June 29, 1937. J. B. L. VOLLENBROEK 2,085,404

VARIABLE RESISTANCE

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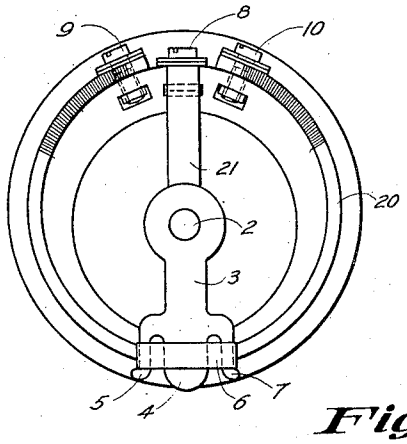


Fig. 1

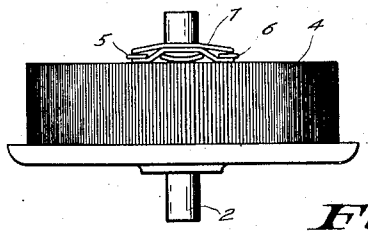


Fig. 2

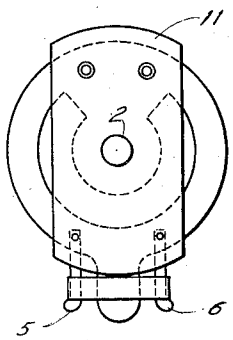


Fig. 3

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VARIABLE RESISTANCE

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4 Claims. (Cl. 201—56)

This invention relates to resistances or potentiometers provided with a sliding contact and more particularly to high ohmic wire wound resistances. Such resistances are essentially used in radio receiving apparatus or amplifiers in which they serve for controlling the volume level. They have the draw-back that after having been used for some time the adjustment is accompanied by a cracking noise due to bad contacts.

According to the invention at least one attachment connected to the arm of the sliding contact is provided, which attachment is continuously in contact with the resistor surface and is coated with a material by which the contact surface of the resistance is kept clean. The dirt particles reaching the contact surface due to wear or for other reasons are taken up by the attachment moving simultaneously with the contact arm over the contact surface. It has been found that in this way a noiseless adjustment is ensured even after having been operated for a considerable time.

The invention will be more clearly understood by reference to the accompanying drawing representing, by way of example, one form of construction of a potentiometer according to the invention.

In the drawing,

Fig. 1 is a top view of a potentiometer constructed according to the invention;

Fig. 2 is a front view of the device of Fig. 1 and,

Fig. 3 is a top view of a modified form of contact device.

The resistance 1 is constituted by a thin wire which is wound on an insulating body 20 and over which slides a spring contact 4 mounted on an arm 3 secured to the shaft 2. The shaft is connected to a junction terminal 8 by a metallic strip 21 and the ends of the resistance wire are connected to terminals 9 and 10. The movable contact arm 3 has a fork-shaped end. The tines 5 and 6 at the side of the contact 4 move simultaneously with it over the contact surface and are coated with a material, for instance, plush or leather, which takes up any dust particles on resistor 1. As shown in Fig. 2 the coating is preferably formed as an endless band 7 which passes over contact piece 4 and under tines 5 and 6.

According to a further feature of the invention the attachments or tines may be provided so as to be insulated from each other and from the contact arm 4. Such a form of construction is represented in Figure 3. The attachments 5 and 6 are secured on the insulating disc 11 which is mechanically connected to the shaft 2. In this manner the attachments cannot short circuit parts of the resistance, in the case of wear of the coating material or if it is damaged.

I claim:

1. A variable resistance device comprising a fixed resistance wire, a movable member contacting with said resistance wire, means movable with said movable contacting member and spaced from said resistance wire, and a resilient material carried by said spaced movable means and in engagement with the resistance wire on both sides of said movable member for cleaning said wire in the path of travel of said movable contacting member in either direction.

2. A variable resistance device comprising a fixed resistance wire, a movable arm having a part contacting with said resistance wire, said arm having formed integral therewith projections which extend one on each side of the contacting part, and a cleaning substance carried by said projections in contacting relation with the resistance wire whereby movement of the contact arm in either direction along the resistance wire will cause said substance to clean the surface of the resistance wire in the path of travel on the contact arm.

3. A variable resistance device comprising a fixed resistance wire, a movable arm having a part contacting with said resistance wire, an insulator carried by said arm, said insulator being provided with a pair of projections which extend one on each side of the contacting part of the movable arm, and a cleaning substance carried by said projections in contacting relation with the resistance wire whereby movement of the contact arm in either direction along the resistance wire will cause said substance to clean the surface of the resistance wire in the path of travel on the contact arm.

4. A variable resistance device comprising a fixed resistance, a movable arm having spaced apart portions separated a slight distance from said resistance and an intermediate resilient portion in contact with said resistance, means for moving said arm along said resistance and an endless band of resilient material looped about the spaced apart portions of said arm so as to be held in firm contact with said fixed resistance and having its center portion passing over the upper face of the intermediate resilient portion.

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