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HIGH OHMIC RESISTANCES

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4 Claims. (Cl. 201—75)

The present invention relates to high ohmic resistances of the kind which are formed by depositing a conducting film, for example of carbon or metal, on an insulating body, for example of porcelain.

With resistances of the kind set forth it is frequently required to provide them with a lacquer or varnish coating, which is usually applied directly over the conducting film, and this coating is found to affect deleteriously the handling properties and the resistance to moisture under tropical conditions of the resistance. It has been found that the reason for the adverse effect of the coating is that, in general, a lacquer or varnish coating of the kind normally employed is either too brittle or not sufficiently waterproof, so that it becomes cracked or strained in course of time. As the coating is also strongly adherent to the conducting film, when the coating becomes strained and distorted the film is likewise strained and may be rendered discontinuous or destroyed.

The object of the invention is to provide a high ohmic resistance of the kind set forth having a protective coating of varnish or lacquer wherein the difficulties above referred to do not arise.

According to one feature of the present invention, a high ohmic resistance of the kind set forth is provided having a single varnish or lacquer coating applied over said conducting film, said coating being of such a character that the adherence of said film to said coating is less than the adherence of said film to said body, whereby said coating can be strained or distorted without setting up excessive strains in said film which affect the stability of the resistance.

According to another feature of the present invention, a resistance of the kind set forth is provided having a coating of polystyrol applied directly in contact with said conducting film.

In order that the nature of the said invention may be clearly understood and readily carried into effect, the application of the invention to the manufacture of a high ohmic resistance having a body of porcelain and a conducting film of carbon, the film being formed by "cracking" a hydrocarbon on the porcelain body, will now be described by way of example.

In accordance with the invention, the aforesaid resistance consisting of a body of porcelain having a conducting film of carbon is coated with a lacquer formed of polystyrol, preferably in the form known under the registered trade-mark "Distrine," dissolved in xylene, and is dried to cause the xylene to evaporate, leaving the polystyrol unchanged chemically. The polystyrol coating thus formed does not adhere to the carbon film in such a way as to affect its stability. The coating is water-resistant, and is a very good insulator. Moreover, while the polystyrol coating effectively seals the carbon film, it can be scraped off without removing the film.

As the polystyrol coating is thin, and tends to chip in handling, it may be preferred to provide the coated resistance with a protective cover. For example, a sleeve of polyvinyl-chloride may be employed for this purpose. This sleeve may be shrunk on to the resistance, being first swelled in xylene and then pushed on the resistance. Excess free xylene from the sleeve softens the surface of the polystyrol coating and when the sleeve is dry and has contracted tightly on to the coating, the polystyrol coating adheres firmly to both the sleeve and the resistance so that the assembly is completely sealed. Xylene is finally removed from the polystyrol by vacuum-drying at a temperature of 100° C. for four hours.

What I claim is:

1. A high ohmic resistance of the type comprising a support body provided with a conducting film, the improvement comprising a single varnish or lacquer coating applied over said conducting film, said coating being of such a character that the adherence of said film to said coating is less than the adherence of said film to said body, whereby said coating can be strained or distorted without setting up excessive strains in said film which affect the stability of the resistance, and a protective cover for said coating consisting of a sleeve of polyvinyl chloride shrunk onto it.

2. A method of producing a resistor which includes providing a conductive film on an insulation body, coating the film with a water-resistant insulation material thereby effectively sealing the conductive film, surrounding the water-resistant coating with a sleeve of plastic material pretreated with a solvent for itself and said coating material whereby the latter adheres firmly to both the sleeve and conductive film upon removal of said solvent.

3. In a resistor unit of the type comprising an insulation body provided with a relatively thin layer of conductive material and a polystyrol coating in direct contact with said conductive layer; the improvement comprising a protective cover of a polyvinyl plastic material firmly adherent to said coating whereby the coated conductive layer is completely sealed.

4. A method of producing a resistor unit which includes the steps of providing a conducting film on an insulation body, coating the film with solely polystyrol dissolved in xylene, and evaporating the xylene to leave a chemically unchanged polystyrol coating on the film which is less adherent to said film than the film is to said body.

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