Sept. 20, 1949. S. A. BOCKING 2,482,316

LAMELLA RESISTANCE UNIT

Filed June 6, 1946

Fig. 1

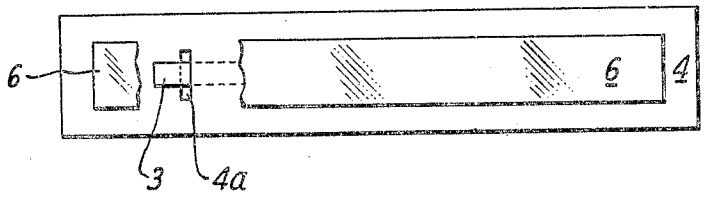
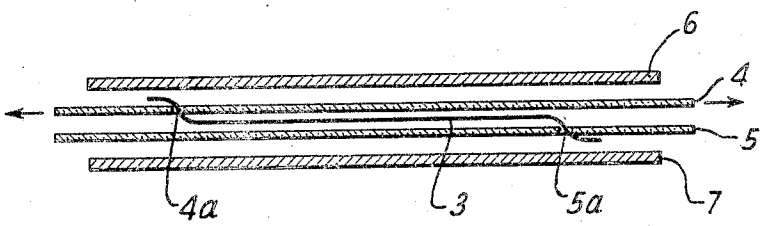


Fig. 2



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LAMELLA RESISTANCE UNIT

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3 Claims. (Cl. 201—73)

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This invention relates to small resistance units of the order of one ohm or less and which find many applications in measuring apparatus and the like.

The principal object of the invention is to provide a novel form of resistor unit which is cheap, easy to assemble, and whose effective resistance is readily adjustable, during assembly, to any required value.

A further object of the invention is to provide a resistance unit assembly in which good electrical contact is maintained between the resistive material and its terminals without soldering or welding thereby substantially reducing the possibility of damaging the unit during assembly.

A still further object of the invention is to provide a resistance unit assembly in which the nature of the contact between the resistive material and its terminals is such that it is immume to physical or chemical changes and the resistance once adjusted will maintain its value.

The above objectives are achieved in accordance with the present invention by a resistance unit assembly comprising two strips of flexible insulating material disposed between two strips of conductive material with a strip of resistive material located between said strips of insulating material, said resistive strip having one of its ends in electrical contact with one of said strips of conductive material and the other of its ends in electrical contact with the other of said strips of conductive material, and means for varying the effective resistance of said strip of resistive material by adjustment of one or both of said strips of insulating material in relation to said resistive strip.

For a more complete understanding of the invention attention is now directed to the following description in connection with the accompanying drawing of which the two figures 1 and 2 illustrate in plan and side cross-section, respectively, one practical embodiment of said invention.

Referring to the drawings in which like parts are designated by similar reference numerals, a narrow strip of resistive material 3, such as platinum or like metal foil, is placed in between two larger strips of flexible insulating material 4, 5 which in turn are placed between two further strips 6, 7 of highly conductive material such as gold plated copper or brass and which form the terminal members of the unit.

The flexible insulating strips 4, 5 are preferably soft and pliable so that they will not tear

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the resistive material during the assembly of the unit. One suitable material for these insulating strips is the transparent wrapping film marketed under the registered trade-mark "Cellophane." "Cellophane" is soft, cheap and readily obtainable in thin sheets or films.

Each insulating strip 4, 5 is provided with a through slot or aperture 4a, 5a respectively.

One end of the resistive strip 3 is passed through the slot 4a in the insulating strip 4 while the other end of the strip 3 is passed through the slot 5a in the insulating strip 5.

At one end of the assembly, for example the end where the resistive strip 3 is in contact with the terminal strip 7, the three strips 5, 3, 7 are bonded together by means of a suitable cement in such a manner that the associated end of the resistive strip 3 is maintained in electrical contact with the strip 7 and not insulated therefrom by the cement.

At the other end of the assembly, the resistive strip 3 projects through one slot 4a in the insulating strip 4 as shown in the drawings.

A preliminary adjustment of the resistance value of the unit can be made by sliding the insulating strip 4 until approximately the right amount of resistive material 3 lies between the points of contact with the terminal strips 6, 7.

The whole assembly is then firmly pressed together in some suitable jig and the resistance value between the terminal strips 6, 7 measured. If the resistance is not of correct value, then an adjustment may be quickly and easily made by loosening the clamps of the jig and sliding the insulating strip 4 in the required direction to expose more or less of the resistive strip 3 to contact with the terminal strip 6.

When the correct resistance value has been obtained the insulating strip 4 is then cemented to strips 6 and 3.

Although, in the present example, the adjustment of the resistance value of the assembly has been described with respect to the movement of the insulating strip 4 only, it will be readily appreciated that a similar adjustment may be obtained by movement of the strip 5, either independently of movement of strip 4 or in conjunction therewith.

What I claim is:

1. A variable resistor unit having a resistance of the order of one ohm or less comprising a pair of insulating members each having an aperture formed therein and adapted to be positioned adjacent one another with said apertures disposed in spacial relation, a strip of resistive material

positioned between said insulating members and having the ends of said resistive material each inserted through one of said apertures and overlying a portion of its respective insulating material, a pair of conducting material strips, one of which is positioned on the outer surface of each of said insulating members and being adapted to engage the portion of resistive material overlying each of said insulating members, and means for securing the entire assembly in fixed operative relation.

2. A variable resistor unit having a resistance of the order of one ohm or less comprising a pair of separable elongated insulating members each having a single aperture formed therein and adapted to be positioned adjacent one another with said apertures disposed in spacial relation, a strip of resistive material positioned longitudinally between said elongated insulating members and having the ends of said resistive material each inserted through one of said apertures and overlying a portion of its respective insulating material, a pair of conducting material strips, one of which is positioned on the outer surface of each of said insulating members and being adapted to engage the portion of resistive material overlying each of said insulating members, and cementing means for securing the entire assembly in fixed operative relation.

3. A variable resistor unit having a resistance

of the order of one ohm or less comprising a pair of separable elongated insulating members each having a single aperture formed therein and adapted to be positioned adjacent one another with said apertures disposed in spacial relation, a strip of resistive material positioned longitudinally between said elongated insulating members and having the ends of said resistive material each inserted through one of said apertures and overlying a portion of its respective insulating material, a pair of conducting material strips, one of which is positioned on the outer surface of each of said insulating members and being adapted to engage the portion of resistive material overlying each of said insulating members, and means for securely compressing each of said overlying portions of resistive material between one of said apertured insulating members and one of said conducting strips.

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The following references are of record in the file of this patent:

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