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POTENTIOMETER OR RESISTOR ELEMENT

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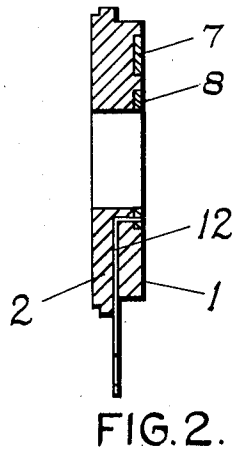
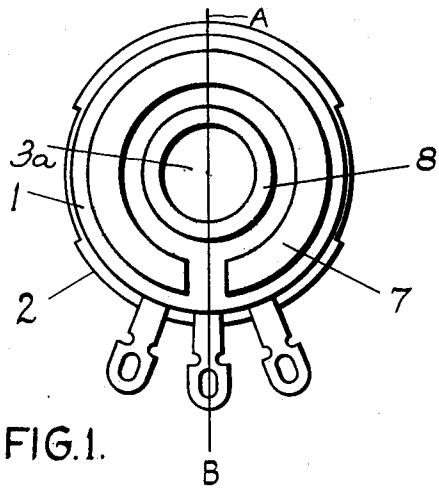


FIG. 1.

FIG. 2.

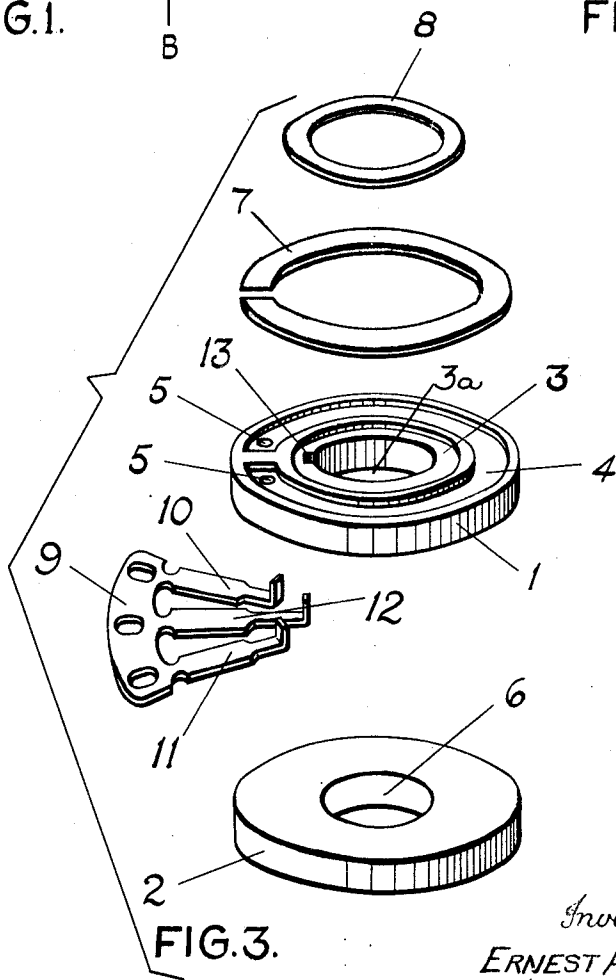


FIG. 3.

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## POTENTIOMETER OR RESISTOR ELEMENT

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3 Claims. (Cl. 201—55)

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This invention relates to potentiometers or resistor elements which are particularly suitable for tele-communication circuits for controlling the output volume whether automatically or manually.

It has previously been proposed to provide a resistance device consisting of a moulded base which contains a resistor element and a continuous metallic terminal and collector ring, said resistor element and collector ring are embedded in one face of the base, and the terminal portion of the collector ring is partly embedded in the base and extends therefrom. The resistor element is provided with a tap terminal at the respective ends. An object of the present invention is to dispense with the metal ring.

Another object of the invention is to provide a ring of non-metallic material in a moulded base which is electrically connected to a terminal partly embedded in the base.

A further object of the invention is to provide a terminal blank which is cropped to form three separate terminals.

The invention will now be described with reference to the accompanying drawings, in which:  
Fig. 1 is a front view of a moulded resistor assembly.

Fig. 2 is a section on line A—B of Fig. 1, and

Fig. 3 is an exploded view of the whole assembly.

Referring to the drawings:

I provide a cold pressed insulated base 1 and backing plate 2 in the form of two discs. The base plate 1 has an annular recess 3 around a central aperture 3<sup>a</sup> and an interrupted circular recess 4 with apertures 5 at or near the respective ends. The backing plate 2 has a central opening 6 of the same diameter as the aperture 3 in the base. A resistor track 7 of compressed powdered resistor material and a thermo-setting binder is placed in the interrupted recess.

I next provide a cold pressed ring 8 composed of powdered carbon and a thermo-setting binder for placing in the annular recess 3 in the base 1.

An E-shaped metal terminal blank 9 is provided, in which the ends of the outer limbs 10, 11 are turned over at right angles, for serving as terminal connections to the ends of the resistor 7 and the intermediate limb 12 is similarly turned over to provide an electrical connection to the ring 8.

In assembly, the E-shaped terminal blank 9 is radially disposed on the reverse side of the base in such a manner that the turned up ends of the outer limbs enter the holes 5 at the respective ends of the interrupted recess 4. The turned up

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end of limb 12 of the terminal blank extends into a slot 13 in the annular recess 3. I next place the backing plate 2 face to face with the reverse side of the base 1 with the terminal blank 9 interposed therebetween.

The semi-circular element forming the resistor track 7 is placed in the interrupted recess 4 and the turned up ends of the E-shaped terminal blank 9 engage with the respective ends of the track 7.

The carbon ring 8 is then placed in the annular recess 3<sup>a</sup> in the base 1 into contact with the turned up end of the centre limb 12 of the E-shaped terminal 9.

I next place the assembly in a mould and heat same to about 180° C. and apply pressure when the component parts are moulded together, thereby forming on one face of the base 1 an interrupted resistor track 7 and a separate carbon ring 8, and two limbs of the terminal blank 9 are embedded in the ends of the resistor track and the other limb of said blank 9 extends to the carbon ring. The E-shaped terminal blank 9 is then cropped to provide three separate terminals which extend from the periphery of the base as shown in Fig. 1.

I claim:

1. In a resistor of the moulded type a base of moulded insulation material, said base having an interrupted cavity, a moulded resistor element in the cavity and a conducting ring of non-metallic material placed around a central aperture in the base, terminal tags embedded in said moulded base forming separate terminals, two terminal tags electrically connected to the respective ends of the moulded resistor and a third tag electrically connected to the non-metallic ring.

2. In a resistor of the moulded type a base of moulded insulation material, a backing plate, said base having an interrupted cavity, and a recessed central aperture, and said backing plate has a centre hole of the same diameter as the aperture in the base, a moulded resistor element embedded in the cavity and a conducting ring of non-metallic material is placed in the flanged aperture in said base, terminal tags on the reverse side of the base forming separate terminals, two terminal tags electrically connected to the respective ends of the moulded resistor and a third tag electrically connected to the non-metallic ring, said backing plate is placed on the reverse side of the base and the whole assembly is moulded into a single unit.

3. A method of forming a resistor element including a moulded backing plate with a central

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opening, an E-shaped terminal blank with turned up ends, a base having an interrupted cavity with a hole at each end and an annular recess with an incision therein, comprising the steps of placing the terminal blank on the reverse side of the base with the turned up ends of the outer limbs passing through the holes in the cavity and the turned up end of the centre limb entering the incision in the base, then placing the backing plate on the reverse side of the base, filling the

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cavity with a powdered resistance material and a thermo-plastic binder, inserting a non-metallic conductive ring in the aperture in the base, applying heat and pressure to the whole assembly and finally cropping the terminal blank into three separate terminal tags.

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No references cited.