(No Model.)

H. W. LAWRENCE.

RHEOSTAT.

No. 482,093. Patented Sept. 6, 1892.

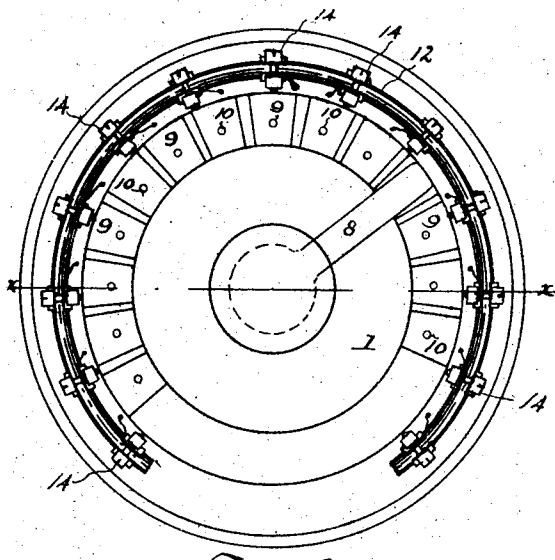

Fig. 2

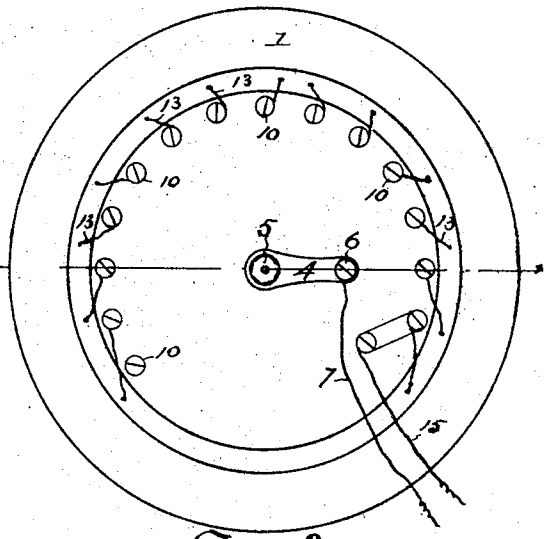

Fig. 3.

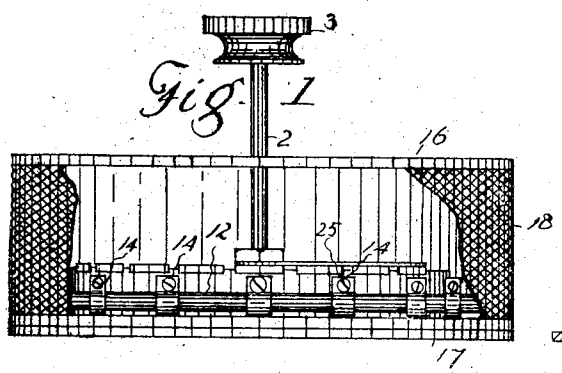

Fig. 1

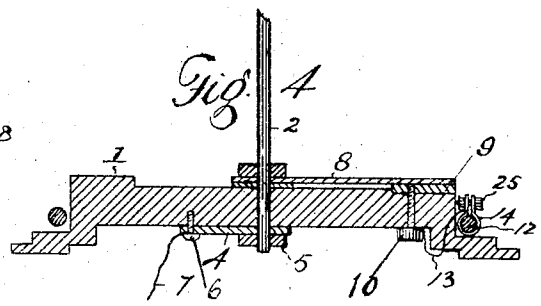

Fig. 4

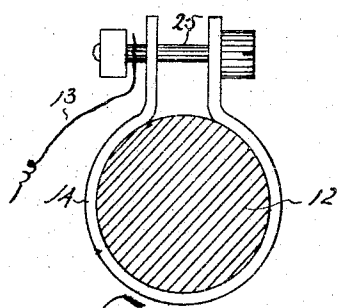

Fig. 5

WITNESSES:

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RHEOSTAT.

SPECIFICATION forming part of Letters Patent No. 482,093, dated September 6, 1892.

Application filed April 25, 1891. Renewed January 23, 1892. Serial No. 418,997. (No model.)

To all whom it may concern:

Be it known that I, HARRY W. LAWRENCE, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Rheostats; 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to an improved rheostat or means for controlling incandescent lamps.

The device is located within the circuit of the lamps designed to be controlled thereby and is capable of such adjustment that the brilliancy of the lamps may be regulated at will.

The improved device consists of the mechanism illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of the device; Fig. 2, a top or plan view thereof; Fig. 3, a bottom or underneath view; Fig. 4, a section on the line $x\,x$, Fig. 1; and Fig. 5, an enlarged detail of an adjustable clamp for securing the resistance material in place.

In the views let the reference-numeral 1 designate a block composed of insulating material, through the center of which passes a metal stem 2, provided with an insulating button or knob 3. At the bottom of plate 1 stem 2 is passed through a stationary metal arm 4 and secured in place by a nut 5 and is designed to be rotated by taking hold of button 3. To a screw 6, passing through arm 4, is attached one of the circuit-wires 7. Secured to stem 2 and adapted to engage the upper surface of block 1 is an arm 8. The outer extremity of this arm engages small metal blocks or plates 9, secured to block 1 by screws 10, passing through the block, the heads being located underneath. Plates 9 are distinct and separate from one another and form either a circle or an arc of a circle around stem 2.

Supported upon plate 1 and extending around the stem 2 on the outside of plates 9 and forming either a circle or arc thereof, as may be desired, is a section 12, of carbon or other suitable resistance material, preferably circular in cross-section. The carbon 12 is connected with screws 10, and therefore with plates 9, by wires 13, extending from the head of the screws up through the block 1 to clamps 14, surrounding the carbon, and secured at the top by screws 25. It will thus be seen that these clamps may be adjusted to correspond with the condition of the carbon with reference to the change produced therein by a difference in temperature producing expansion and contraction. Each wire 13 is distinct and separate from every other wire 13.

As before stated, one circuit-wire 7 leads to or is connected with arm 4, secured to stem 2. The other circuit-wire 15 is connected with the head of a screw 10, located at one extremity of the arc in which the screws are arranged. Now it will be seen that the circuit in which the lamp to be controlled lies is completed from wire 7 through arm 4, stem 2, arm 8, plate 9, and screw 10 to the other wire 15, provided the lamp is turned clear on and the current does not have to pass through any portion of the carbon 12, which is the case when the outer extremity of arm 4 is directly above the screw 10, with which wire 15 is electrically connected. When, however, it is desired to turn down the lamp or regulate the brilliancy, stem 2 is turned to the left over plates 9 or away from the screw 10, with which wire 15 is connected, thus compelling the current to travel through a greater or less resistance, according to the strength of light required. It will thus be seen that the light may be nicely regulated and controlled by my improved device. The last plate 9 to the left, or the one farthest from the one with which wire 15 is connected, should not be connected with the carbon. Hence when arm 8 reaches this plate the light is extinguished.

The device is provided with two plates 16 and 17, one secured to the base or plate 1 and the other connected with stem 2 and both connected with wire-cloth 18, thus forming a shield for the parts and at the same time permitting free circulation of the air for the pur-

pose of keeping the mechanism at a sufficiently-low temperature.

Having thus described my invention, what I claim is—

1. A rheostat consisting of an insulating-block 1, provided with a series of plates 9, insulated from each other, metal screws 10, passing up through the block into said plates, a carbon resistance supported upon block 1 and provided with clamps 14, surrounding the carbon, and secured by adjusting-screws 25, a wire connecting each screw 10 with screw 25, a rotating metal stem 2, secured to plate 1 and provided with a metal arm adapted to engage plates 9, and a circuit the wires of which are electrically connected, respectively, with stem 2 and the plate 9 at one extremity of the series of plates, substantially as and for the purpose set forth.

2. A rheostat consisting of an insulating-block 1, provided with a series of metal plates 9, insulated from one another, metal screws 10, passing up through block 1 into said plates, a carbon resistance provided with adjustable clamps, wires connecting said clamps with screws 10, a rotating metal stem 2, passing through block 1 and provided with a metal arm adapted to engage plates 9, a circuit the wires of which are electrically connected, respectively, with stem 2 and the plate 9 at one extremity of the series, and a casing inclosing the mechanism and provided with foraminated sides, substantially as and for the purpose set forth.

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

HARRY W. LAWRENCE.

Witnesses:

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