Nov. 30, 1937. E. C. SMALLY 2,100,985

MOLDING APPARATUS

Filed Oct. 19, 1935

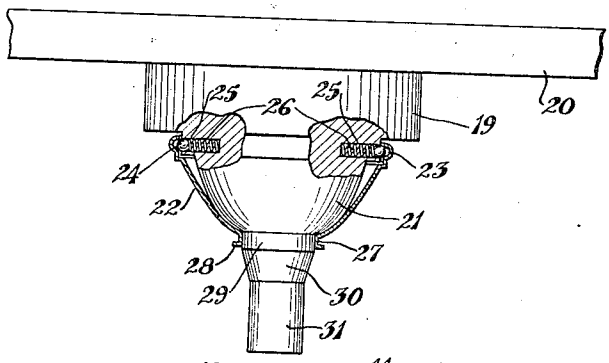
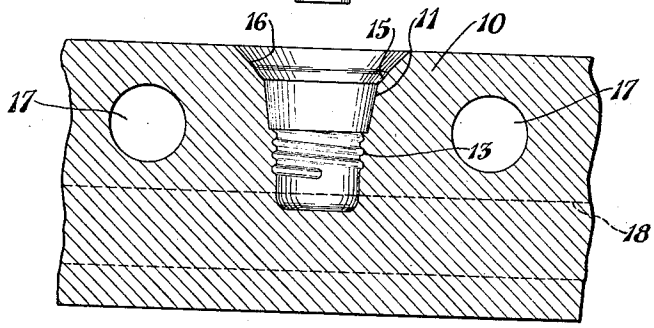


Fig. 1



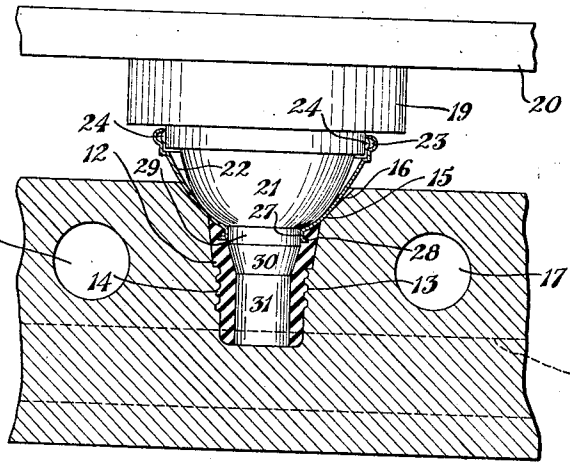


Fig. 2

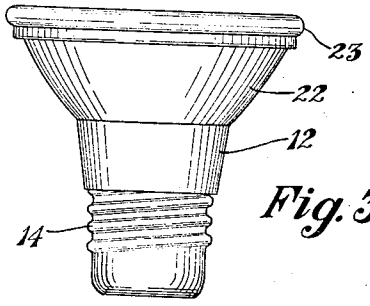


Fig. 3

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MOLDING APPARATUS

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2 Claims. (Cl. 18—34)

The invention relates to the molding of an insulation base with a metallic member such as a reflector attached thereto for adapting a small base incandescent lamp bulb to a standard lamp socket or receptacle. Devices of this kind are disclosed in my prior patent for Incandescent lamp, Reissue No. 18,974, granted October 24, 1933 and my copending application for Adapters for incandescent bulbs, Serial No. 37,171, filed August 21, 1935.

In the molding of devices of this kind it is necessary that the sheet metal member be rigidly held in place while the Bakelite or other insulation material forming the insulation base is molded, and considerable difficulty has been experienced in this operation as the sheet metal member, which is usually formed of light gauge aluminum or the like, becomes distorted and marred when clamped between the two parts of the mold.

The object of the present invention is to provide means for properly holding the sheet metal reflector or the like rigidly in place as the Bakelite base is molded without distorting or marring the reflector.

Another object is to provide means for molding devices of this character comprising a two-part mold, one member having a cavity therein shaped to conform to the exterior contour of the insulation base to be formed therein, the other member comprising a plunger adapted to produce the desired interior conformation of the insulation base, the two members being so shaped that the sheet metal reflector will be clamped therebetween only at a single line contact, whereby the reflector will be rigidly held in proper position to have a portion thereof imbedded in the insulation base as the same is molded, and obviating the danger of distorting or marring the reflector.

The above objects, together with others which will be apparent from the drawing and following description, or which may be later referred to, may be attained by constructing and operating the molding apparatus in the manner illustrated in the accompanying drawing, in which

Figure 1 is a vertical sectional view showing the two members of the mold in open position with a sheet metal reflector positioned upon the plunger member;

Fig. 2 is a similar view showing the members of the mold in closed position with the sheet metal reflector imbedded in the insulation base; and

Fig. 3, a side elevation of the molded base with reflector as formed by the improved apparatus and method.

Similar numerals refer to similar parts throughout the drawing.

The lower or receiving member of the mold comprises a metal block 10 having a cavity 11 therein of suitable size and shape to produce the exterior conformation of the insulation base 12 to be formed therein. This cavity 11 is slightly tapered to produce the tapered base 12 and is provided with the screw threaded portion 13 to form the screw threads 14 upon the exterior of the insulation base.

The upper end of the cavity 11 is surrounded by the substantially narrow flared portion 15 providing the only point at which contact is made with the reflector, as will be later described, the opening then terminating in the outwardly flared portion 16 which is located at such an angle as to provide a clearance around the sheet metal reflector.

The block 10 may be provided with passages 17 and 18 extending therethrough in different directions for passing steam through the block as is customary in the molding of Bakelite articles.

The upper or plunger member indicated generally at 19 may be carried upon a crosshead 20 mounted in a press and adapted for vertical movement relative to the lower member 10 and having the ball portion 21 adapted to receive the sheet metal reflector 22 which is of substantially cup shape and may be provided with a rim groove 23 by means of which the reflector may be frictionally retained upon the plunger member as by the spring pressed balls 24 located in transverse bores 25 and normally urged outward as by the coil springs 26.

The reflector has the depending flange 27 at its lower end terminating in the outturned annular flange 28 adapted to be imbedded in the insulation base. The plunger portion of the die depends from the ball portion 21 and comprises the short cylindric portion 29 having a sliding fit within the flange 27 of the reflector. Below the portion 29 is the downwardly tapered portion 30 terminating in the depending cylindric portion 31, the plunger thus being shaped to produce the desired interior contour in the insulation base.

In operating the apparatus to produce the article as illustrated in Fig. 3, with the mold members separated as shown in Fig. 1, the sheet metal reflector is placed over the ball portion of the plunger member and frictionally held thereon as above described and as illustrated in Fig. 1.

Assuming the insulation base is to be formed of Bakelite, the proper amount of the powdered material is placed in the cavity of the lower member as in ordinary practice, and the plunger member is then pressed down into the cavity member as shown in Fig. 2 and steam is passed through the passages 17 and 18 of the lower member, fusing the powdered material and forming a Bakelite base 12 as shown in Fig. 2, with the flange 28 of the reflector imbedded therein.

As shown in Fig. 2, it will be seen that the only point where the sheet metal reflector is clamped between the plunger member and the lower member is the line contact at 15. While this is sufficient to properly hold the reflector rigidly in position during the molding process, is has been found by experience that it does not in any way distort or mar the thin sheet metal reflector. The relieved flared portion 16 of the opening in the cavity member permits any excess Bakelite material to pass out around the exterior of the reflector so that the Bakelite base may be properly formed.

In completing the device for use as a reflector adaptor, the usual sheet metal base shell may be attached to the exterior of the insulation base 12 and the usual sheet metal socket shell inserted into the base and electrically connected to the base shell, whereby the base may be inserted into a lamp socket or receptacle of usual construction and a small base lamp bulb may be inserted in the base.

I claim:

1. Apparatus for forming an insulation base with a sheet metal member having a portion imbedded in said base, comprising a cavity mold member having a cavity therein shaped to form the exterior of the insulation base, a plunger mold member shaped to form the interior of the insulation base, means upon the plunger mold member for attaching the sheet metal member, and means upon said mold members for clamping the sheet metal member therebetween at a single line contact only.

2. Apparatus for forming an insulation base with a hollow member having a portion imbedded in said base and an outwardly flared portion extending beyond the base, comprising a cavity mold member having a cavity therein shaped to form the exterior of the insulation base, a plunger mold member shaped to form the interior of the insulation base, and means upon said mold members for clamping said outwardly flared portion therebetween at a single line contact only.

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