

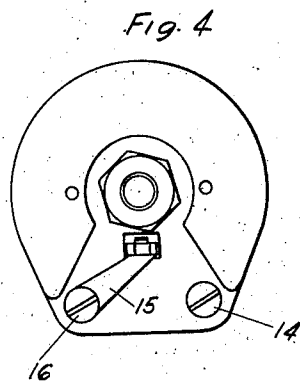
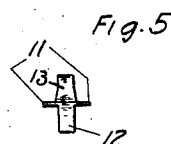
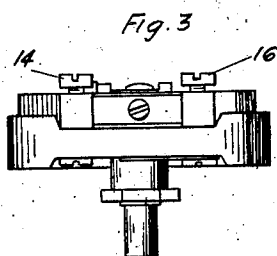
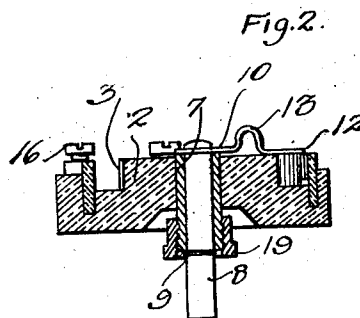
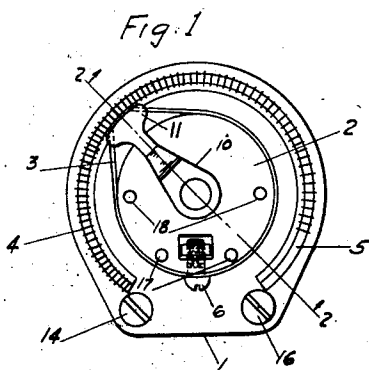
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RHEOSTAT

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UNITED STATES PATENT OFFICE.

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RHEOSTAT.

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This invention relates to improvements in rheostats and has for one of its objects, the securing of a large contact surface, between the wire of the resistance unit and the movable contact element.

Another object of my invention is to provide a rheostat which reduces to a minimum the amount of wear between the friction surfaces.

Another object of my invention is to provide a rheostat which is quiet in its operation, and a still further object of my invention is to provide a rheostat in which the contact surface between the movable element and the resistance unit is self-aligning and in which means is provided to take up irregularities in manufacture.

Other objects will be observed as the description progresses.

In the drawings Fig. 1 is a view of the rheostat looking at the side on which the resistance unit is mounted.

Figure 2 is a sectional view on the line 2-2 of Figure 1.

Figure 3 is a side view of the rheostat.

Figure 4 is a view of the rheostat on the side opposite to that shown in Figure 1.

Figure 5 is a view, looking at the end adjacent the resistance unit, of the contact lever.

In the drawing 1, is a base of any suitable insulating material. The base 1 is provided with a hub portion 2, around which is disposed a metallic band 3, which is preferably made of any good conducting material, and the same may be plated with silver or other metal, or alloy to insure a good contact as the band 3 is brought into engagement with the turns 4 wound on a suitable insulator 5. The resistance unit comprising the wire 4 and insulator 5 is preferably rectangular in shape and positioned edgewise in a groove in the base 1, being held therein in any satisfactory manner. The band 3, is held in position on the hub 2 as by means of a screw 6. Passing through and fastened to the base 1 is a sleeve 7. An operating shaft 8 is held in the sleeve 7 by a snap lock ring 9 which fits in a groove in the shaft 8. Carried on the end of the shaft 8 is a contact arm or lever 10, which has enlargements or guides 11 adjacent the turned over end 12, on which rests the band 3. The arm or lever 10 is provided with a loop 13, which provides an automatic take-up or gives a resilient pressure between the band 3 and the resistance

wire 4, so that a good contact is always insured between the band and the resistance wire 4. One end of the resistance wire 4 extends closely adjacent, and is connected to a terminal post 14, while the other end is anchored to the insulator 5. The contact band 3 is joined by the connector strap 15 to the terminal post 16, so that a potentiometer circuit is completed, for example, from the terminal post 14 to the wire 4, band 3, connector strap 15 to terminal post 16. A pair of stops 17 are provided to engage the arm 10, as the same is turned by the shaft 8. The rheostat may be mounted by means of screws or studs passing through the holes 18 or the rheostat may be mounted by means of a nut 19 engaging the threaded end of the sleeve 7, by the flange on the nut 19 engaging the mounting panel.

From the preceding description it will be readily understood that as the shaft 8 is turned that the end 12 of the contact arm 10 slides under the contact band 3 and the band is rolled into contact with the convolutions of the resistance wire 4. This action gives a very smooth, easy and quiet operating rheostat, and a good contact is insured through the means of loop 13 as heretofore described.

Since the band 3 engages the resistance wire on the long portion of a plurality of turns, considerable current may be carried through the rheostat without overheating the contact and due to the construction heretofore described any slight longitudinal movement of the shaft in the sleeve 7 is compensated for as the band is more or less self aligning over the end of the contact arm.

It will be obvious that changes may be made in the details of my invention without departing from the spirit of the same, and the scope of the appended claims.

Having thus described my invention, what I claim is:

1. A rheostat comprising a base, a shaft rotatably carried by the base and extending therethrough, a resistance unit consisting of an insulator and wire wound thereon arcuately carried on the base in radially spaced relation to the axis of the shaft, a one piece arm carried on the end of the shaft and extending to the resistance unit and a contact band anchored on the base and extending between the end of the arm and the turns of the resistance wire whereby as the arm is moved the band is rolled into contact with the wire,

said arm being provided with integral means comprising a flexible loop for putting a resilient pressure on said contact band.

2. A rheostat comprising a base, a shaft
5 rotatably carried by the base and extending
therethrough, a resistance unit consisting
of an insulator and wire wound thereon arcu-
ately carried on the base in radially spaced
relation to the axis of the shaft, said base
10 having a hub portion around the shaft and a
metallic band disposed around and fastened
to the hub and passing over the end of the
arm into contact with said turns of resistance
15 wire whereby as the arm is turned the band
and means associated with the arm for ob-
taining a resilient pressure between the band
and the resistance wire.

3. A rheostat comprising a base, a shaft
20 rotatably carried by the base and extending
therethrough, a resistance unit consisting of
an insulator and wire wound thereon arcu-
ately carried on the base in radially spaced
relation to the axis of the shaft, an arm car-
25 ried by the shaft and extending to the resist-

ance unit, said arm having laterally extend-
ing guide fingers, said base having a hub
portion around the shaft and a metallic band
disposed around and fastened to the hub and
passing over the end of the arm back of the
20 guide fingers into contact with said turns of
wire as and for the purposes described and
pressure take up means included with the
arm.

4. A rheostat comprising a base, an oper- 35
ating member carried by the base, a resist-
ance unit also carried by the base, a flexible
contact member without free ends anchored
to the base but very loosely fitting around a
part of the base, but adapted to have differ- 40
ent parts thereof brought successively into
engagement with the resistance unit and
means acting between the operating member
and the flexible contact member for moving
different parts thereof into contact with the 45
resistance unit.

In testimony whereof, I affix my signa-
ture.

WILLIAM EDWARD NEWMAN.