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1,676,050

T. RHODUS

RHEOSTAT

Filed Dec. 18, 1925

Fig. 1.

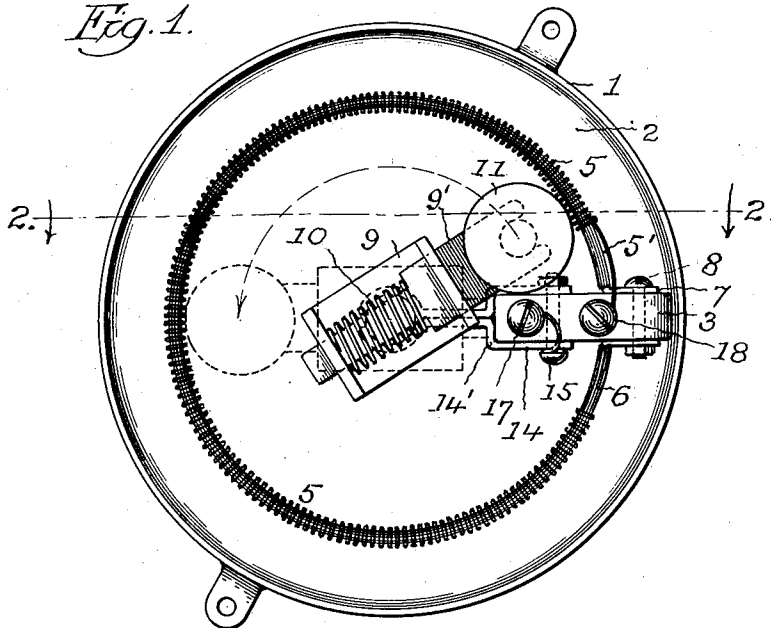


Fig. 2.

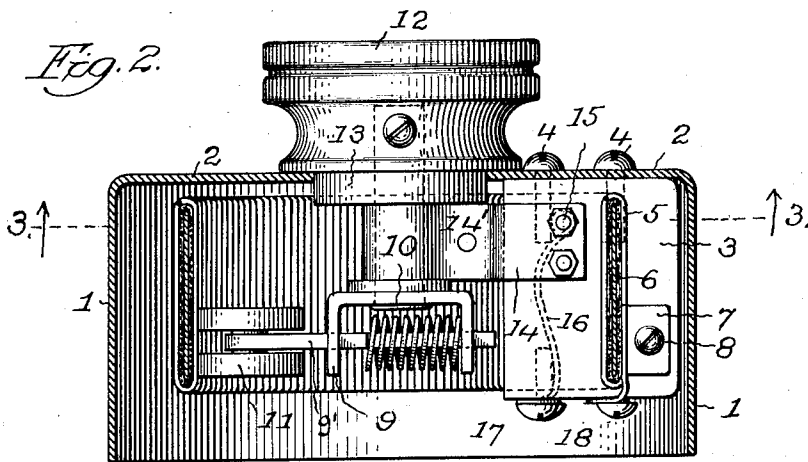
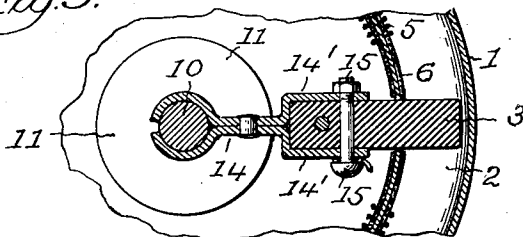


Fig. 3.



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UNITED STATES PATENT OFFICE.

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RHEOSTAT.

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This invention relates to that type of rheostats in which the resistance element is formed by a winding of resistance wire upon a curved supporting core, with the movable contact element having movement in a circular path, an example of which is shown in my prior Patent No. 1,230,221, dated June 19, 1917. And the present improvements have for their various objects:—

10 To provide a structural formation and arrangement of parts wherein the rheostat elements are secured to the enclosing shell of the rheostat in a substantial and readily accessible manner.

15 To provide a formation and combination of parts wherein a fixed supporting insulating member affords a substantial and effective support for the resistance element of the rheostat and for the electrical connections associated with said element, with said supporting member offering a minimum impedance to the ventilation of the rheostat by the normal upward passage of air in actual use.

20 To provide a construction and association of parts whereby a supporting insulating member fixedly attached to the resistance element of a rheostat provides a support for the journal member of the adjustable contact member, all as will hereinafter more fully appear.

In the accompanying drawings:

Fig. 1, is a bottom plan of a rheostat, illustrating the preferred association of parts in the invention.

35 Fig. 2, is a sectional elevation on line 2—2, Fig. 1.

Fig. 3, is a detailed horizontal section on line 3—3, Fig. 2.

40 Like reference numerals indicate like parts in the different views.

In the present improvement the enclosing casing 1 constitutes the sole supporting means for the rheostat parts and to such end is preferably of the form of a circular shell preferably open at one end and closed at the other end by a circular head 2 as shown with the various rheostat parts secured to said enclosing casing and preferably to said head in the manner hereinafter described in detail.

45 The carrying member for the stationary and movable elements of the rheostat is preferably of insulating material in the form preferably of a rectangular slab 3, preferably secured in a vertical position and

at one edge by screws 4, to the casing head 2, to extend into the interior of the casing. In the present construction the carrying block 3 and attaching screws 4 are located to one side of the center of the casing head 2, with said slab in radial relation to such casing center, so as to provide an effective and convenient attachment of the rheostat parts.

50 The stationary resistance member of the structure, as in my aforesaid Patent No. 1,230,221, will preferably comprise a series of open and flat spiral windings 5 of resistance wire, wound upon a curved insulating core 6, preferably of the split ring type shown, with the terminals or ends at the split or division of the core provided with lateral flanges 7 which abut against opposite sides of the fixed carrying slab 3 and are fixedly attached thereto by a cross bolt 8, with core 6 in concentric relation to the center of the enclosing casing 1.

55 The movable contact member of the structure, as in my aforesaid Patent No. 1,230,221, will preferably comprise a swinging arm guide 9, fixedly attached to a carrying shaft 10, and carrying a roller arm 9' slidably movable in said guide 9, said arm 9' carrying at one end a resiliently mounted revolvable roll 11 adapted for rolling contact upon the inner face of the resistance windings 5 aforesaid. In such construction the guide 9, arm 9', shaft 10 and roll 11 are formed of metal or like conductive material.

60 The other end of the carrying shaft 10 is provided with an operating handle or knob 12, the inner end of which is formed with a reduced circular bearing neck 13 having bearing engagement in a central orifice in the casing head 2 aforesaid, as shown in Fig. 2. The described construction provides means for maintaining the operating knob 12 in proper operative relation to the parts associated therewith.

65 The main support for the carrying shaft 10 of the movable contact member, consists of a bracket member 14 fixedly attached at one end to the carrying slab 3 aforesaid, and formed at its other end with a bearing orifice for an intermediate part of the shaft 10. In the preferred construction shown, the bracket member 14 consists of a pair of complementary halves 14 and 14' adapted to embrace opposite sides of the shaft 10 and preferably of the carrying slab 3, and be substantially attached to said slab by preferably cross bolts 15 as shown. The

bracket 14 is formed of metal or like conductive material, and one of its attaching bolts 15 is preferably used as an attaching means for a conductor 16 extending to one
6 of the pair of terminal posts 17 and 18, which are mounted on the insulating carrying slab 3 aforesaid and preferably on its edge. In such construction an end 5' of the resistance winding 5 extends to and is con-
10 nected to the other of the terminal posts above described.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent, is:—

15 1. In a rheostat of the type described, the combination of an enclosing shell, an insulating member secured to said shell and located wholly in offset relation to the center of said shell, a curved resistance member
20 secured to said insulating member, said insulating member extending from a point outside of to a point inside of the curve of said resistance member, a movable contact member adapted to make contact on said
25 resistance member, and adjustment means for said contact member.

2. In a rheostat of the type described, the combination of an enclosing shell having a top and side, a flat insulating member se-

cured to said shell and located wholly in off- 30
set relation to the center of said shell, a curved resistance member secured to said insulating member, said insulating member having one edge toward the top of said shell and one edge toward the center of said shell, 35
a current carrying movable contact member adapted to make contact on said resistance member, and adjustment means for said contact member.

3. In a rheostat of the type described, the 40
combination of a curved resistance member, an insulating member held in offset and radial relation to the center of the curve of said resistance member, a movable contact
45 member adapted to make contact on said resistance member, a shaft carrying said movable contact member for movement in concentric relation to the curved resistance member, a bracket member secured to said
50 insulating member and formed with a bearing orifice for said shaft, said bracket comprising complementary halves formed to embrace the shaft, and operating means substantially as set forth.

Signed at Chicago, Illinois, this 14th day 55
of December, 1925.

THOMAS RHODUS.