Oct. 26, 1926. 1,604,196

L. POTTER

RHEOSTAT

Filed Oct. 19, 1925.

Fig. 1,

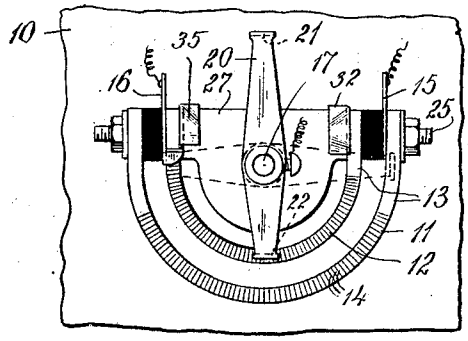


Fig. 6,

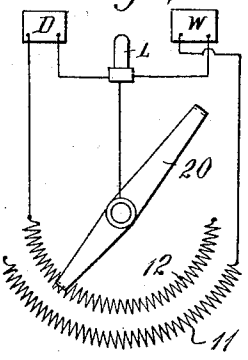


Fig. 2

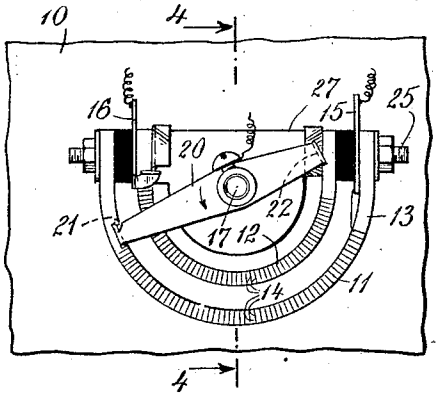


Fig. 4,

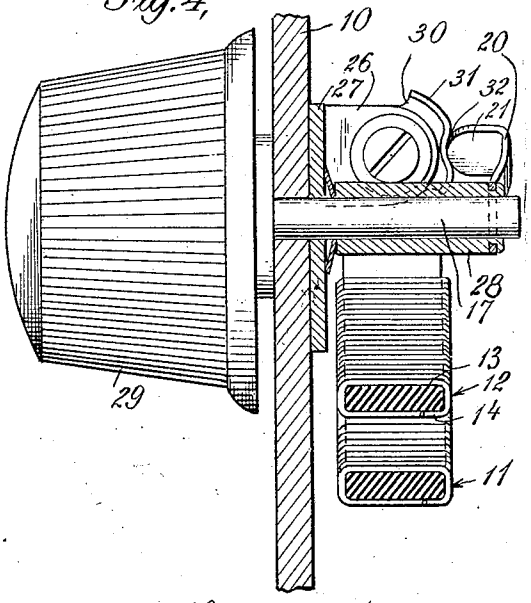
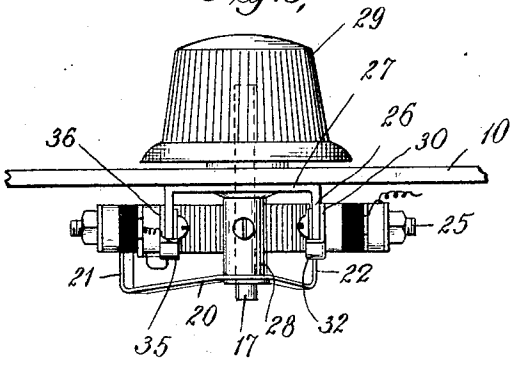


Fig. 3,



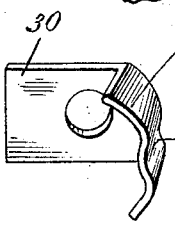


Fig. 5,

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UNITED STATES PATENT OFFICE.

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RHEOSTAT.

Application filed October 19, 1925. Serial No. 63,236.

This invention relates to rheostats.

It is often desirable to have available for use in an electric circuit a plurality of rheostats of different capacities. For instance, in a radio receiving set wet batteries and dry batteries are sometimes used alternatively and in such cases, it is desirable to have different resistance values available.

This invention has for its salient object to provide a rheostat comprising a plurality of resistance units and a contact member so constructed and arranged that this member will cooperate with any one of the units.

Another object of the invention is to provide a rheostat comprising a pair of resistance units and a contact member selectively engageable with either of said units.

Another object of the invention is to provide a device of the character described that is simple in construction, comprises few parts and can be economically manufactured.

Further objects of the invention will appear from the following specification taken in connection with the drawings, which form a part of this application, and in which—

Fig. 1 is an elevational view of a rheostat constructed in accordance with the invention.

Fig. 2 is a view similar to Fig. 1 but showing the variable contact arm in neutral position.

Fig. 3 is an elevational view taken at right angles to Fig. 2;

Fig. 4 is an enlarged sectional elevation taken substantially on line 4—4 of Fig. 2;

Fig. 5 is a perspective view of the non-positive stop for holding the variable contact arm in neutral position; and

Fig. 6 is a diagrammatic view illustrating one way in which the rheostat can be used.

The invention briefly described consists of a rheostat comprising a pair of resistance units arcuate in form and concentrically disposed. A contact member is rotatably mounted at the center of the arcuate units and has portions extending in opposite directions from its pivot or center of rotation adapted to engage the respective units. Further details of the invention will appear from the following description.

In the embodiment of the invention illustrated, the rheostat is mounted upon a base 10 and comprises a pair of resistance units 11 and 12. Each unit has a core 13 of insulating material and comprises a plurality of turns of wire 14. The turns of the unit 11 are connected to a contact member 15 disposed at one end of the unit and the turns of the unit 12 are connected to a contact member 16.

It will be noted that the two units are arcuate in form and are concentrically disposed with reference to the center of rotation of a shaft 17.

The variable contact member consists of an arm 20 which is secured intermediate its ends to the shaft 17 and is rotatable about the shaft as a center. The arm 20 is preferably formed of resilient material and has offset ends 21 and 22 adapted to engage respectively the turns of the unit 11 and the turns of the unit 12.

The resistance units have their cores 13 secured by bolts 25 to lugs 26 formed on a plate 27 and the plate is secured to the base 10 by means of a sleeve 28 secured on the shaft 17 between the contact arm 20 and the plate 27. The outer end of the shaft has mounted thereon in any suitable manner a knob 29 for rotating the shaft.

A non-positive stop is provided for holding the contact member in neutral position. This stop consists of a member 30 which is secured by one of the bolts 25 and has a flange 31 at the outer end thereof provided with a depression 32 adapted to receive the end 22 of the arm 20 when the arm is disposed in neutral position.

A fixed stop is provided for limiting the rotational movement of the arm. This stop consists of a lug 35 carried by a member 36 which is secured by the other bolt 25. It will be noted that the lug 35 is disposed in the path of movement of the end 22 of the arm 20 and forms a stop for limiting the movement of the arm in either direction.

In Fig. 1 the arm 20 is adjusted to a position in which the end 22 is disposed intermediate the ends of the turns of the unit 12.

In Fig. 2 the arm is disposed in neutral position and if rotated from this position in an anti-clockwise direction the end 21 of the arm would engage the turns of the unit 11 moving from maximum to minimum resistance. If, on the other hand, the arm were moved in a clockwise direction from the po-

sition shown in Fig. 2, the opposite end 22 of the arm would engage the turns of the unit 12, moving from a maximum to a minimum position of adjustment on this unit.

In Fig. 6 one manner of using the rheostat is illustrated. In this figure, the arm 20 is connected to one terminal of the lamp L; one end of the unit 12 is connected to one terminal of the dry battery D and the other terminal of the dry battery is connected to the lamp. One end of the unit 11 is connected to one terminal of a wet or storage battery W and the other terminal of the battery is connected to the lamp. With the arm 20 in the position illustrated in Fig. 6, a portion of the unit 12 is connected in the circuit with the dry battery and lamp. If the longer arm of the variable contact member 20 were disposed in engagement with the unit 11, the resistance of this unit would be connected in the circuit with the wet battery and the lamp. Thus, when the wet battery is used, the unit 11 is utilized.

Although one specific embodiment of the invention has been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claims.

What I claim is:

1. A rheostat comprising a pair of concentric arcuate resistance units insulated from each other, a shaft disposed at the center of said units, a variable contact member mounted intermediate its ends on the shaft, one end of said member being engageable in one position of adjustment of said member with one resistance unit and the other end being engageable in another position of adjustment of said member with the other unit, said variable contact member being arragned to coact with only one of said units in any one position of adjustment

2. A rheostat comprising a pair of concentric arcuate resistance units insulated from each other, a shaft disposed at the center of said units, a variable contact member mounted intermediate its ends on the shaft, one end of said member being engageable with one resistance unit and the other end being engageable with the other unit, and a stop disposed in the path of one of the ends of the contact member for limiting the movement of said member.

In witness whereof, I have hereunto set my hand this 9th day of October, 1924.

LEO POTTER.