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J. J. MUCHER

2,146,509

RESISTANCE

Filed Sept. 2, 1936

Fig. 1

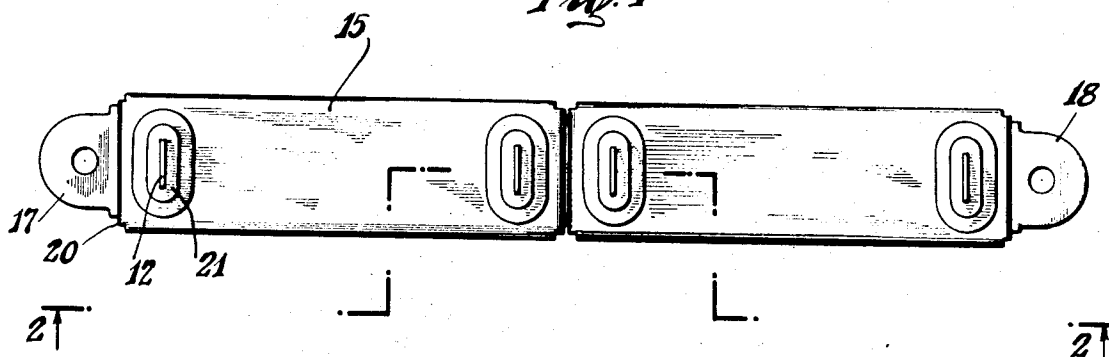


Fig. 2

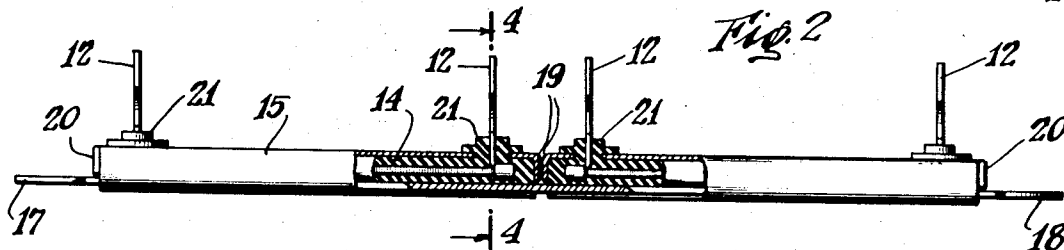


Fig. 3

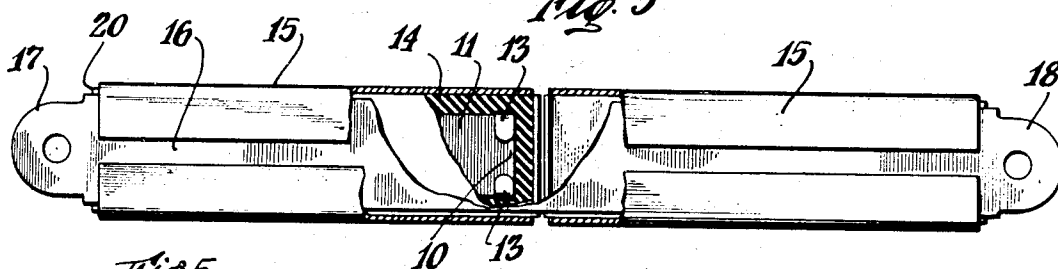


Fig. 5

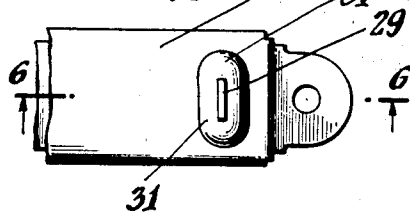


Fig. 7

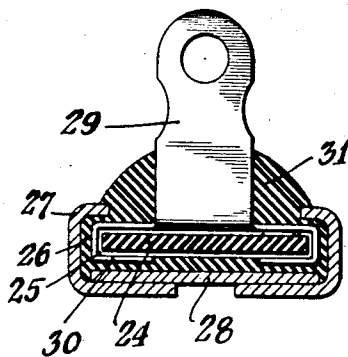


Fig. 4

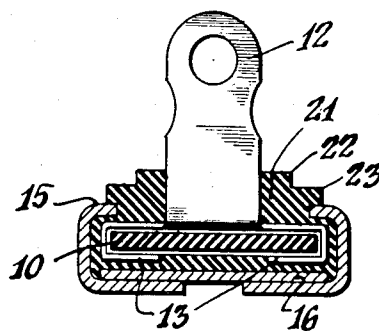
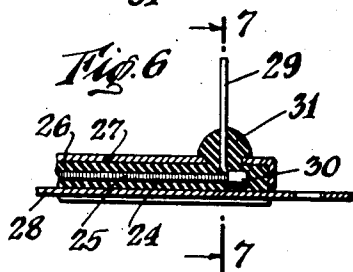


Fig. 6



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RESISTANCE

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3 Claims. (Cl. 201—64)

This invention relates to a molded product or the like, and particularly to an article of this character in which high di-electric values are desirable.

It is an object of the invention to provide a molded product of, for example, the electrical resistance type in which the resistance unit is encased in a moisture-proof container so insulated that little if any leakage within the range of harmful values occurs.

Another object is that of providing a structure by means of which a plurality of units may be mounted in convenient form so as to lend themselves for unitary incorporation in the circuit for which they were designed.

A further object is that of providing a product in which the terminal members are provided with external support for the purpose of giving added rigidity to the same, said supports functioning at the same time as additional insulating factors.

With these and other objects in mind, reference is had to the accompanying sheet of drawings in which:

Fig. 1 represents a plan view of a preferred form of the invention;

Fig. 2 is a side elevation of the unit shown in Fig. 1 partially broken away to show internal construction through the dotted lines 2—2 of Fig. 1;

Fig. 3 is a plan view of the bottom of the unit shown in Fig. 1, again partially broken away to disclose internal construction;

Fig. 4 is an enlarged cross-sectional view taken through the dotted lines 4—4 of Fig. 2, showing a terminal member in position;

Fig. 5 is a fragmentary plan view of another form of unit and which is a modification of the form of unit shown in Fig. 4;

Fig. 6 is a cross-section of the unit shown in Fig. 5 taken along the dotted lines 5—5 of that figure, and

Fig. 7 is an enlarged cross-sectional view of that unit taken through the dotted lines 7—7 of Fig. 6.

Referring now to Figs. 1 through 4, there is shown an electrical resistance of any well known type which, for example, may comprise a central core 10 about which is wound a resistance wire 11 and having spaced terminal members 12 clamped about said resistance wire and core as at 13. If desired, the resistance may take the form of carbon or any other suitable material and the terminals may be of a number and so positioned as to meet the requirements of any particular situation.

Surrounding the resistance and embedding the same is an insulating jacket 14, which may, for example, be formed of one of the phenol resinoid products and which provides a substantially air-proof and moisture-proof outer shell for said resistance. This jacket may, in turn, be itself encased in a metal container such as has been indicated at 15, and which latter container is clamped about a mounting strip 16 provided, for example, with end portions 17 and 18 which are apertured to accommodate mounting screws. As has been shown in Figs. 1 through 4, by using an elongated mounting strip 16 any number of resistance units may be joined together in one continuous length and held in position by the inturnd flange portions of the bodies 15. Likewise, as has been indicated, end portions 19 may, if desired, be struck down from the body 15 to provide additional separation between the parts. In this respect, attention is called to the struck down portions 20 which correspond to the portions 19 and are located at the other end of the units. The provision of a metal armor or protective shell about the insulating material has the desired characteristic of adding strength and protection to the somewhat brittle insulating material, thus preventing an accidental shattering or fragmentation thereof.

Adjacent the points from which the terminal posts 12 project, shell 15 is provided with apertures of materially greater diameter than the terminal posts themselves so that a substantial clearance exists at all points between the shell 15 and terminal post 12. In order to add to the rigidity of said terminal members and to provide additional insulating surfaces therefor, it is preferred that projections 21 be provided adjacent each terminal. These may be formed of the same type of insulating material as forms the body portion 14 and, as has been shown in Fig. 4, may be additionally formed with step or set-off portions 22 23, the latter preferably including right angle edge portions.

By this expedient the insulating surface or area is increased, while at the same time the right angle step portions prevent accumulation of moisture or other undesirable substances which would be accompanied by electric losses. It is to be understood that the insulating projections surrounding the terminal members may be utilized in connection with resistances, the body of which have characteristics other than those heretofore described and that the type of insulating material from which said projections are formed may vary with the discretion of the

user without in the least departing from the scope of the invention as herein set forth.

Turning now to Figs. 5 through 7, there is shown a resistance unit having a core 24 about which is wound resistance wire 25, the latter being, in turn, embedded in an insulating jacket 26 enclosed in a metal shell 27. This shell has been described in the disclosure of Figs. 1 through 4 and is clamped about a mounting strip 28. A terminal member 29 is provided and is secured to the resistance by means of clamping portions 30 and projects through the outer metallic shell 27 through an aperture formed therein. Surrounding said terminal member is an insulating projection 31 which in this instance has a convex outer surface and which may be formed of the same insulating material which comprises the jacket 26 or any other suitable material. The member 31, as will be seen, extends for a substantial distance along the body of said terminal, lending rigidity and support thereto and at the same time increasing the insulating surface available between the outer shell and the terminal.

It will also be appreciated that as shown especially in Figs. 2, 4, 6 and 7, the insulating material surrounding the terminals have base portions preferably of an area larger than the openings through the container or shell. In this manner it is obvious that the structure is not alone further rigidified, but additionally a seal is formed such that the entrance of any foreign matter into the interior of the unit is precluded.

It will be understood, as heretofore noted, that the invention herein described may be practiced by utilizing multiple units, as shown in Figs. 1 through 4, or in individual units. The sole limitation on the number of units to be mounted on one mounting strip is the length of the latter and the relative size of the units employed. Likewise, the multiple mounting of resistances on a single strip may be practiced alone without the use of the insulating projections hereinbefore referred to and as so utilized need not employ any specific insulating material or resistance element.

Thus, among others, the several objects of the invention as aforementioned are achieved. It will be understood that numerous changes in construction and rearrangement of the parts might be resorted to without departing from the spirit of the invention as defined by the claims.

Having thus described the invention, what is

claimed as new and desired to be protected by Letters Patent is:

1. A resistance core, terminals extending therefrom, a metallic container formed with openings of an area substantially larger than said terminals and through which the latter are extended, a mass of insulating material enclosing said core and interposed between the latter and said container, and portions forming a part of and integral with said material mass and extending through the openings of said container and in intimate contact with said terminals to points materially beyond the adjacent face of the container, the bases of such portions being of an area greater than such openings and engaging in sealing contact such adjacent container face.

2. A resistance core, terminals extending therefrom, a metallic container formed with openings of an area substantially larger than said terminals and through which the latter are extended, a mass of insulating material enclosing said core and interposed between the latter and said container, and portions forming a part of and integral with said material mass and extending through the openings of said container and in intimate contact with said terminals to points materially beyond the outer face of the container, the outer face of said portions being convexly and downwardly curved from the face of each terminal to the adjacent face of said container, the bases of such portions being of an area greater than such openings and engaging in sealing contact such adjacent container face.

3. A resistance core, terminals extending therefrom, a metallic container formed with openings of an area substantially larger than said terminals and through which the latter are extended, a mass of insulating material enclosing said core and interposed between the latter and said container, and portions forming a part of and integral with said material mass and extending through the openings of said container and in intimate contact with said terminals to points materially beyond the adjacent face of the container, said extending portion presenting at points beyond said container a series of substantially rectangular steps of increasing area in the direction of said container, the bases of such portions being of an area greater than such openings and engaging in sealing contact such adjacent container face.

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