

W. M. BOWLES & C. O. ALLEN.
RHEOSTAT.

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1,048,645.

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Fig. 1.

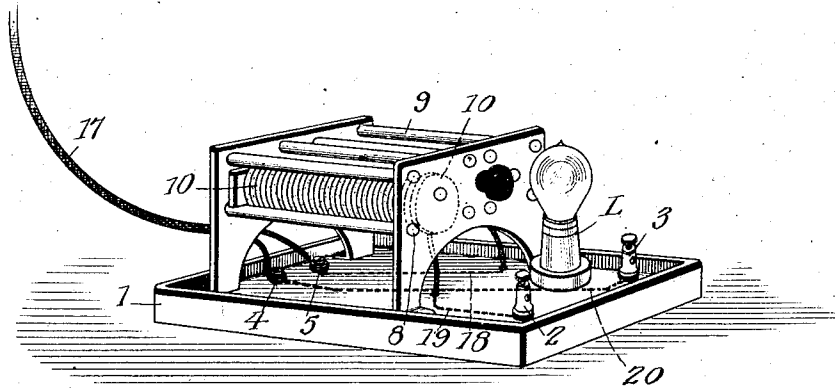


Fig. 2.

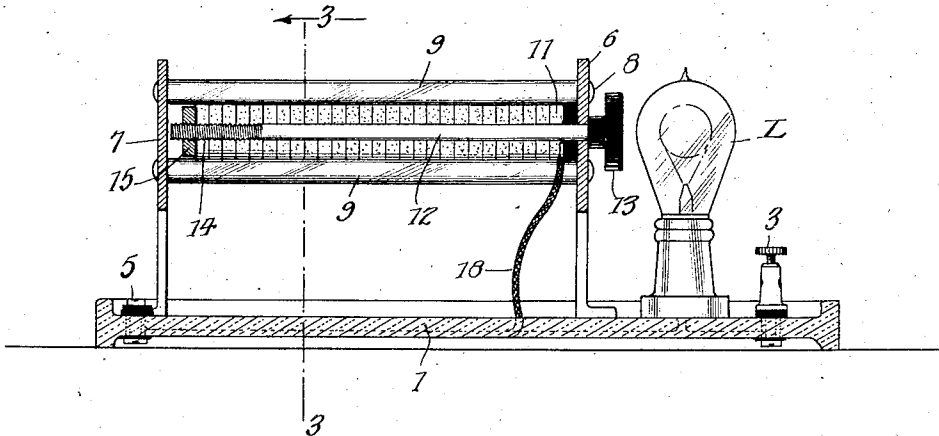
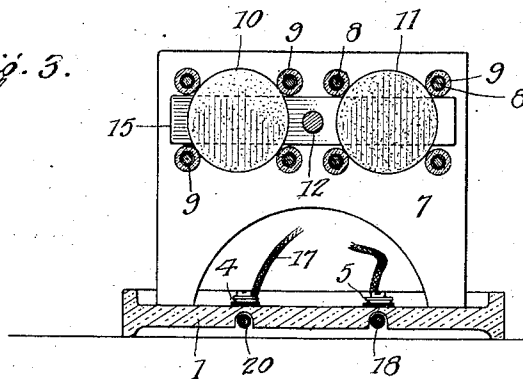


Fig. 3.



WITNESSES

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RHEOSTAT.

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To all whom it may concern:

Be it known that we, WILLIE M. BOWLES and CHARLEY O. ALLEN, citizens of the United States, and residents of Shawnee, in the county of Pottawatomie, State of Oklahoma, have made certain new and useful Improvements in Rheostats, of which the following is a specification.

Our invention relates to improvements in variable electrical resistances, or rheostats, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of our invention is to provide a novel form of variable resistance for controlling an electric current in which the resistance members consist of a series of carbon disks.

A further object of our invention is to provide means for varying the contact between these disks and thereby throwing into the circuit more or less resistance.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

Our invention is illustrated in the accompanying drawings forming part of this application, in which similar reference characters indicate like parts in the several views, and in which—

Figure 1 is a perspective view of the device; Fig. 2 is a central longitudinal section; and Fig. 3 is a section along the line 3—3 of Fig. 2 looking in the direction of the arrow.

In carrying out our invention we provide a base 1 of any suitable material, this base being preferably made in the shape shown in the figures. It is provided with the binding posts 2 and 3 at one end, and with the binding posts 4 and 5 at the other.

Supported upon the base 1 are the two metal plates 6 and 7 of the shape shown in the figures. These plates are connected by means of bolts 8. The latter are provided with insulating coverings, these insulating coverings in the present instance being shown as glass tubes 9 although they may be made of any suitable insulating material, such as hard rubber, fiber, or the like. As will be seen from Figs. 1 and 3, there are eight of these tubes, and these form supports for a series of carbon disks 10 and 11, the disks 10 being held between four of the

tubes 9, and the disks 11 being held between the remaining four, as clearly shown in Fig. 3. This arrangement permits a lateral movement of the disks longitudinally of the tubes.

A central rod 12 is provided which passes through an opening in the metal plate 6 and to which is secured an insulating thumb-wheel 13. The rod is threaded at 14 and passes through a threaded bar 16 which extends between the upper and lower rods 9 of both rows and in contact with the end disks. The opposite ends of the rows of disks 10 and 11 are insulated from the metal plate 6 by means of an insulating strip 16.

A flexible cable 17 which is designed to be connected with a source of electricity, has one of its strands fastened to the binding post 5 and the other to the binding post 4. The binding post 5 is connected by a conductor 18 with the end disk 11 next to the insulating strip 16 as shown in Fig. 2. A similar conductor 19 connects the binding post 2 with the end disk 10. A conductor 20 connects the binding posts 4 and 3.

A lamp L is carried by the base 1 and may be switched into or out of circuit on the wire 20.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. Current for any purpose desired may be had by connecting with the binding posts 2 and 3. The circuit through the rheostat will be as follows; from the source of electricity (not shown) through 17, 4, lamp L (if the latter is turned on), 3, thence to the place where it is to be used, through the binding post 2, 19, through the series of disks 10, bar 15, disks 11, conductor 18, binding-post 5, and back to the source through the cable 17.

The variation in the resistance may be accomplished by manipulating the thumb-wheel 13. When it is turned to the right the disks are forced together, the bar 15 being pulled forwardly by the turning of the rod 14. This makes a closer contact between the disks, the resistance is cut down thereby permitting a greater flow of current. On the reverse movement the resiliency of the carbon disks will cause them to spread apart, thereby increasing the resistance and cutting down the current.

The provision of the carbon disks per-

mits the use of currents having a large or small amperage, and the arrangement admits of a large variation in the strength of the current.

- 5 The device is especially useful in regulating the strength of current in the electric melting or soldering of metals, such as gold, silver, or the like, but obviously the device may be used for any purpose where a
10 change of current is desirable.

We claim:

1. In a rheostat, a base, a pair of plates carried thereby, a series of horizontal insulating supports disposed between said plates,
15 a series of round carbon disks slidably carried upon said insulating supports the edges of the disks being tangent to the supports, a threaded rod passing through one of said plates outside of the series of disks and being
20 provided with a thumb-wheel outside of said plate, and a threaded bar disposed between said insulating supports and adapted

to be engaged by said threaded rod for forcing the disks together.

2. In a rheostat, a base, a pair of plates 25 carried thereby, a series of horizontal insulating supports disposed between said plates, a series of round carbon disks slidably carried upon said insulating supports, the edges of said disks being tangent to said 30 supports, a second series of insulating supports and disks, a threaded rod passing through one of said plates between said first and said second series of disks, and being provided with a thumb wheel outside of said 35 plate, and a threaded bar disposed between said insulating supports and arranged to engage the end disks on each series for forcing the disks together.

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Witnesses:

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