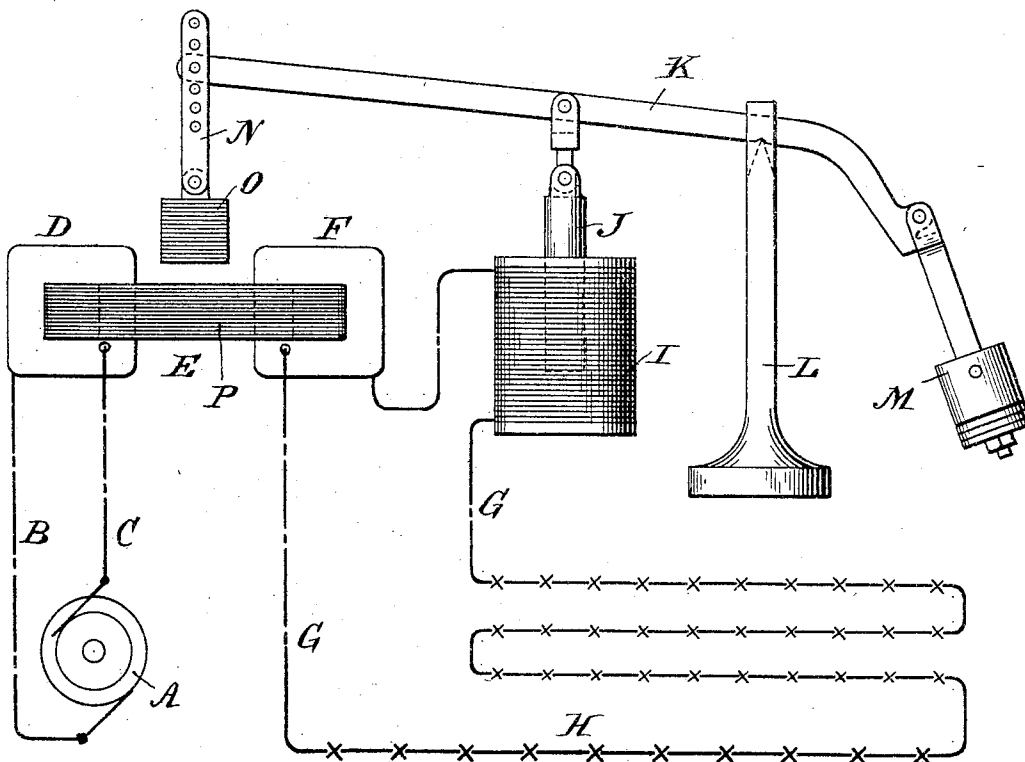
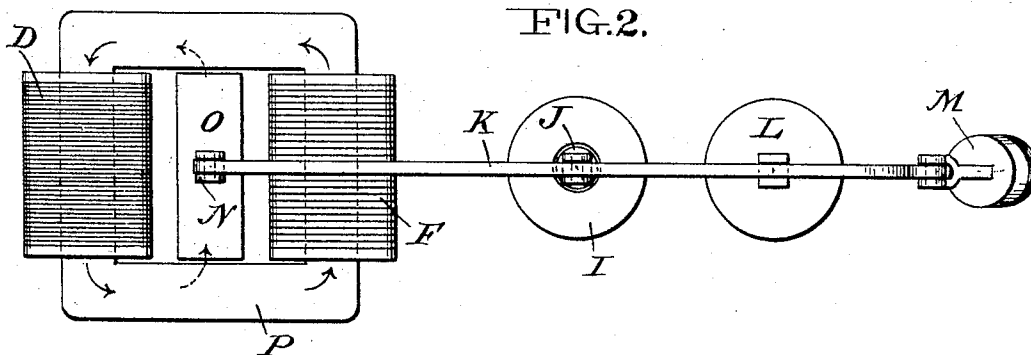


FIG. 2.



WITNESSES:

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SYSTEM OF ELECTRICAL DISTRIBUTION.

SPECIFICATION forming part of Letters Patent No. 772,096, dated October 11, 1904.

Application filed October 26, 1903. Serial No. 178,490. (No model.)

To all whom it may concern:

Be it known that I, JOSEF HENRIK HALLBERG, a citizen of the United States, residing at New York city, county and State of New York, have invented certain new and useful Improvements in Systems of Electrical Distribution, of which the following is a specification.

This invention relates to a device adapted to be interposed between a generator and the arc-lights of an alternating series arc-light system and which has for its purpose to maintain the current in the distributing-circuit constant and irrespective of the number of lamps in operation.

The accompanying drawings will serve to illustrate my invention.

Figure 1 is a view in elevation of my improved regulator, also showing diagrammatically the regulator interposed between an alternating generator and a series of arc-lights. Fig. 2 is a top view.

In the drawings, A represents an alternating generator; B C, conductors leading therefrom, which conductors form the primary winding D of a transformer E.

F represents the secondary winding of the transformer E, which is continued through the distributing-circuit G, lamps H or other type of translating device, and coil of solenoid I. Located within the solenoid is a core J. This core is connected at its upper end to a lever K, pivotally mounted upon the standard L. On one end of the lever is an adjustable weight M and at the other end of the lever an adjustable bar N, carrying a body of core-plates O.

P is the core of the transformer.

The operation of my device is as follows: The generator A is adapted to transmit a current of constant potential, which current, traversing the primary D of the transformer E, excites the secondary F of the transformer E, which furnishes the required current for the lamps H in the distribution-circuit G. In Fig. 1 the parts are assumed to be in the position which they will occupy with full load. When a lamp is cut out of circuit, the solenoid I attracts its core J. The movement of the core J into the solenoid I serves to intro-

duce impedance in the distributing-circuit approximately proportional to the resistance of the lamp cut out of circuit. The above effect will be continued as lamps are cut out until a certain point is reached, which point will depend upon the adjustment of the core-body O upon the lever K—i. e., until the body of core-plates O, carried by the bar N on the end of the lever K, moves into relation with the core P of the transformer E, or, in other words, starts to thread the core. The effect of introducing the body O into the core P is to form a path for the lines of force set up by the current traversing the primary D shorter than that normally offered by the core P, thereby gradually cutting the magnetizing-current out of the secondary F until a point is reached of no current in F.

In a former patent granted to me—to wit, No. 712,521, dated November 4, 1902—I have described the employment of a solenoid and core for introducing impedance, and in the patent of Thomson, No. 400,515, dated April 2, 1889, there is described the employment of a transformer and a moving core-body for automatically decreasing the lines of force traversing the secondary of the transformer. I believe, however, that I am the first to describe the conjoint use of the two instrumentalities for effecting automatic regulation of the current in a series arc-light system. By coupling the two devices regulating effects are obtained different from those obtained where the two devices are separately employed—that is, I am able to obtain a constant potential at the generator and a practically constant current in the distributing-circuit irrespective of load in the distributing-circuit and without altering the power factor. Practically considered this result is one of great commercial importance, and therefore a decided advance over any system heretofore employed for a similar purpose.

Having thus described my invention, I claim—

1. A regulator for alternating series arc-light systems embodying in its construction, means for automatically and simultaneously varying, the induced current without altering the number of active coils of the secondary

of the transforming apparatus employed; and the impedance in the distributing-circuit in which said regulator is connected.

2. A regulator for alternating series arc-light systems, embodying in its construction a transformer, and separate means for automatically and simultaneously varying the magnetic flux transmitted to the secondary of said transformer and the impedance in the distributing-circuit in which it is connected.

3. A regulator for alternating series arc-light systems, embodying in its construction a transformer, a solenoid, a core-body adapted to be moved relative to the core of the transformer, a core adapted to be moved in and out of the solenoid, and means for supporting and balancing said core-body and solenoid-core.

4. A regulator for alternating series arc-light systems, embodying in its construction a transformer, an adjustable core-body adapted to be moved relative to the core of said transformer, a solenoid, a core adapted to be moved in and out of said solenoid, and means for supporting and balancing said core-body and solenoid-core.

5. A regulator for alternating series arc-light systems, embodying in its construction a transformer, through the primary of which a current of constant potential is transmitted, a core-body adapted to be moved relative to the core of said transformer, a solenoid, a

core adapted to be moved in and out of said solenoid, and means for supporting and balancing said core-body and solenoid-core.

6. As a means for regulating the current in an alternating series arc-light system, a transformer having its primary connected to a source of constant potential, and its secondary to the distribution-circuit, and in series with a solenoid, a core-body adapted to be moved relative to the core of said transformer, a core adapted to be moved in and out of said solenoid, and means for supporting and balancing said core-body and solenoid-core.

7. A system of distribution and regulation embodying a source of constant-potential alternating current, a transformer having its primary connected to said source of current and its secondary connected to the distribution-circuit, a number of translating devices and an impedance device in series in said distribution-circuit with said secondary, and means for automatically and simultaneously varying the current from the secondary and the impedance in the distribution-circuit in accordance with the load in said circuit.

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

JOSEF HENRIK HALLBERG.

Witnesses:

J. E. PEARSON,
FRANK O'CONNOR.