APPARATUS FOR MOLDING LAMP MOUNTINGS

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This invention relates to an apparatus for forming a lamp mounting.

The conventional lamp mountings for switchboard lamps are usually composed of frames, insulating strips, contact springs and terminals secured together by the aid of screws and with assembling parts, particularly the handling of various parts for assembly, the contact springs and/or terminals become bent, necessitating testing of the lamp assembly prior to the final reassembly.

An object of the invention is to provide a highly efficient apparatus for readily forming a lamp mounting wherein accurate positioning of the various parts of the lamp mounting are assured.

In accordance with the object, the invention comprises an apparatus to mold a lamp mounting, including an initially formed substantially U-shaped conductive element which comprises companion mold members with recesses to jointly form a cavity for the body of the lamp mounting, a gate for the mold members to receive a moldable dielectric material, and a main core receivable in the cavity and determinable by the legs of the conductive element and thereby accurately locate them in the cavity whereby other portions thereof will be embedded in the body of dielectric material.

Other objects and advantages will be apparent from the following description when considered in conjunction with the drawings wherein:

Fig. 1 is a vertical sectional view of the apparatus taken through the partitioning lines of the companion members of the apparatus;

Fig. 2 is a vertical sectional view taken along the line 2-2 of Fig. 3;

Fig. 3 is a side elevational view of the lamp mounting;

Fig. 4 is a longitudinal sectional view of the completed lamp mounting;

Fig. 5 is a sectional view taken along the line 5-5 of Fig. 3; and

Fig. 6 is a top plan view of the apparatus.

Referring now to the drawings, attention is first directed to Figs. 3, 4 and 5, illustrating the lamp mounting. The completed lamp mounting includes a body 10 molded of a dielectric material made hollow through the central portion thereof while one end 11 is formed to receive a switchboard lamp. Aligned apertures 12 are formed in the body intermediate the ends thereof to receive the inner ends 14 of spring contacts which are initially formed as a single resilient element, indicated generally at 15 in Fig. 2, which is substantially U-shaped in general contour. The outer end of the element is bent as shown in Fig. 2 so that when a part of the connecting portion 16 is removed by the aid of a punch or any other suitable means, there will remain inwardly bent ends 17. A laterally extending projection 18, formed integrally with the body 10 must be disposed at either of two positions, one of which is shown in the drawing and the other position being at the left of that shown in Fig. 3, so that the projections of adjacent lamp mountings may overlap or be positioned above and below, if so desired.

The apparatus, by the aid of which the method may be practiced for forming the lamp mounting, is shown in Figs. 1, 2, 3, and includes companion mold members 20 and 21 having substantially like recesses or apertures to form a mold cavity. Only the recesses of the mold member 20 are shown in the drawings, but it should be understood that the description of these recesses and their identifying reference numerals apply also to the recesses of the other member 21. The main recess or cavity 23 extends longitudinally of the mold member 20 to receive the main core 24. The core 24 has an end portion 25 removably disposed in a plug 26, threadedly disposed in a base 27. The base 27 may be supported on its lower surface 28 or either one of the diagonally extending surfaces 29 or 30. A member 32 of the main core forms the lateral portion of the mold to receive a switchboard lamp. The intermediate portion of the main core 24 has diametrically opposed pairs of recesses 34 and 35 to receive respective portions of the legs of the U-shaped conductive element 15 to automatically locate and accurately hold the element in position during molding of the body of insulating material. The upper portion 36 of the main core 24 completes the central cavity of the molded body.

The members 20 and 21 have aligned apertures 38 and 39 to receive core members 40 and 41 which fill the apertures and have recesses 42 and 43 in their outer portions to surround the adjacent portions of the legs of the conductive element 15 in cooperation with the main core 24 in the formation of the apertures 12 in the body 10 of the lamp mounting.

The formation of the projection 18 in the position shown in Figs. 3 and 5, or in the other position referred to in the foregoing description, is under the control of companion cavities 48 in the mold members 20 and 21 and the position of a reversible core 46. It will be noted that the cavity 45 is twice the thickness of the projection 18, half of this area being filled by the projection 47 of the core member 45 and 46 determining the location of the projection 18 of the body 10. The core member 45 is in the position to form the projection 18 at the present position, but if the core member 46 should be reversed, locating the projecting portion 47 thereof of the cavity instead of at the top thereof, the projection 18 would be located at its other position. A pin 50 supported in the threaded plug 26 and extending into recesses 51 of the mold members 20 and 21 and also through an aperture 52 of the projecting portion 47 of the core 46 serves as a core to form the aperture 53 in the projection 18 regardless of the position the projection is formed on the body 10.

The mold members 20 and 21 are provided with recesses 56 and 55, combining to form the gate for the molten material when poured into the mold, the gate serving the main cavity at the bottom of the mold. The mold members 20 and 21 are removably secured together by screws 58 or the like, while the core members 40 and 41 are removably held in the position shown by suitable means such as springs 60 and 61.

Considering now the method by the aid of the apparatus shown in the drawings, the conductive element 15 is located on the main core member 24 with the lower ends of the leg members entering their respective recesses 35 while other portions of the leg members enter the recesses 34 to thereby readily and accurately locate the conductive element for molding in the body 10 of the lamp mounting. The core member 46 is located at the desired position in either one of the mold members 20 and 21, after which these mold members, with the core 46 in position, are located adjacent each other on the base so that the core pin 50 will extend through the aperture 52 of the core member 46. The mold members 20 and 21 may then be secured together and the core members 40 and 41, either at this time or prior to the securing of the mold members 20 and 21, together may be inserted in their respective apertures back of their springs. The core members 40 and 41 will seal their respective portions of the mold against the material to form the apertures 12 in the body of the lamp mounting. To start the molding of the body, the apparatus may be desired, to rest upon the surface 30 while the molten material is poured into the gate and allowed to travel first to the bottom of the cavity and then fill the cavity to complete formation of the body 10. The cavity has solidified or cooled properly, the base 27 may be rotated with respect to the plug 26, moving against the mold members 20 and 21 to remove the main core member 24 together with the core pin 50 from the molded body 10. The cores 40 and 41 may then be removed.
and the mold members 20 and 21 separated for the removal of the molded structure therefrom. The final step of the method for forming the lamp mounting includes the removal of a part of the connecting portion 16 of the conductive element 15 to complete spaced like contact elements and terminals in the molded body of the lamp mounting.

It is to be understood that the above described arrangements are simply illustrative of the application of the principles of the invention. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

1. An apparatus for molding a lamp mounting including an initially formed substantially U-shaped conductive element, the apparatus comprising companion mold members with recesses to jointly form a cavity, a gate for the mold members to receive a moldable dielectric material and direct it into the cavity, a main core receivable in the cavity and recessed to receive the ends of the legs of the conductive element and intermediate portions of the legs of the conductive element and thereby accurately locate the legs of the conductive element in the cavity to cause portions thereof to be embedded in the body of dielectric material, and auxiliary cores to extend into the cavity and cooperate with the main core to surround portions of the legs including the said ends and intermediate portions to form apertures in the body of dielectric material for lengths including the ends of the legs of the conductive element.

2. An apparatus for molding a lamp mounting including an initially formed substantially U-shaped conductive element, the apparatus comprising companion mold members with recesses to jointly form a cavity, a gate for the mold members to receive a moldable dielectric material and direct it into the cavity, a main core receivable in the cavity and recessed to receive portions of the legs of the conductive element and thereby accurately locate the legs of the conductive element in the cavity to cause portions thereof to be embedded in the body of dielectric material, a threaded plug connected to the outer end of the main core, and a base threadedly apertured to receive the plug to normally locate the core in the cavity and to cause longitudinal movement of the core from the cavity and the molded body while being held against rotation relative thereto upon rotation of the base relative to the plug and the mold members.

3. An apparatus for molding a lamp mounting including an initially formed substantially U-shaped conductive element, the apparatus comprising companion mold members with recesses to jointly form a cavity, a gate for the mold members to receive a moldable dielectric material and direct it into the cavity, a main core receivable in the cavity and recessed to receive portions of the legs of the conductive element and thereby accurately locate the legs of the conductive element in the cavity to cause portions thereof to be embedded in the body of dielectric material, and inserts adapted to be disposed in portions of the recesses of the mold members at different positions to cause formation of a projection at selected varied positions on the body of dielectric material.

4. An apparatus for molding a lamp mounting including an initially formed substantially U-shaped conductive element, the apparatus comprising companion mold members with recesses to jointly form a cavity, a gate for the mold members to receive a moldable dielectric material and direct it into the cavity, a main core receivable in the cavity and recessed to receive portions of the legs of the conductive element and thereby accurately locate the legs of the conductive element in the cavity to cause portions thereof to be embedded in the body of dielectric material, a threaded plug connected to the outer end of the main core, and a base threadedly apertured to receive the plug to normally locate the core in the cavity and to cause longitudinal movement of the core from the cavity and the molded body while being held against rotation relative thereto upon rotation of the base relative to the plug and the mold members, and surfaces for the base disposed at given angles with respect to each other to support the mold members and core at any selected one of different positions during pouring of the material through the gate.

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