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R. H. BENTLEY
WIRE TERMINAL MOUNTING

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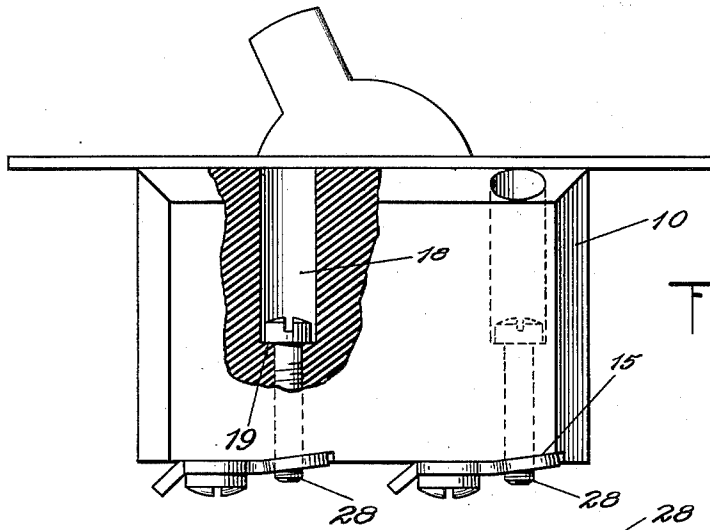


Fig. 1.

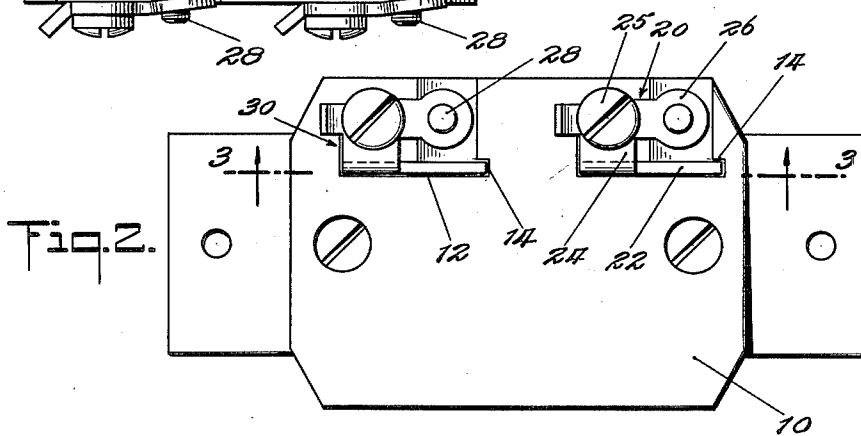


Fig. 2.

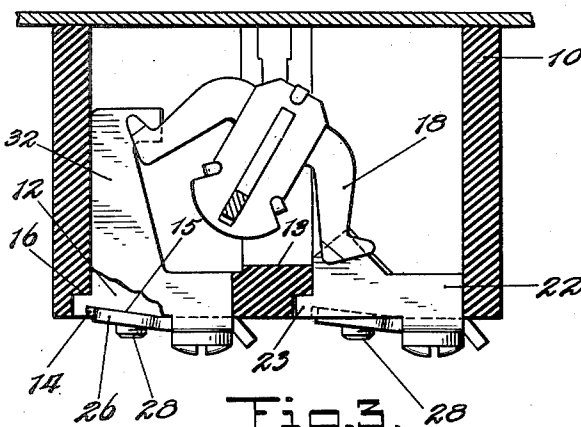


Fig. 3.

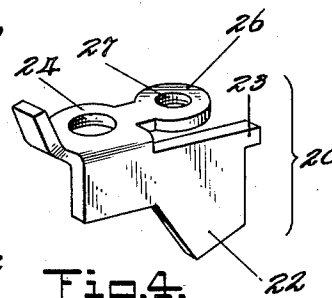


Fig. 4.

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UNITED STATES PATENT OFFICE

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WIRE TERMINAL MOUNTING

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4 Claims. (Cl. 173—324)

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This invention relates to wire terminal mountings for electric switches, sockets, attachment plug receptacles and other electrical devices.

It is an object of the invention to provide a wire terminal mounting which avoids the need for use of wax or cement to hold the securing bolt of the terminal against loosening and thereby to reduce the cost of manufacture of the electrical device without sacrifice of the permanence and firmness of the terminal mounting.

Other objects and advantages will become apparent as the invention is described in the accompanying drawing.

In the drawing—

Figure 1 is a side elevation view, partly broken away, of a switch to which my invention of a wire terminal mounting has been incorporated;

Figure 2 is a bottom plan view of the device illustrated in Figure 1;

Figure 3 is a longitudinal section view taken along line 3—3 of Figure 2;

Figure 4 is a detail view of one of the contact and terminal members embodying features of the invention.

Referring to the drawing, contact and terminal members to which the invention is applied are mounted on a base 10 of porcelain, of molded insulation, or of other insulating material. In the form illustrated, the invention is shown applied to a switch contact and terminal, but it will be understood that it has many other applications. Merely as a few of many possible examples are mentioned receptacle contacts and terminals, socket contacts and terminals, and terminals alone in those and kindred devices.

The base 10 has in its bottom wall or floor, slots 12, having offset recesses 14 at one end forming a ledge 16 of the same width as the slot. Into the slots 12 fit the contact portions of contact and terminal members designated generally by the numerals 20 and 30. Although these members differ in form the invention, as embodied in them, is identical. Like numerals indicate like parts in both members. Member 20 is a stamped sheet metal part having a flat contact portion 22 lying within the slot 12 but having a portion extending above the floor or inner surface 13 of the bottom wall of the base in position to be engaged by a conventional bridging contact 18. A lug or finger 23 is formed at one end of the contact portion in position to lie on the ledge 16.

Bent at right angles to the contact portion, from the outer edge near one end thereof, is a terminal portion 24 which lies against the bottom outside surface of the base. In the terminal

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portion is an internally threaded hole receiving a terminal binding screw 25. Extending from the terminal portion 24, adjacent to but separated from the outer edge of the contact portion, is a leg or extension 26 having a screw threaded aperture 27 therein adapted to receive a securing bolt 28. The shank of the bolt passes through a cylindrical passage 18 in the base. The passage is countersunk to provide a shoulder 19 for the head of the bolt. As initially stamped out and threaded, the leg 26 lies in the same plane as the portion 24 (see Figure 4).

The base 10 is formed with a depressed area or inclined surface 15 molded in the base beneath the leg 26, which is thus in a different plane than the portion of the base under the terminal portion 24.

By reason of the difference in planes of the parts of the base beneath the portions 24 and 26 of the terminal, as the binding screw is screwed tight, it tends to pull down the portion 26; and that portion bends and is permanently deformed from the form of Figure 4 to the forms of Figures 1 and 3 so as to abut the base. The bending takes place at the junction of the leg 26 with the portion 24 by reason of the fact that the area at the junction of the leg with the terminal portion 24 is weaker or of less cross-sectional area than the terminal portion. It is essential that there be such a bendable part or weaker part or else that the leg itself be of soft enough metal to bend. Obviously if the parts are heavy so as to strongly resist bending, the hold of the screw threads of the bolt on the threads of the aperture would be merely increased without any binding effect and without any permanent deformation of the leg to maintain that binding.

The tendency of the pulling down action to cause the whole terminal and contact member to tilt in the same direction as the deformation of the leg 26 is resisted and overcome by the finger 23 engaging upon the ledge 16.

From the foregoing it may be observed that the bending of the leg 26 causes the threads of its aperture to permanently bind against the threads of the securing bolt. Thus, the bolt and terminal member which it secures are permanently held so securely that it is not necessary to wax or cement in the bolt 28 by filling in the passage above the bolt head as has heretofore been necessary to secure underwriters' approval of such devices.

The terminal and contact 30 is identical with the terminal and contact 20, except that the length of the contact portion 32 is greater; and cooperation with base is also like that of contact

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and terminal 20. Hence, detailed description need not be repeated.

Because my novel terminal mounting provides for firm and permanent securement without waxing, there is a considerable saving in wax or cement and in the labor costs necessary to perform the added operations of waxing or cementing. These costs, multiplied when the devices are made by the thousands, can be sufficient to tip the balance from loss to profit.

Variations and modifications in form and in application of the invention to other usages will occur to those skilled in the art. Therefore I do not limit the invention to the form and usage described.

I claim:

1. In combination, a hollow insulating base having a slot therein, a ledge at one end of said slot, a metallic electrical member having a portion passing through said slot and entering the cavity of said base and adapted for engagement by a moving conductive switch part, a finger extending from said first portion and seating upon said ledge, said member having a second portion bent at a right angle to said first portion and lying against the surface of said base, a leg extending from said second portion along said first portion but separate from said first portion, a screw bolt passing through said base and entering a threaded aperture in said leg, said base being formed with the part thereof beneath said leg in a different plane than the part beneath said second portion, whereby said leg is bent to cause binding of said bolt within said screw threaded aperture.

2. In combination, an insulating base, a stamped sheet metal electrical member having a portion lying upon the surface of the base, a leg extending from said portion, said base being

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formed to locate the part thereof under said leg in a different plane than the part of the base on which said first mentioned portion lies, a securing bolt passing through the base and threading into an aperture in said leg and causing said leg to bend toward the base, the axis of said bolt being normal to said leg before the bending of said leg whereby said bending causes binding of said bolt within said screw threaded aperture, said electrical member having a second portion engaging the base at a point spaced from the first-mentioned portion and so located in reference thereto as to support said member at two places during the bending of said leg.

3. The combination claimed in claim 2 in which said second portion lies at right angles to said first mentioned portion, affording resistance to bending of said first-mentioned portion.

4. The combination claimed in claim 3 in which the extending leg is weaker adjacent its junction with said first mentioned portion than said second portion, whereby bending effort exerted by said bolt will cause bending at said weaker point.

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