May 4, 1954 F. W. MOORE 2,677,755

WATERPROOF ELECTRIC LAMP SHIELD

Filed June 5, 1952

Fig. 1.

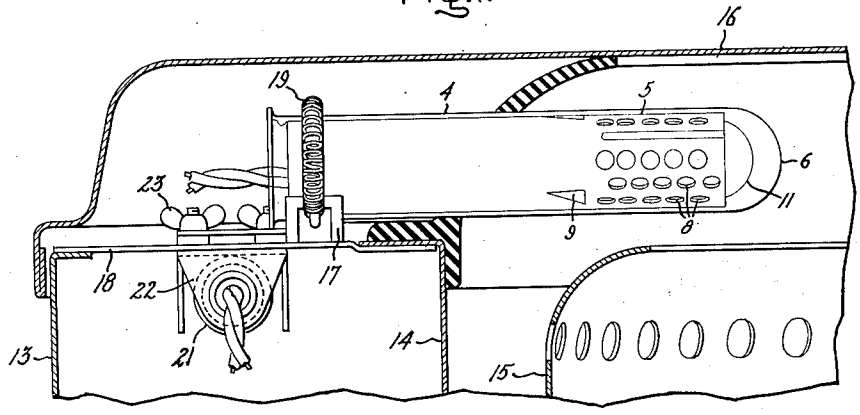


Fig. 2.

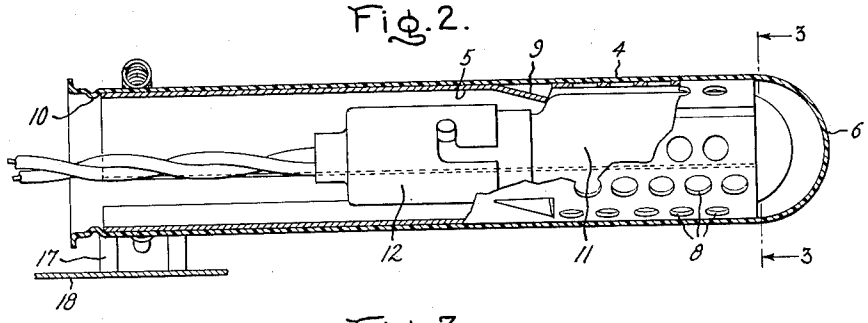
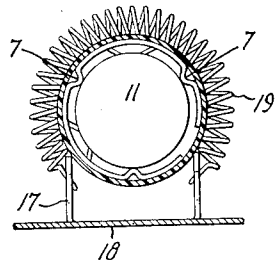


Fig. 3.



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WATERPROOF ELECTRIC LAMP SHIELD

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1 Claim. (Cl. 240—102)

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For certain applications, such as in clothes washing machines for example, it is desirable to provide an electric lamp for illuminating purposes having a relatively long tubular shield which is water proof, light in weight, transparent, and non-breakable and which will withstand the heat generated by the lamp bulb. In an application such as in a washing machine the lamp must be located well inside the washing machine outer casing if it is to illuminate efficiently the area desired to be illuminated which means that the shield must be relatively long with the lamp bulb at its inner end.

The primary object of my invention is to provide an improved shield which meets such requirements in a satisfactory manner.

According to my invention I provide a lamp shield comprising an elongated plastic tube closed at its inner end and open at its outer end and within which is a liner formed from metal having relatively high heat conductivity, the liner being provided at its inner end with projections for supporting a lamp bulb and with openings for the transmission of light.

In the drawing Fig. 1 shows a side elevation of my improved shield, the same being shown assembled in a washing machine; Fig. 2 is a longitudinal sectional view of the shield showing a lamp bulb positioned therein, and Fig. 3 is a sectional view taken on line 3—3, Fig. 2 looking in the direction of the arrows.

Referring to the drawing, the shield comprises a tube 4 and a liner 5. Tube 4 is formed from a suitable light weight, water proof, transparent plastic material such as nylon, for example. It is closed at its inner end 6, is open at its outer end and is relatively long as compared to its diameter. Liner 5 is formed from a suitable metal such as aluminum or copper which has relatively high heat conductivity. It extends from a region adjacent to the closed end of tube 4 to a point adjacent to the open end of tube 4 and contacts closely the inner surface of the tube. At its inner end tube 5 is provided with longitudinally extending inwardly projecting ribs 7 for centering a lamp bulb in the shield and with openings 8 for transmission of light. Also it may be provided with struck in tongues 9 for engaging the shoulder at the base of an electric lamp bulb for holding a bulb in the shield. Preferably the liner is in the form of a split tube as shown in Fig. 3 so that it may be squeezed down in diameter for insertion into the tube after which it will spring out into engagement with the inner surface of the tube. And the tube may be provided with a bead 10 for holding the liner in the tube.

In Figs. 2 and 3, 11 indicates a lamp bulb positioned in the shield, it being centered by ribs 7 and held in the shield by tongues 9. The lamp

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bulb socket is indicated at 12. In assembling the structure, lamp bulb 11 may be first attached to socket 12 after which they may be inserted into liner 5 through its open inner end. Then the liner with the socket and bulb therein may be positioned in tube 4.

In Fig. 1 my invention is shown as being utilized in an automatic clothes washing machine, this being one use for my invention to which it is especially well adapted. In Fig. 1, 13 indicates the outer casing, 14 the tub, 15 the spin basket and 16 the cover of an automatic clothes washing machine of known construction. The shield with the lamp bulb therein is supported on a suitable bracket 17 supported on a plate 18 fixed to the washing machine casing, the shield being held on the bracket by a suitable coiled spring ring 19 as shown particularly in Fig. 3. Plate 18 may support also a second lamp bulb 21 carried by a second bracket 22 attached to the plate by suitable bolts held by wing nuts 23.

The heat of lamp bulb 11 is localized at the inner or closed end of the shield. However the liner by reason of its high heat conductivity as compared to the plastic of the tube serves to absorb heat and transmit it away from such inner or closed end and distribute it throughout the length of the shield from which it is dissipated. This prevents the plastic at the closed end of the shield, which plastic is a poor conductor of heat as compared to aluminum for example, from being overheated, which may cause it to become blackened or even burned through.

What I claim as new and desire to secure by Letters Patent of the United States is:

A waterproof and unbreakable shield for an electric lamp bulb comprising an elongated tube of transparent thermoplastic material having a closed end and an open end, and a tubular liner in the tube formed from a metal having relatively high heat conductivity which extends from a region adjacent to said closed end of the tube to a region adjacent to said open end of the tube, said liner being in contact with the inner surface of the tube and being provided adjacent said tube closed end with inwardly eltending projections for supporting a lamp bulb in spaced relation to the inner wall of the liner and with a plurality of relatively small openings for transmission of light.

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