

(No Model.)

G. B. MASSEY.
CURRENT REGULATOR OR RHEOSTAT.

No. 432,279.

Patented July 15, 1890

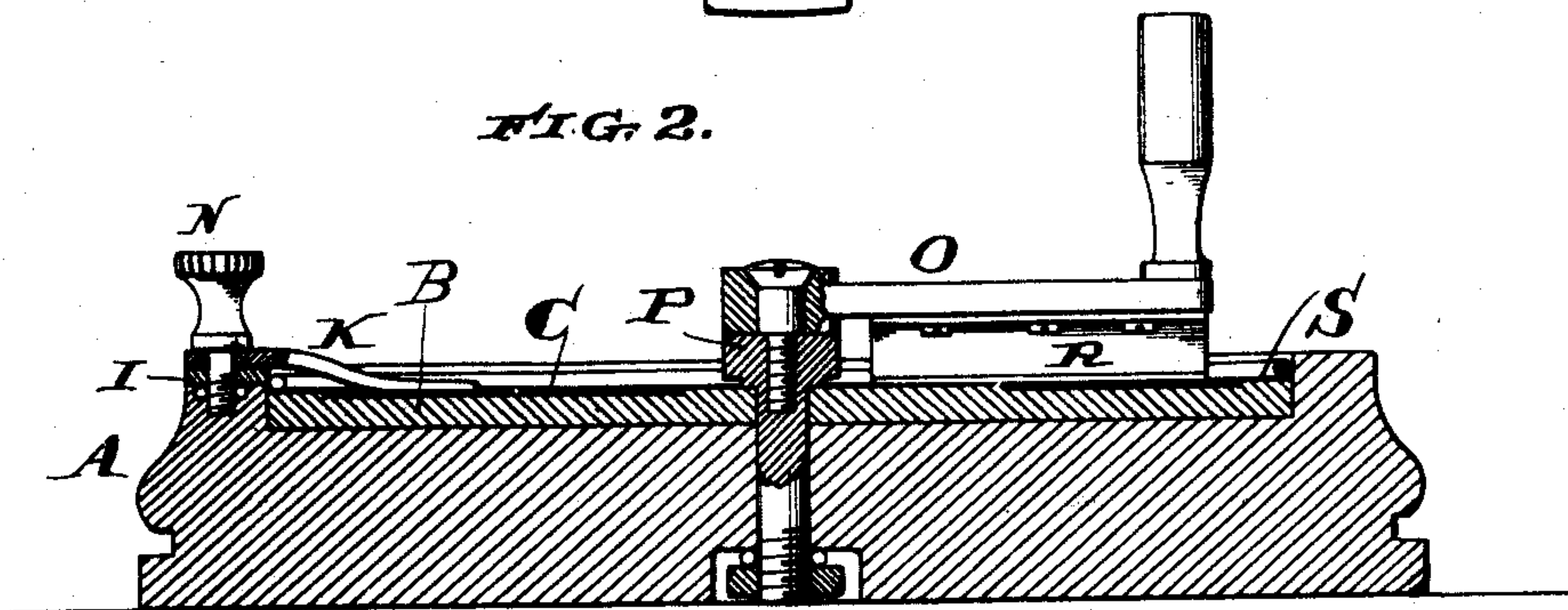
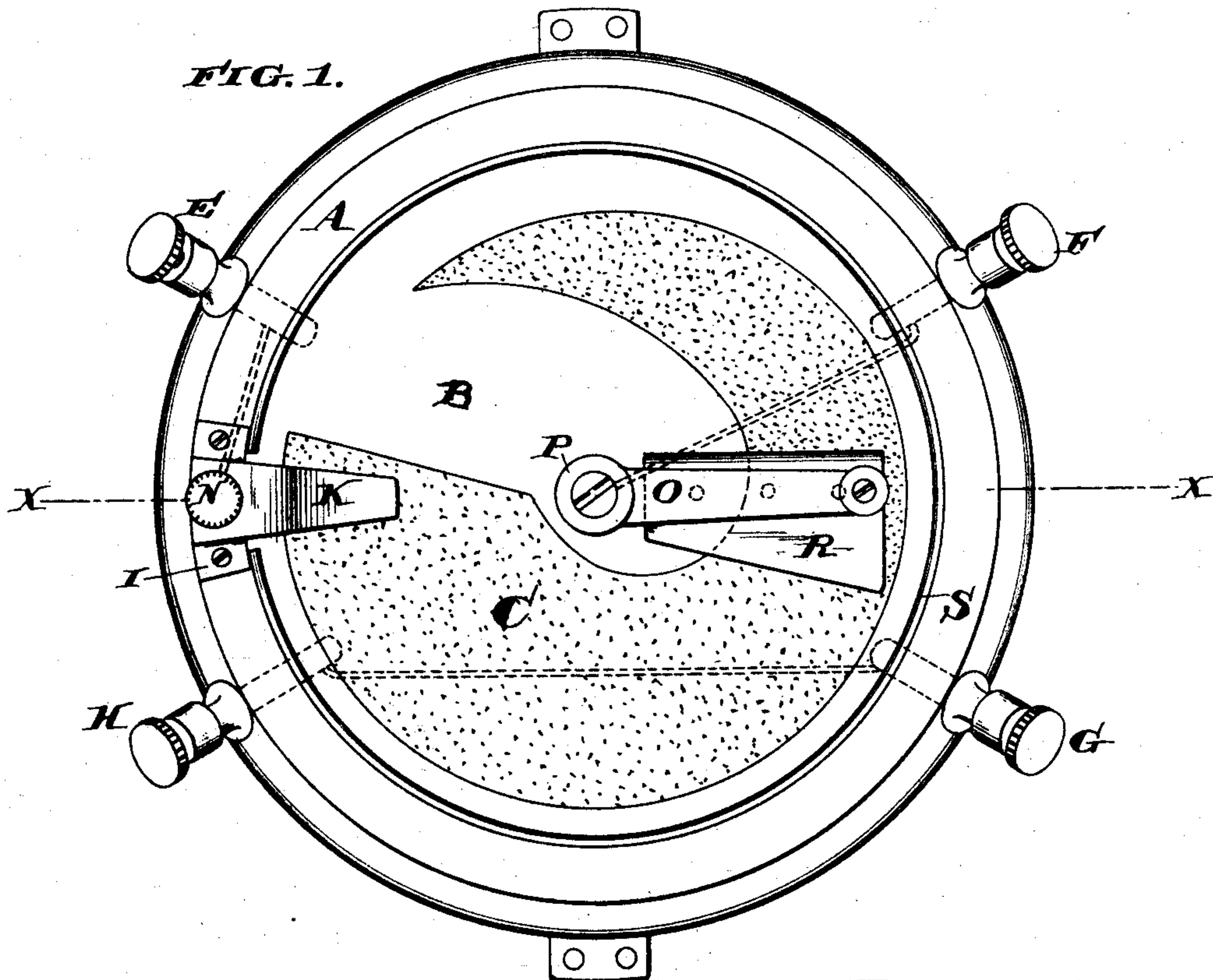
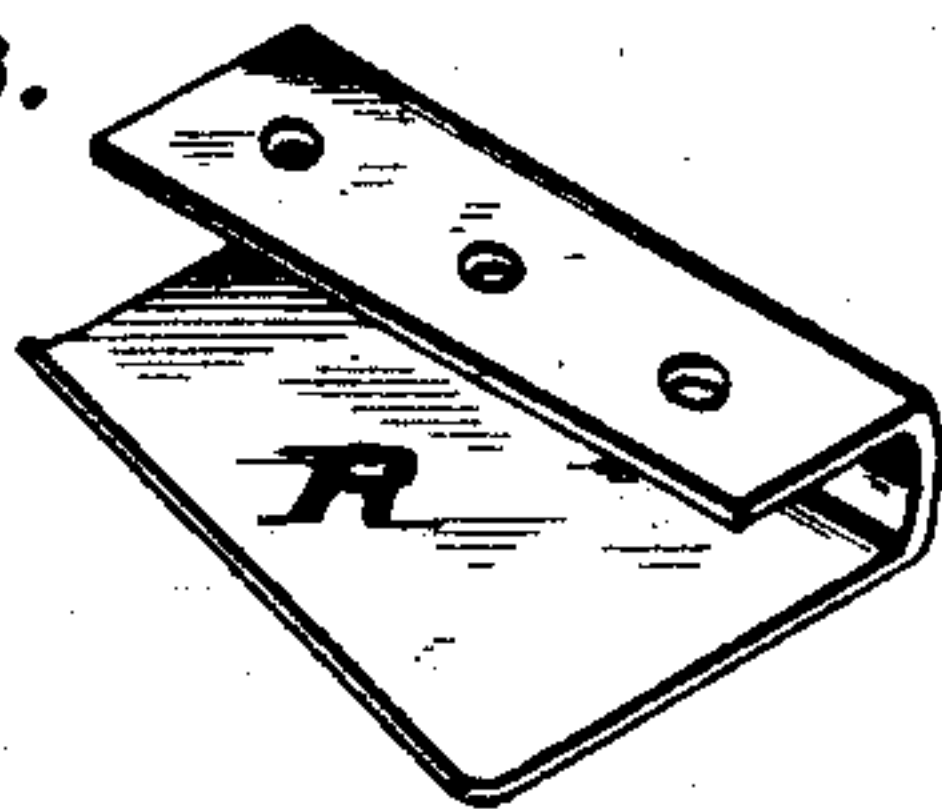


FIG. 3.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

GEORGE BETTON MASSEY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
OTTO FLEMMING, OF SAME PLACE.

CURRENT-REGULATOR OR RHEOSTAT.

SPECIFICATION forming part of Letters Patent No. 432,279, dated July 15, 1890.

Application filed April 2, 1890. Serial No. 346,265. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BETTON MASSEY, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Current-Regulators or Rheostats, of which the following is a specification.

My invention has reference to current-regulators or rheostats; and it consists of certain improvements, which are fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

In carrying out my invention I employ a surface of conducting material, over which a contact is moved for the purpose of increasing or decreasing the resistance in an electric circuit between the source of power and the translating or current-consuming device. The conducting-surface is deposited upon a smooth surface of insulated material, one end of which is connected with one of the conductors, while the other conductor is in circuit with the switch or contact which is adapted to move over the said surface. The contact I prefer to make of a spring device pressing upon the smooth surface.

The details of the rheostat or regulator are fully set forth in the accompanying drawings, in which—

Figure 1 is a plan view of my improved rheostat or current-regulator. Fig. 2 is a cross-section of the same on the line $x x$, and Fig. 3 is a perspective view of the contact-piece itself removed.

A is a circular frame or disk of wood, the upper part of which is recessed, in which is set a disk of porcelain B, which is held in place in any suitable manner—as, for instance, by the metal ring S. The upper surface of the porcelain disk B is made flat, and is provided on a portion of its surface with a coating of conducting material C—such as carbon or graphite—disposed over the surface to form a figure like a hooked tooth or sickle about the center, as illustrated in the drawings, tapering toward a point.

E is one binding-post for receiving the current, and is connected by a wire with the plate I, secured upon the rim of the frame A. Upon

this plate I is clamped a spring contact-piece K, which presses upon the surface C, thereby insuring a good electrical connection between the binding-post E and the surface C. It is evident that any other connection between the binding-post E and the contact-surface C might be employed, if desired. By loosening the screw N the contact-piece K may be removed, if it is desired to remove the plate B.

O is a contact-lever, pivoted to a central post P, connected electrically with the binding-post F. This lever O is provided upon its under surface with a removable contact-piece R, adapted to press upon the surface of the plate B, and of sufficient width to extend over the greatest width of the curved tapering graphite coating C.

H and G are binding-posts, connected, as shown, for convenience in coupling the remaining wires of the circuit.

When the lever O is moved so that the contact-piece is in contact with the greatest width of the coating C, it is apparent that there will be the least resistance, and as the lever and its contact-piece are moved to the left over the surface of the plate B more or less resistance can be thrown into the circuit to control the flow of the current, according to the greater or less area of the graphite coating in contact with the contact-piece R. It will be seen that the area of this graphite surface C, which may be in contact with the contact-piece R, gradually diminishes toward the end or point c , as the contact-piece R is moved to the left, and obviously as this graphite surface or coating decreases in area the area of the insulating material in contact with the contact-piece will increase and the flow of the current will be correspondingly decreased.

I do not confine myself to the mere details of construction, as they may be varied in many ways without departing from the spirit of my invention.

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

1. In a current-regulator or rheostat, the combination of a surface of non-conducting material, provided with a coating of conduct-

ing substance which gradually decreases in breadth from one point to another, means to connect a conductor with said coating of conducting substance at the point of its greatest breadth, and a contact-piece movable over said conducting-surface with a contact-face of greater width than the decreasing breadths of the conducting-surface, whereby as said contact-piece is moved over said conducting-surface the area of its contact-face in contact with the conducting-surface will gradually decrease.

2. In a current-regulator or rheostat, the combination of a surface of non-conducting material, provided with a coating of conducting substance arranged about a center and gradually tapering to a point, means to connect a conductor with said coating at its point of greatest breadth, and a moving contact-piece pivoted to a central point and movable over said contact-surface and having a contact-face greater than the diminishing breadth of the coating of conducting substance.

3. In a current-regulator or rheostat, the combination of surfaces of conducting and non-conducting material arranged adjacent to each other, means for connecting a conductor with the conducting-surface, and a contact-piece movable from the non-conducting sur-

face to the conducting-surface in its passage from one of said surfaces to the other, passing over both of said surfaces simultaneously, so that as the area of the conducting-surface in contact with said contact-piece increases the area of the non-conducting surface in contact with it will decrease, and vice versa.

4. In a rheostat or current-regulator, the combination of the sickle-shaped conducting-surface C, the contact-finger K, and the movable contact-piece R, substantially as shown and described.

5. In a rheostat or current-regulator, the combination of the frame A, of wood or other suitable material, having its upper portion recessed, the disk B, of non-conducting material, fitting in said recessed portion and provided upon its upper face with the coating of conducting substance C, the central post clamping the disk B and frame A together, the arm O, pivoted to the post P, carrying the contact-piece R, and the contact-finger K, substantially as shown and described.

In testimony of which invention I have hereunto set my hand.

G. BETTON MASSEY.

Witnesses:

ERNEST HOWARD HUNTER,
S. T. YERKES.