

Aug. 19, 1930.

K. YOSHIYASU

1,773,609

RHEOSTAT

Filed Nov. 10, 1925

Fig. 1.

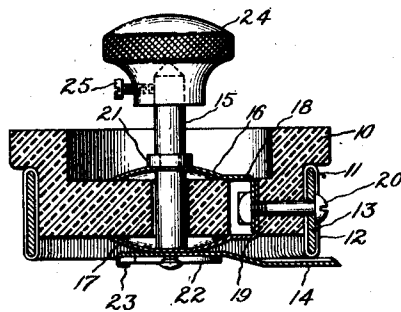
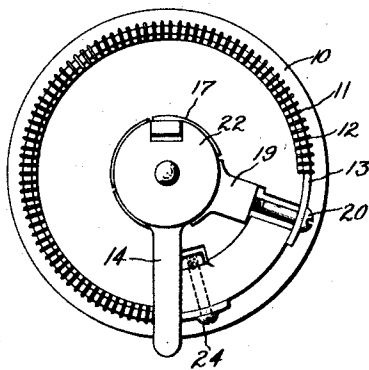


Fig. 2.



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UNITED STATES PATENT OFFICE

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RHEOSTAT

Application filed November 10, 1925, Serial No. 68,212, and in Japan April 6, 1925.

This invention relates to rheostats, and more particularly to rheostats of the revolving contact type, such as are commonly used for controlling the filament current of radio vacuum tubes or in other similar service.

The invention provides an improved, and at the same time an inexpensive, construction wherein the shaft for operating the revolving contact of the rheostat is mounted in resilient supports so arranged as to frictionally hold the revolving contact in any selected position and also establish a low resistance sliding electrical connection therewith.

A preferred form of the improved rheostat is illustrated in the accompanying drawing in which Fig. 1 is a sectional view and Fig. 2 is a bottom plan view.

In the drawing a base 10, preferably formed of moulded insulating material, is designed to receive the resistance element 11, which may be formed by winding the resistance wire 12 upon a strip of insulating material 13 bent into substantially circular form as shown in the drawing. The revolving contact 14 for controlling the resistance element is carried by the operating shaft 15 and is arranged to slide over the exposed end turns of the resistance wire 12.

The operating shaft 15 is rotatably supported by means of the two cooperating resilient supporting members 16 and 17 which, as shown, are in the form of elastic washers having suitable extensions 18 and 19 bent over in nesting relation so as to be secured to the base 10 by means of a single bolt 20. The elastic washers 16 and 17 are interposed between the abutments formed by the collar 21 which is fixed upon the operating shaft 15 and the revolving contact member 14 so as to support the shaft 15 with the contact 14 secured to the end thereof in operative relation with the resistor 12 and at the same time establish a low resistance sliding electrical connection through each washer between the revolving contact 14 and the terminal screw 20. The supporting plate 22 is riveted or otherwise secured to the end of the operating shaft 15, with the elastic washer 16 pressed in sliding frictional engagement with the collar 21 and the elastic washer 17 pressed in similar

engagement with the revolving contact 14. The washer 22 may be slotted to receive the upturned end 23 of the revolving contact 14 and thereby lock the two together. A suitable operating knob 24 is secured to the upper end of the operating shaft 15 by means of the set screw 25.

As shown in Fig. 2, the resistance element 11 is secured to the base 10 by the bolts 20 and 24, which also serve as the terminal connections of the rheostat.

Due to the mounting of the revolving contact 14 and the operating shaft 15 in the resilient supports 16 and 17, the revolving contact 14 is readily maintained in any selected position and the direct frictional engagement of the supports with the cooperating abutments provide a low resistance sliding electrical connection with the revolving contact 14.

What I claim as new and desire to secure by Letters Patent of the United States is,—

1. A rheostat comprising a base provided with an aperture, a resistor mounted thereon, a contact member cooperating with said resistor, a shaft for operating said contact member extending through said aperture, a pair of spaced-apart abutments on said shaft positioned on opposite sides of said base, and a pair of oppositely acting resilient members secured to said base on opposite sides thereof between said base and said abutments so as to provide bearing supports for said shaft on said base, and so as to maintain said contact member in resilient engagement with said resistor.

2. A rheostat comprising a base of insulating material provided with an aperture extending therethrough, a resistance element mounted on said base, a revolving contact for controlling said resistance element, a shaft extending through the aperture provided in said base and having said revolving contact secured at one end thereof and an opposing abutment located on the opposite side of said base, and a pair of resilient washers on opposite sides of said base each having an extension secured to said base, one of said washers being in frictional sliding engagement with said revolving contact and the other being in

frictional sliding engagement with said abutment so that said shaft is rotatably supported on said base by means of said washers with said revolving contact in sliding engagement with said resistance element, and so that a sliding electrical contact is established with said revolving contact through said washers.

3. A rheostat comprising a base of insulating material, a resistor mounted on the periphery of said base, a contact member, a shaft extending through said base for operating said member, a pair of opposing resilient members cooperating with said base and said shaft for holding the shaft in position on the base and the contact member in engagement with the said resistor, said resilient members being disposed upon opposite sides of said base and having interlocking portions which pass through said base, and a common securing means for holding said resistor on said base and said interlocking portions in operative relation with each other and said base.

In witness whereof, I have hereunto set my hand this 22nd day of October, 1925.

KYOHEI YOSHIYASU.

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