

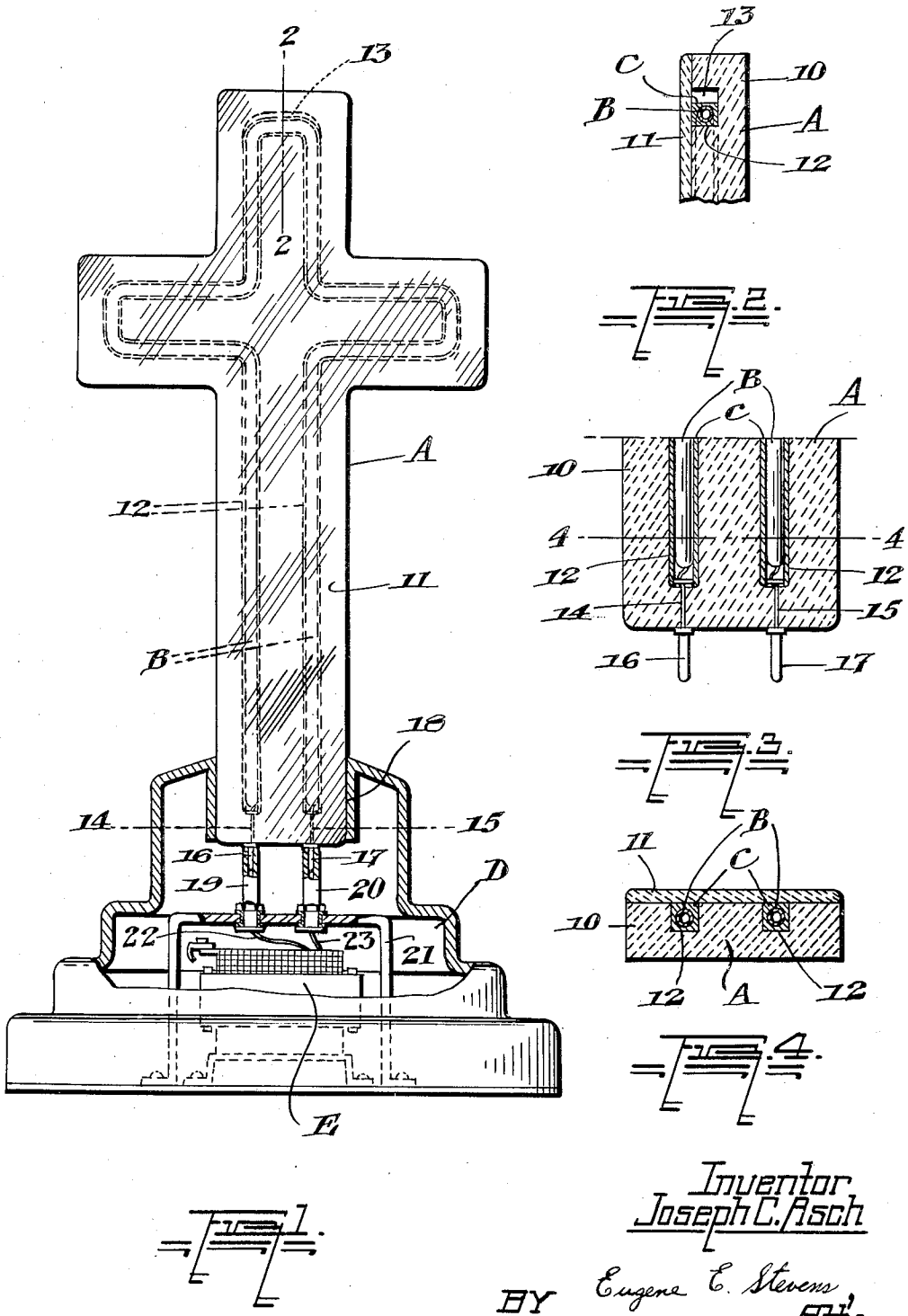
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LIGHTING DEVICE

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LIGHTING DEVICE

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5 Claims. (Cl. 176-14)

This invention relates to improvements in lighting devices of the type in which the light source is in the form of a luminous tube generally shaped and arranged to form a design or legible sign. Tubes of this character, such as neon tubes, are readily frangible, and in smaller sizes present the light source in too concentrated a form.

The objects of the present invention are to provide an improved device of this character having better protection of the light source coupled with convenient means for effecting any desired diffusion thereof. Further objects are generally to improve and simplify a device of this kind and to better adapt it to perform the functions required of it.

The invention consists of a casing member, preferably formed from hard translucent plastic material, having an interior channel or conduit for the luminescent tube and a filling of soft translucent plastic material for the channel or conduit, provision being made for the expansion of the soft plastic material as hereinafter more fully set forth and described in the accompanying specification and drawing.

In the drawing—

Figure 1 is a sectional elevation of one form in which the invention may be embodied.

Figure 2 is an enlarged sectional detail on the line 2-2 of Figure 1.

Figure 3 is a detail showing a sectional elevation of the terminals of the luminescent tube.

Figure 4 is a section on the line 4-4 of Figure 3.

In the drawing like characters of reference indicate corresponding parts in all the figures.

Referring to the drawing, A indicates the casing member formed of translucent material, preferably from a hard plastic material such as phenol formaldehyde, cellulose acetate or vinyl acetate. It may be formed from any other convenient hard translucent material. Plastics of the character mentioned have the advantage that they may be molded in form and have any desired translucency imparted to them.

The casing member may be of any convenient shape or design to suit the purposes for which the illuminating device is required. As shown it is in the form of a cross, such as might be used as an altar ornament, but it might equally well be in the form of a letter.

The casing member is conveniently formed in two parts, a body 10 and a cover 11, held together when assembled by any convenient form of cement. The face of the body 10 adjacent to the

cover is formed with a channel or conduit 12 of sufficient depth and width to receive a luminescent tube B, such as a neon tube, the diameter of which is substantially less than either the width or depth of the channel and the space between which and the channel is occupied by a semi-plastic translucent filling material C of a character adapted to soften when heated, provision being made for the expansion of this material in the channel. The relative sizes are such that the semi-plastic material is designed to completely surround and cushion the luminescent tube B, and in the form illustrated a space 13 is provided at the upper end of the channel in which the semi-plastic material may expand.

A desirable material for the semi-plastic material is a polymerized vinyl acetate having a suitable degree of viscosity. The viscosity of this compound depends on the degree of polymerization and may be determined by dissolving the compound in benzene and making it up so that at 20° C. one litre contains the simple molecular weight in grammes. This is filtered into the apparatus through cotton wool, means being taken to avoid loss of solvent. The time of outflow is then determined by the Ostwald viscosimeter, which has been standardized on a pure solvent (benzene), of which the absolute viscosity is known in centipoises. A desirable viscosity on the final compound used for the present invention is 2.5. In some instances a small quantity of a plasticizer such as dibutyl phthalate may be used.

The electrical terminals 14 and 15 for the neon tube are led through the end of the casing and conveniently connected to contact pins 16 and 17 which will permit the luminescent device to be readily held in and removed from a convenient base or other support. I have shown a hollow base D which may be, for instance, of metal having a socket 18 to receive the end of the casing member and having mounted within it sockets 19 and 20 to receive the pins 16 and 17, these sockets being conveniently supported on a bracket 21 connected to the base member and within which may be supported the usual transformer E by which the ordinary current supply may be transformed to a suitable voltage for the neon tube, the terminals of the transformer having suitable current supply and the high voltage side of the transformer being connected by conductors 22 and 23 to the connecting contacts of the sockets 19 and 20, which may be of any convenient form.

It will be seen that the semi-plastic translucent material forms an effective cushion for the

frangible neon tube B which will protect it from injury during transit and from accidental jars when in use. It will also provide for the expansion of the glass in the tube when it is heated during operation and will not tend to fracture either the tube itself or the outer casing by reason of the provision for expansion of the plastic material.

Various modifications may be made in the invention without departing from the spirit thereof or the scope of the claims, and therefore the exact forms shown are to be taken as illustrative only and not in a limiting sense, and I desire that only such limitations shall be placed thereon as are imposed by the prior art or are specifically set forth in the appended claims.

What I claim as my invention is:

1. A device of the character described comprising a casing of hard, translucent material having a channel therein, a lighting tube in the channel, and a filling of semi-plastic material between the tube and the channel, provision being made for expansion of the semi-plastic material.

2. A device of the character described comprising a casing of mouldable plastic material having a channel therein, a lighting tube in the chan-

nel, and a filling of semi-plastic material between the tube and the channel, provision being made for expansion of the semi-plastic material.

3. A device of the character described comprising a casing of hard, translucent material having a channel therein, a lighting tube in the channel, and a filling of polymerized vinyl acetate between the tube and the channel, provision being made for expansion of the polymerized vinyl acetate.

4. A device of the character described comprising a casing formed with a body portion with a channel therein, and a separable cover forming one side of the channel, a light tube in the channel and a filling of semi-plastic material between the tube and the channel, provision being made for expansion of said semi-plastic material.

5. A device of the character described comprising a body portion of translucent material having a channel therein, a cover for the channel, a light tube in the channel of less diameter than the latter, a filling of semi-plastic material in the channel surrounding and cushioning the tube, provision being made for the expansion of said semi-plastic material in the channel and terminals for the tube extending through the body.

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