Dec. 15, 1936. R. B. THOMAS 2,064,364

LAMP, TUBE, AND SIMILAR DEVICE

Original Filed June 21, 1934

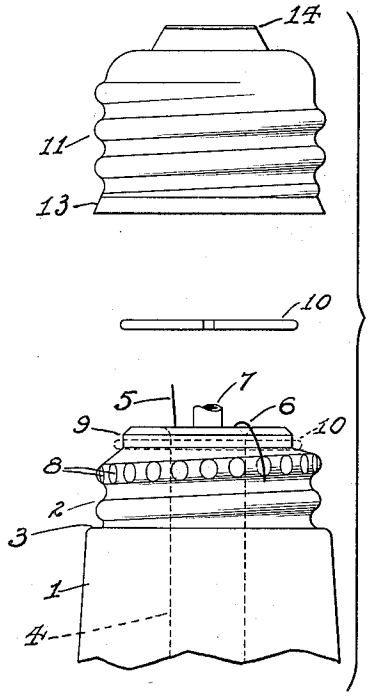


Fig. 1.

Fig. 3.

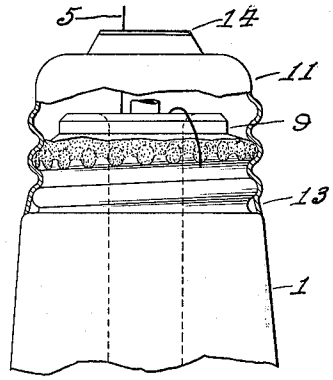
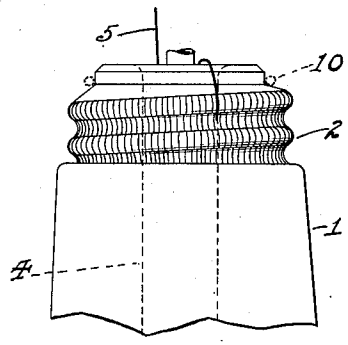


Fig. 4.



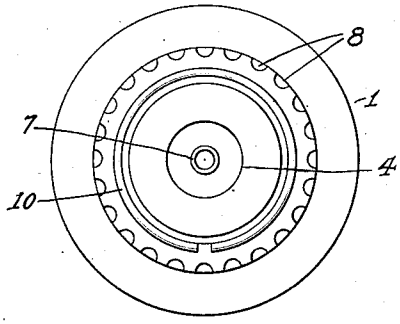


Fig. 2.

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LAMP, TUBE, AND SIMILAR DEVICE

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Original application June 21, 1934, Serial No. 731,581. Divided and this application December 20, 1934, Serial No. 758,349

2 Claims. (Cl. 176—32)

This invention relates to lamps, tubes and similar devices, and more particularly to improvements in methods and means for basing such devices.

An object of the invention is to provide an improved form of cementless based lamp or tube.

Another object is to provide an improved manner of mechanically bonding a contact base to a vitreous body such as a lamp bulb or the like.

A feature of the invention relates to a cementless based lamp or tube, wherein means are provided to increase the resistance to relative turning between the lamp bulb and the base.

Another feature relates to improved means for interlocking a contact base with a lamp bulb or the like.

Another feature relates to a cementless based lamp or tube having means for equally distributing torsional strains around the periphery of the contacting areas between the base and lamp bulb.

A further feature relates to the novel organization, arrangement and relative location of parts which go to make up a cementless based lamp which is efficient in use and economical of manufacture.

Other features and advantages not specifically enumerated will be apparent after a consideration of the following detailed descriptions and the appended claims.

While the invention will be disclosed herein as embodied in specific forms, it will be understood that this is done merely for purposes of illustration and not by way of limitation.

In the drawing Fig. 1 is an exploded view of a portion of a bulb based according to the invention.

Fig. 2 is a top plan view of the bulb of Fig. 1 prior to the application of the base thereto.

Fig. 3 is an assembled partial sectional view of the bulb with the base attached.

Fig. 4 is a view showing a modification of the bulb of Fig. 1.

Inasmuch as the invention is primarily concerned with methods and means for applying a contacting base to lamps, tubes or similar devices, only those portions of the device that are necessary to an understanding of the invention are shown, and the corresponding parts throughout the several figures of the drawing are designated by the same numerals.

Referring to Figs. 1 to 3, the numeral 1 indicates the neck portion of a lamp, tube or similar device, the bulb portion of which may be of any conventional or known shape. The neck portion 1 terminates in a butt portion 2 of uniform-diameter which is provided with a suitable threaded surface, preferably similar to the thread usually employed in ordinary incandescent lamp bases. While any wellknown method of threading may be employed, it is preferred to form this thread by a molding operation. Preferably at the time the thread is molded into the butt portion 2, the neck 1 is also formed with a uniform annular shoulder 3. Sealed to the portion 2 is a reentrant stem 4 which may terminate in a press (not shown) wherein are sealed the various lead-in wires 5, 6. For the purpose of evacuating the device and for communicating with the interior of the bulb, there is provided the usual exhaust tubulation 7. By means of this tubulation air under pressure may be forced into the bulb at the same time that the parts 1 and 2 are being heated to seal the stem to the bulb, and preferably a suitable mold is provided so that parts 1 and 2 when they become molten are blown to provide the shoulder 3 and the threads in the portion 2. The mold is also designed to form one or more of the threads of portion 2 with a plurality of notches 8, and while the drawing shows these notches as elliptical any other shape notch may be employed. Furthermore while the drawing shows the notches in the convex portions of the thread, if desired similar notches may be formed in the concave thread portion. At the area where the reentrant stem joins the molded thread portion, there is provided a circular shoulder 9 adapted to receive a ring 10 of solder or other easily fusible metal. When the solder ring has been positioned as shown in Figs. 1 and 2, the lead-in wire 6 is bent back upon itself, preferably with its free end lying in one of the notches 8.

The usual threaded metal shell 11 is then threaded on to the molded base and the flare 13 engages the flat uniform shoulder 3 thus insuring the proper centering of the base and bulb, meanwhile the other lead-in wire 5 is brought out through the metal button 14 and soldered thereto in the usual manner. When the threaded metal shell has been assembled, the assembly is heated in any suitable manner to a predetermined temperature at which the ring 10 melts and runs into the notches 8 as indicated by the stippled area of Fig. 3. The molten metal when it hardens therefore provides an integral bond to the metal shell and also provides a good electrical contact between the wire 6 and said shell. In effect therefore the notches 8 form keyways, and the solder when hardened forms cooperating keys which are integrally bonded to the metal shell 11. If desired the inner surface of shell 11 may be previously tinned to facilitate the soldering thereto.

Preferably, the notches 8 are so formed and disposed with relation to shoulder 9 and ring 10 as to allow the molten solder to flow easily into said notches, but further downward flow of the molten solder is prevented by the thread of the metal shell.

Instead of molding the threads of butt 2 with individual notches as in Figs. 1, 2 and 3, the threads may be roughened or provided with a multiplicity of channels or furrows preferably, although not necessarily, extending parallel to the vertical axis of the device. Thus as shown in Fig. 4 the threads of butt 2 are molded with a roughened or furrowed surface. This roughened surface may be obtained by employing a mold which has its surface for forming the butt threads, knurled, fine milled, sandblasted, pinch pricked etc., it being understood of course that if desired a smooth surface mold may be employed and the surface of the butt threads may be roughened subsequently by any wellknown process. The manner of basing the device of Fig. 4 is substantially the same as that described for Figs. 1, 2 and 3, namely by employing a ring 10 of solder or other fusible metal which is seated on the rim 9 prior to assembly of the metal shell base. Heat is then applied to melt the solder ring which flows downwardly to fill the furrows or pits in the threaded butt 2.

Various changes and modification may be made herein without departing from the spirit and scope of the invention.

This application is a division of Patent No. 2,028,884, issued January 28, 1936.

What I claim is:

1. In a lamp or tube the combination of an enclosing envelope having a bulb portion and an externally threaded butt portion, a plurality of grooves around the periphery of at least one thread in said butt portion, a fusible metal ring surrounding said butt portion, and a threaded metal shell screwed on to said butt portion and integrally bonded thereto by said fusible metal.

2. In combination an envelope terminating in a vitreous threaded base, a groove extending transversely of the base thread to receive a lead-in wire, a plurality of depressions in the peripheral convex face of at least one thread in said base, a threaded metal shell screwed on to said base, and a ring of fusible metal between said shell and base, the said ring having projections registering with said depressions, said ring being conductively bonded to said shell.

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