

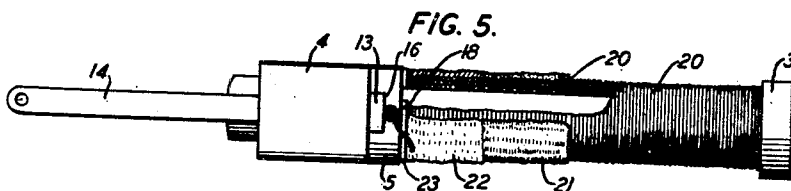
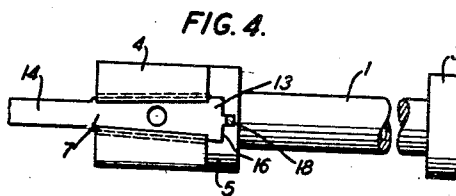
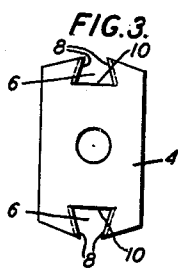
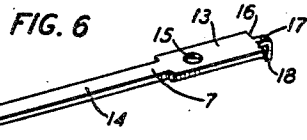
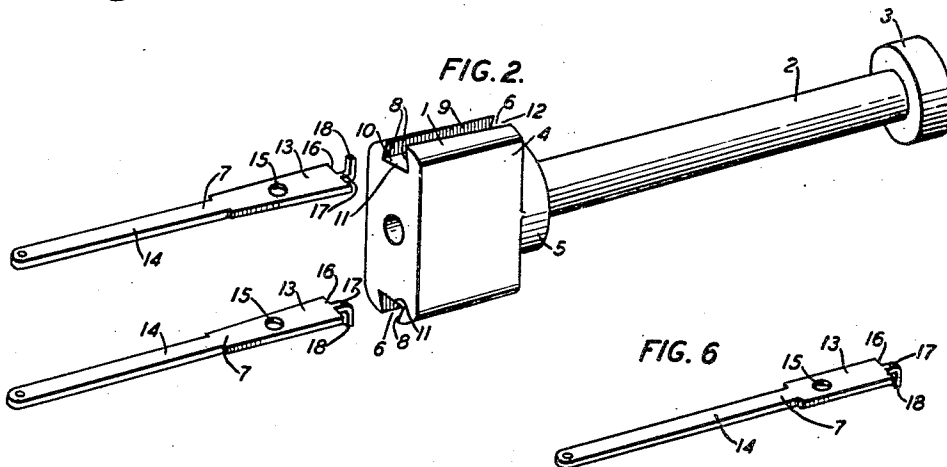
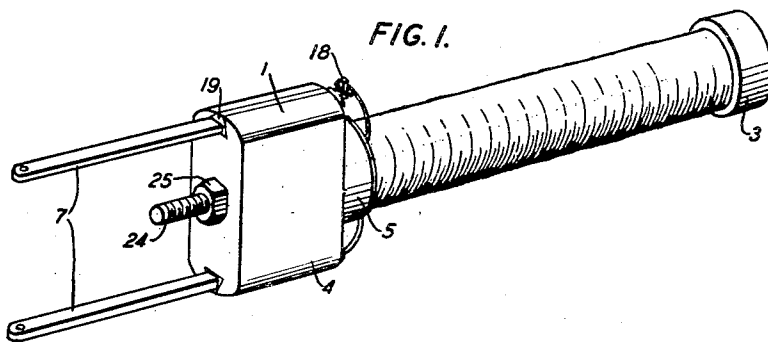
April 9, 1935.

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1,997,198

TERMINAL MOUNTING FOR RESISTANCES

Filed Jan. 31, 1931



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UNITED STATES PATENT OFFICE

1,997,198

TERMINAL MOUNTING FOR RESISTANCES

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Application January 31, 1931, Serial No. 512,573

3 Claims. (Cl. 173—324)

This invention relates to resistance elements and the like and more particularly to a core member for supporting a resistance winding having terminal members securely fastened within a portion of the core member.

An object of this invention is to provide in resistance elements and the like, a core member of insulating material having secured therein a set of terminals which cannot become loose or separated from the core member.

A feature of this invention resides in a block portion integral with the core and in which suitable slots are provided to receive inner end portions of terminal members. Another feature in this invention resides in the employment of terminal members having a configuration conforming to the particular form of slots in the block portion of the core and which are cemented into the slots to prevent loosening of the terminal members or separation from the core. Other features residing in the provision of a stud member in the block portion of the core to secure the resistance unit to a suitable support and the provision of a soluble washer between an end of the wire winding and a flange of the core and which becomes a homogeneous part of the protective serving on the winding are disclosed in this specification.

In the drawing,

Fig. 1 is a view in perspective of a resistance unit having an insulating base member with an enlarged end portion in which are secured a pair of terminals;

Fig. 2 is a view in perspective of an insulating base member and the terminal members separated therefrom;

Fig. 3 is an end elevation of the enlarged end portion of the insulating base member;

Fig. 4 is a top view of the insulating base member and the enclosed portion of a terminal;

Fig. 5 is a top view of Fig. 1 with portions broken away to disclose various portions of the resistance winding and the insulating serving and a washer interposed between one end of the winding and a shoulder of the insulating base member; and

Fig. 6 is a view in perspective of a modification of the terminal shown in Fig. 2.

In resistance units of the type in which a resistance wire element is supported on a suitable insulating base member and terminals are provided for extending the ends of the resistance element to wires leading to other pieces of apparatus, it is desirable that the terminals be so supported on the insulating base member that the possibility of severance of the terminals from

the ends of the resistance wire element and from the insulating base member be reduced to a minimum.

The insulating base members in some instances are made of ceramic material, such as porcelain or Isolantite which in its finished or fired state is not adaptable for the secureance of terminals thereto by means of screws or rivets.

In the present invention terminal members for a resistance winding are secured in an enlarged end portion of an insulating base member without bolts or rivets and are prevented from being accidentally dislodged therefrom and severed from the ends of the resistance winding by reason of the particular cooperating means provided in the base member and terminals as well as by a suitable cement applied to the base member and terminals.

Referring to the drawing, 1 is a base member of insulating material having a comparatively long cylindrical portion 2, an enlarged end 3, an enlarged block end portion 4 and a shoulder portion 5 between the cylindrical portion 2 and the enlarged block end portion 4. This base member 1 may be of ceramic material such as porcelain or Isolantite or in fact any resistance material found adaptable for suitably supporting a wire winding.

In the enlarged block end portion 4 are slots 6—6 to receive terminal members 7—7. The side walls 8 forming each slot 6 converge toward the open side 9 and overhang the base 10. The slots 6—6, preferably, are also tapered longitudinally so that the width of the slot at the outer end 11 is slightly less than the width of the slot at the inner end 12.

The terminals 7 are preferably sheet metal stampings and have an enlarged end 13 and a comparatively long narrow portion 14. The enlarged ends preferably are tapered to conform substantially with the longitudinal taper of the slot 6 in the enlarged block end portion 4 of the insulating base member 1 so that when the terminal 7 is resting in the slot 6 longitudinal withdrawal of the terminal 7 from the slot 6 in one direction is prevented. The enlarged end portions 13 of the terminal are apertured at 15 for a purpose as will be later explained and the inner ends 16 of the terminal 7 are reduced as shown at 17 and provided with angularly disposed lugs 18 to which the ends of a resistance winding may be attached. The width of the enlarged end portion 13 of the terminal 7 at its inner end 16 is slightly less than the width of the base 10 of the larger or inner end 12 of the slot 6 so that when the terminal 7 is placed in the slot 6 sufficient space

is provided between the edge portions of the enlarged end 13 of the terminal and the walls 8 of the slot 6 to allow the passage of cementitious material between the edge portions of the terminal and the walls of the slot.

The depth of the slot 6 in the enlarged block end portion 4 is over twice the thickness of the terminal 7 as shown in Fig. 2 so that when the enlarged end 13 of the terminal is placed in the slot 6 and rests on the base 10 the walls 8-8 which converge toward the open side 9 overhang the enlarged end 13 of the terminal.

The terminals are secured in the enlarged block end portion 4 of the base member 1 as shown in Fig. 1 by cement 19, which is applied over the enlarged end 13 of the terminal and fills the slot 6. When the cement is applied over the enlarged end 13 of the terminal and the slot 6 is filled with this cement, some of the cement is forced downward through the aperture 15 in the terminal and into engagement with the base 10. The width of the enlarged end 13 of the terminal being slightly less than the width of the base 10 of the slot, some of the cement pressed into the slot also passes around the edges of the terminal and into engagement with the side walls 8 and the base 10.

With the terminal cemented into the enlarged block end portion 4 of the insulating base member 1 as shown in Fig. 1, and the slot 6 entirely filled in and some of the cement forced through the aperture 15 and around the outer edges of the terminal and into engagement with the walls 8-8 and the base 10, it is quite obvious that the terminal is securely fastened to the insulating base member 1 and cannot be accidentally dislodged from the insulating base member.

When the cement hardens it cannot fall out of the slot 6 because of the overhanging walls 8-8. The pillar of cement which passes through the aperture 15 and into engagement with the base 10 prevents longitudinal withdrawal of the terminal from the slot in either an inward or outward direction relative to the insulating base member 1. Longitudinal withdrawal of the terminal from the insulating base member 1 in an outward direction is also prevented by the tapering of the slot and the converging of the side walls 8-8 toward the outer end of the enlarged block end portion 4.

On the cylindrical portion 2 of the insulating base member 1 is a winding of wire 20 as shown in Fig. 5 which is wound between the enlarged end 3 and the shoulder 5. The ends of this winding 20 are attached to the angularly disposed lugs 18 of the terminals 7. Over the winding 20 is applied a serving of rayon silk thread 21 and over this silk thread serving is applied a coating of cellulose acetate 22 which partially dissolves and unites with the outer windings of the silk thread 21 becoming a homogeneous part thereof and forming an impervious protective coating over the winding.

Between the inner ends of the windings 20 and 21 and the shoulder 5 of the insulating base member 1 is a cellulose acetate washer 23 which is placed on the cylindrical portion 2 of the insulating base member 1 before the windings 20 and 21 are formed. This cellulose acetate washer 23 is partially dissolved when the cellulose acetate coating 22 is applied, and unites with the

cellulose acetate coating 22 and prevents the entrance of moisture between the inner ends of the windings and the shoulder 5.

Instead of using the tapered terminals shown in Fig. 2 with an enlarged tapered portion 13, terminals of the type shown in Fig. 6 may be employed. In this modification the enlarged end portion 13 is rectangular instead of being tapered and the width of the portion 13 is slightly less than the width of the base 10 of the slot 6. When terminals of this type are used they are cemented into the enlarged block end portion 4 of the insulating base member 1 in the same manner as described for the terminals shown in Fig. 2.

Resistance units and the like of the type above described are often supported on a suitable frame or panel with the spool portion of the unit extending from one face of the support and the terminals extending through the support and outward from the opposite side. To mount the unit on such a support a stud 24 is provided. One end of the stud 24 is embedded or threaded into the enlarged block end portion 4 of the insulating base member 1. The outer end of the stud extends longitudinally of the base member 1 and is adapted to pass through an aperture in the supporting frame or panel and serve in cooperation with a suitable nut 25 as a means for securing the unit to the support.

In the structure described the core member has been assumed to be of ceramic material such as porcelain or Isolantite and the cement with which the terminals are secured to the core member as being a suitable porcelainous cement. The core member may, however, be made of any suitable insulating material and the cement for securing the terminals in the core member may be any suitable cement for the purpose required, without departing from the spirit of this invention.

The invention disclosed is adaptable to units of the type described in which the material used in the core member is such that terminals may not well be secured thereto by bolts or rivets or like fastening means and is only limited to the extent set forth in the following claims.

What is claimed is:

1. A support comprising a core of ceramic material having a terminal block on one end, said block having spaced walls forming undercut slots, electrical terminal members fastened in said slots, and fastening means in said slots for said electrical terminal members.
2. A support comprising a core of ceramic material having a terminal block on one end, said block having spaced walls forming undercut tapered slots, electrical terminal members tapered to conform to said slots, and fastening means in said slots for said electrical terminal members.
3. A support comprising a core and an oblong terminal block, on one end of the core, molded in one piece from ceramic material, said block having spaced walls forming a pair of undercut slots, flat electrical terminal members cemented in the bases of said slots, said flat electrical terminal members having their inner ends projecting inwardly of the core and beyond the inner end of the block and having lugs projecting at right angles to the plane of the terminal members.

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