July 29, 1941. C. G. BORDEAUX 2,250,621

REFLECTOR ELEMENT AND MOUNTING THEREFOR

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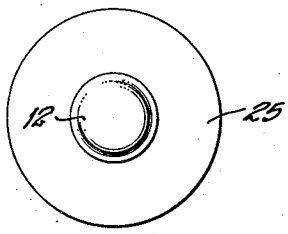


FIG. 3

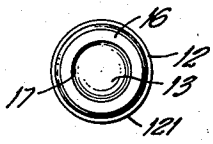


FIG. 4

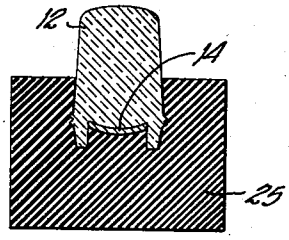


FIG. 2

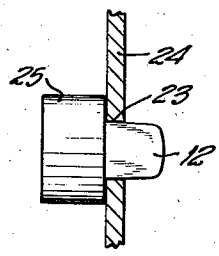


FIG. 5

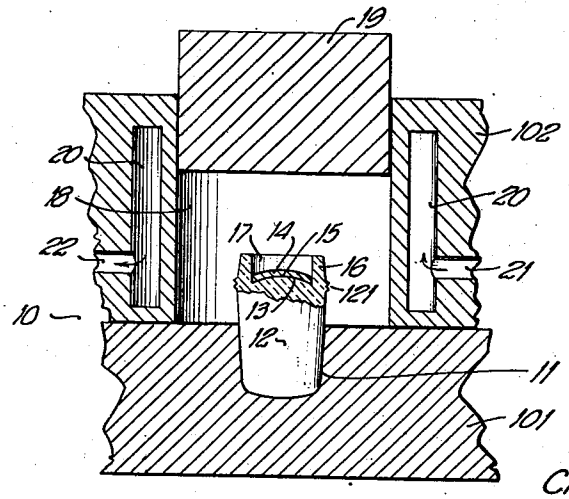


FIG. 1

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REFLECTOR ELEMENT AND MOUNTING THEREFOR

Claude G. Bordeaux, Hoosick Falls, N. Y.

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3 Claims. (Cl. 88—82)

My invention more particularly relates to an improvement in reflecting buttons and the supports therefor of the general type that are commonly installed by the side of a highway and which reflect the light emitted from the headlights of an automobile. Such buttons or signals are used at dangerous points in the highway as a signal to drivers and for other purposes. Buttons of this character which properly reflect the light are known. In practice, however, the reflecting surfaces of such devices have not been properly sealed against the action of the atmosphere with the result that the reflecting surfaces have become tarnished in use with a resulting loss of reflectivity which eventually becomes so pronounced that the button is of no further use and must be discarded.

In accordance with my invention the reflecting surface of the reflector is sealed against the atmosphere and may be used for an indefinite period of time without loss of efficiency.

One of the objects of my invention, therefore, is a reflecting button and a mounting therefor in which the reflecting surface is permanently sealed against the atmosphere.

Another object of my invention is a combined reflecting button and mounting therefor in which the reflecting surface of the reflector is readily and permanently focused with respect to the lens at the front end of the glass body forming the reflecting element.

A still further object of my invention is a device of the foregoing character which is cheap, easily manufactured and which permanently retains its characteristics throughout the life of the element.

My invention will best be understood by reference to the accompanying drawing in which I have illustrated a preferred embodiment thereof and in which—

Fig. 1 is a sectional view through a two part mold with the glass button in position in the mold and ready for a charge of the heat curing plastic material which is to form the mounting for the reflecting button;

Fig. 2 is a sectional view through a reflecting button and the mounting therefor embodying my invention;

Fig. 3 is a plan view of Fig. 2;

Fig. 4 is a plan view of the reflecting button, and

Fig. 5 is a sectional view illustrating the reflecting element embodying my invention mounted in a support.

Like reference characters indicate like parts throughout the drawing.

Referring to the drawing, and first to Fig. 1, 10 indicates generally a mold comprising a lower section 101 and an upper section 102. It will be understood that the two sections of the mold are aligned by suitable dowel pins (not illustrated) in a well known manner. The lower section of the mold is provided with a concave recess 11 in which is received one end of an elongated reflecting button 12 formed of glass or the like. The reflecting button is gradually tapered outwardly from the end which is received in the recess to what is at this time the upper exposed end of the reflecting button. The opposite end of the reflecting button, which is at this time freely exposed, is provided with a convex surface 13 on which is mounted a concave reflector 14 having a concave reflecting surface 15 which conforms to the associated convex surface of said reflecting button. The reflecting button 12 is preferably provided with a longitudinally extending annular flange 16 forming a recess 17 in which the reflector 14 is received, and which retains said reflector in position with its concave surface against the convex surface of said button.

The upper section 102 of the mold is provided with a recess 18 which is shown as circular in form and surrounding the upper end of the reflecting button 12. The upper end of the recess 18 is closed by a plunger 19 against which pressure may be applied by any suitable device and in any suitable manner (not illustrated). It will be understood that the reflecting surface of the reflector is formed with respect to the convex surface at the opposite end of the reflecting button to direct the light rays forwardly therefrom in accordance with well known laws. The portion of the mold surrounding the recess 18 is preferably provided with a chamber 20 to which fluid may be introduced through a suitable passage or passages 21 and from which it may be exhausted through a passage or passages 22.

The combined reflecting button and mounting therefor embodying my invention may be prepared in the following manner. The two sections of the mold being separated, the reflecting button is placed in the recess 11 in the lower section of the mold, and the upper section thereof is placed in position over the lower section, as indicated in Fig. 1. The recess 18 in the upper section of the mold is then charged with a measured amount of heat curing plastic material having a greater coefficient of contraction than the glass reflecting button 12. A material which I have found to be

particularly well suited for the purposes of my invention is "Bakelite" which, as is well known, is a phenol derivative. This material may be procured in the form of a powder and may be charged into the mold in this form. The mold, having been heated by steam which is introduced through the passage 21 to the chamber 20, is raised to a sufficiently high temperature to melt the "Bakelite" and it is thus compressed under heat and pressure around the upper end of the glass button 12 thereby filling the recess 17 and embedding the upper end of the reflecting button 12 in the material. When the two sections of the mold have been closed a sufficient length of time to permit proper curing of the heat curing plastic material, water is admitted to the chamber through the passage 21 to chill the upper section of the mold and the reflecting element of the form illustrated in Fig. 2 is forced from the mold by the plunger 19 and is ready for use.

As the heat curing plastic material which forms the mounting for the reflecting button has a higher coefficient of contraction than does the glass button, it surrounds the same so closely that access of moisture to the reflecting surface 15 is effectively prevented and the reflecting element indicated in Figs. 2 and 3 may be used indefinitely without the reflecting surface of the reflector becoming tarnished.

By embedding the larger end of the reflecting element in the heat cured plastic material 25, the button is effectively locked in said material with no possibility of its being removed therefrom. Relative movement between the reflecting button and the hardened plastic material in which it is embedded is further prevented by providing the glass button with laterally extending projections 121 which are embedded in the heat cured plastic material.

The reflecting element may conveniently be mounted in an opening 23 in a supporting member 24 in which the reflecting button of the reflecting element is received and in which it may be secured by any convenient means, the hardened plastic material being seated against said support.

It will, of course, be understood that in practice a plurality of such reflecting elements are assembled in any desired design as by forming letters and words.

While I have described my invention in its preferred embodiment it is to be understood that the words which I have used are words of descriptoin rather than of limitation and that changes within the purview of the appended claims may be made without departing from the true scope and spirit of my invention in its broadest aspects.

What I claim is:

1. A light reflecting element and a mounting therefor comprising a body of light transmitting material one end of which is convex in form and freely exposed to the air, a body formed of heat cured "Bakelite" in which the opposite end of said body of light transmitting material is embedded, such embedded end of said body being formed with a convex surface and a concave reflector mounted on said convex surface of said body and conforming thereto, said body of heat cured plastic material having in its uncured condition a coefficient of contraction greater than that of said body of light transmitting material, said plastic material extending laterally beyond said reflector thereby sealing the same.

2. A light reflecting element and a mounting therefor comprising a body of light transmitting material one end of which is convex in form and freely exposed to the air, a body of heat cured plastic material in which the opposite end of said body is embedded, such embedded end of said body being formed with a convex surface, said body being tapered from the inner end to the outer end thereof and a concave reflector mounted on the embedded end of said body of light transmitting material and conforming to the convex surface thereof, said body of heat cured plastic material having a co-efficient of contraction greater than that of said body of light transmitting material and extending laterally beyond said reflector thereby sealing the same.

3. A light reflecting element and a mounting therefor comprising an elongated body of light transmitting material one end of which is of greater diameter than the other and both ends of which are convex in form, the end of greater diameter being provided with a rearwardly extending annular flange and a reflector mounted within said flange, said end of greater diameter including said reflector and the enclosing flange being imbedded in a body of heat cured plastic material having a co-efficient of contraction greater than that of said light transmitting material.

CLAUDE G. BORDEAUX.