

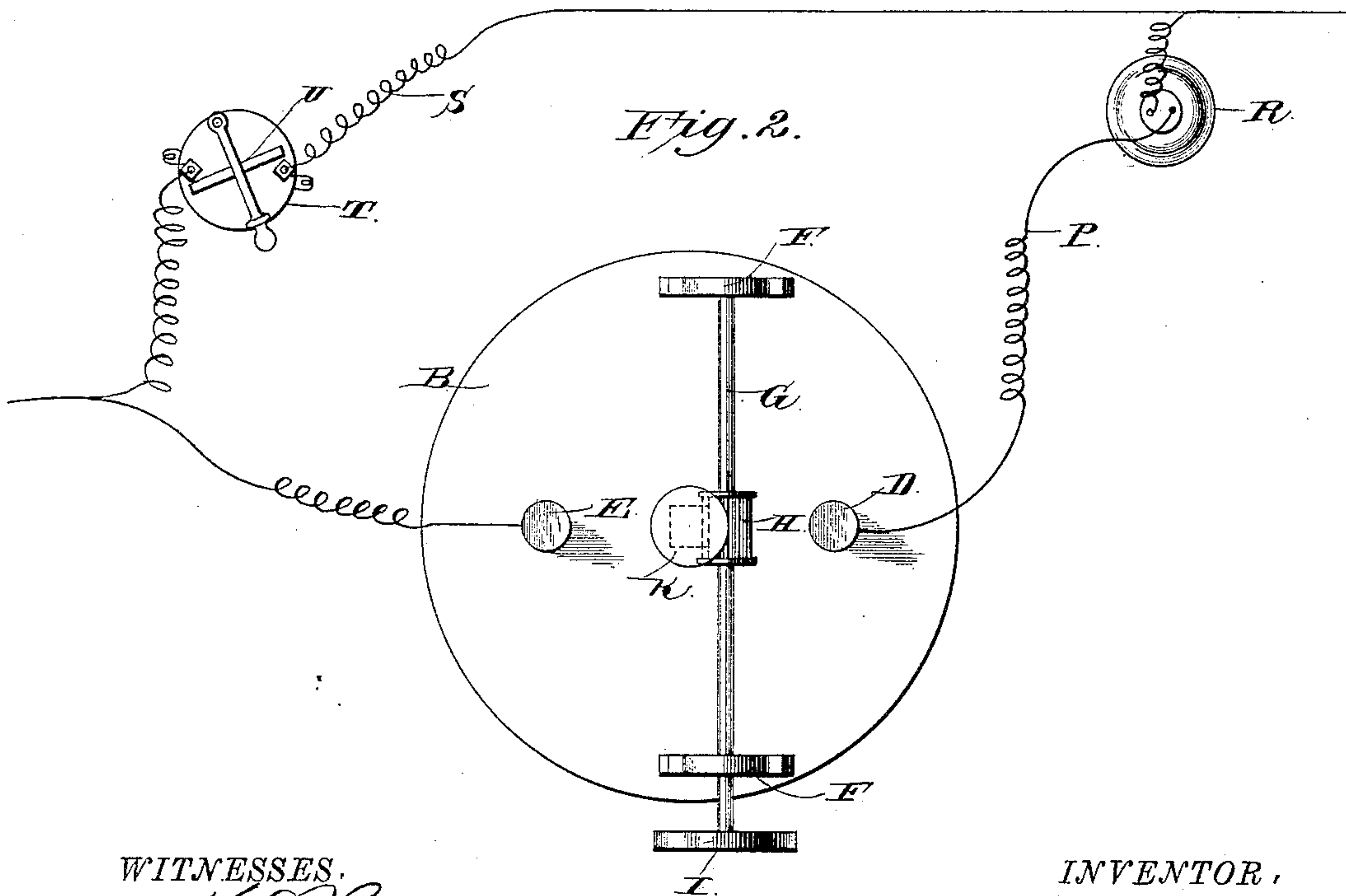
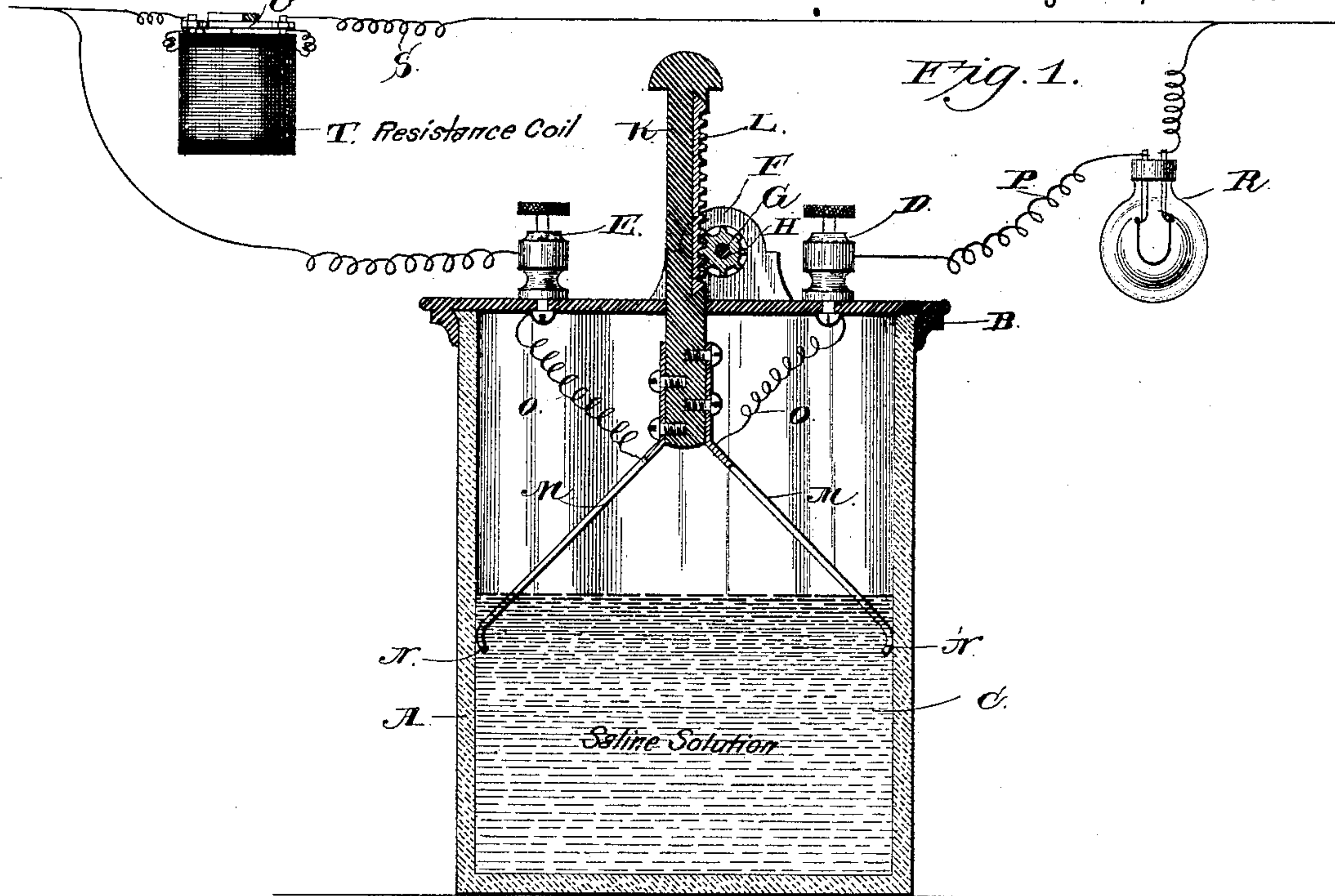
(No Model.)

F. J. CROUCH.

RHEOSTAT.

No. 383,345.

Patented May 22, 1888.



WITNESSES.

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UNITED STATES PATENT OFFICE.

FRANK. J. CROUCH, OF EUGENE CITY, OREGON.

RHEOSTAT.

SPECIFICATION forming part of Letters Patent No. 383,345, dated May 22, 1888.

Application filed March 31, 1888. Serial No. 269,061. (No model.)

To all whom it may concern:

Be it known that I, FRANK. J. CROUCH, a citizen of the United States, residing at Eugene City, in the county of Lane and State of Oregon, have invented a new and useful Improvement in Electric-Current Regulators, of which the following is a specification.

My invention relates to an improvement in apparatus for regulating the strength of the current in electric-light systems; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional view of an electric-current regulator embodying my improvement, showing the same connected in circuit with an electric-light system. Fig. 2 is a top plan view of the same.

A represents a vessel, of suitable size and shape, which is provided with a cover or lid, B, and is partly filled with a saline or other chemical solution, C, to the required depth.

D E represent binding-posts, which are secured to the cover B and insulated therefrom; or the said cover may, if preferred, be made of insulating material, such as gutta-percha. Said cover is provided on opposite sides with bearings or standards F, in which is journaled a transverse shaft, G, which is provided at its center with a pinion, H, and has a thumb-wheel, I, at one end.

K represents a vertically-movable rod or plunger, which is guided in a central opening in the cover B, and is preferably made of insulating material, such as gutta-percha. Said rod is provided on one side with a rack-bar, L, which is engaged by the pinion H, and to the lower end of said rod, on opposite sides thereof, are secured the upper ends of a pair of downwardly-diverging spring-conducting rods or arms, M, which are preferably made of copper, and have their lower ends bearing against the sides of the vessel and turned inward, as shown at N. The said spring-arms are out of contact with each other, and in the event that the plunger is made of conducting material said arms are to be insulated therefrom; but when, as in this instance, the plunger-rod is made of non-conducting material it is

only necessary to secure the upper end of the conducting-arm directly thereto, as shown, so that said conducting-arms will be out of contact with each other.

Coiled conducting-wires O connect the binding-posts to the conducting-arms and enable the plunger-rod to be moved up or down with the conducting-arm, for the purpose to be hereinafter explained.

P represents the conducting-wire of the electric-light system, in which are included one or more electric lamps, R. The said wire P is connected to the binding-posts D E, and thereby the circuit is completed through the wires O, through the conducting-arms M, and through the solution in which said arms are immersed.

S represents a shunt-circuit which connects the wires P, as shown. In this shunt-circuit is included a resistance-coil, T, which is made of such resistance as will enable it to balance the electric lamps used on the circuit. Said resistance-coil has a switch, U, adapted to establish or cut off communication between the coil and the shunt-circuit.

The operation of my invention is as follows: When the rod H is raised or lowered, the brilliancy of the light is decreased or increased, this being accomplished by varying the strength of the current which passes through the carbons of the lamps. The current divides at the junction of the wires P with the main wire S, a part of the current passing through the regulating device, and a part of the current passing through the resistance-coil. When the switch U is closed, the current passes through the wires S and is shunted from the circuit including the lamps and the regulator, and thereby the lamps are extinguished.

Having thus described my invention, I claim—

1. The electric-current regulator comprising the vessel containing a chemical solution, and the diverging conducting-arms connected in circuit with the main line or conductor and insulated from each other, said arm being adapted to be lowered into the solution to any desired depth, for the purpose set forth, substantially as described.

2. The combination, with the vessel to contain the chemical solution, of the vertically-

movable rod K, the diverging arms M, attached to the said rod and insulated from each other, said arms being conductors of electricity and adapted to form part of an electric circuit, 5 substantially as described.

3. The combination of the vessel A, to contain the chemical solution, the vertically-movable rod K, having the rack-teeth, the revoluble shaft G, having the pinion engaging 10 the rack-teeth, and the conducting-arms M, secured to the lower end of rod K, diverging outward to the sides of the vessel and adapted to form part of the electric circuit, for the purpose set forth, substantially as described.

15 4. The combination, in electric-light systems, of the conducting-wire in which the

electric lamps are included, the vessel containing the chemical solution, and the diverging conducting-arms M, connected to the conducting-wires, having their upper ends insulated from each other, and means to immerse 20 the diverging lower ends of said arms into the chemical solution to any desired depth, for the purpose set forth, substantially as described.

In testimony that I claim the foregoing as 25 my own I have hereto affixed my signature in presence of two witnesses.

FRANK. J. CROUCH.

Witnesses:

GEO. A. DORRIS,
JOHN STRAUB.