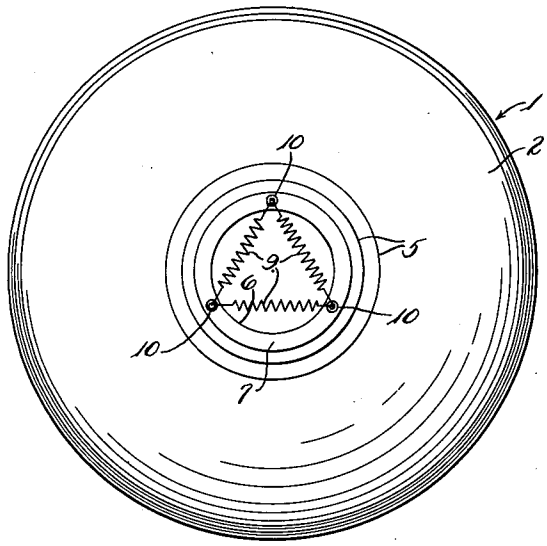
Nov. 20, 1962 J. H. SHAVER, JR 3,065,341

LIGHT REFLECTOR

Filed Sept. 9, 1958

X2545

FIG.1



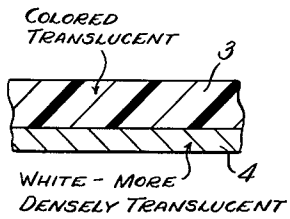




FIG.6

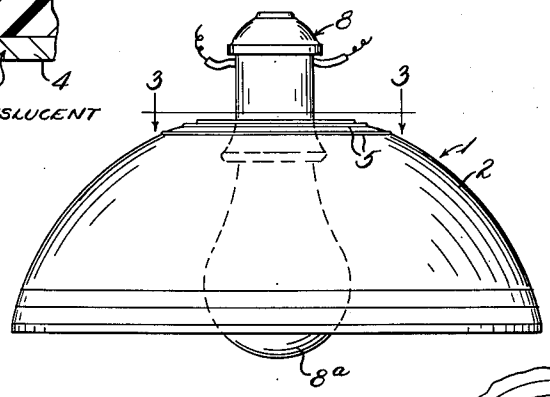
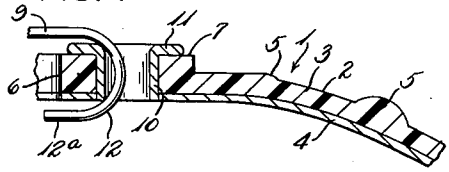



FIG.2

FIG.4



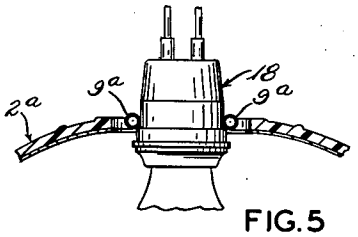
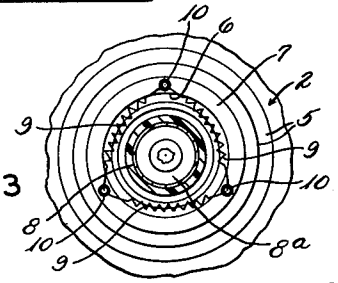




FIG.5

FIG.3

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3,065,341

# LIGHT REFLECTOR

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1 Claim. (Cl. 240—41.35)

This invention relates to light reflector units, especially to a reflector especially adapted for use out-of-doors and for providing a major portion of its illumination directed downwardly, but to have a limited amount of light pass upwardly through the reflector unit.

There have been many different types of light reflectors provided in the past and they have had a variety of functions. However, there have not been many satisfactory reflectors provided for use out-of-doors and many of such units have not been adapted to stand any exposure to the weather for any satisfactory length of time. Furthermore, most of such reflector units, insofar as I am aware, have not provided an attractive reflector structure for both daytime and nighttime purposes. It also has been somewhat difficult to secure reflectors to supporting structures in many instances. At the same time, there are many places such as advertising signs, used car lots, super markets and many other places wherein the provision of an attractive, long lived reflector unit for exposure to the atmosphere, and weather conditions at all times would have wide appeal.

The general object of the present invention is to provide a novel and improved reflector unit suitable for exposure to weathering conditions and characterized by the attractive appearance of the light reflector, both in the daytime and at night when a bulb associated therewith is illuminated.

Another object of the invention is to provide a laminated plastic reflector adapted to be secured in position by engaging an associated light bulb socket.

Yet another object of the invention is to provide an attractive plastic reflector where the different laminations of plastic have different light transparencies and have different thicknesses to control the amount of light passing upwardly and downwardly from the reflector.

A further object of the invention is to provide a relatively inexpensive, but sturdy light reflector unit of attractive shape and appearance, and which can be secured to a light bulb to be supported thereby.

The foregoing and other objects and advantages of the invention will be made more apparent as the specification proceeds.

Attention now is particularly directed to the accompanying drawings, wherein:

FIG. 1 is a top plan view of a light reflector embodying the principles of the invention;

FIG. 2 is a side elevation of the light reflector of FIG. 1 as operatively positioned;

FIG. 3 is a section taken on line 3—3 of FIG. 2;

FIG. 4 is an enlarged fragmentary vertical section of the spring receiving grommet embedded in the reflector;

FIG. 5 is a section of a light reflector of the invention engaged with a modified type of a socket; and

FIG. 6 is an enlarged section through a portion of the light reflector unit of the invention.

When referring to corresponding members shown in the drawings and referred to in the specification, corresponding numerals are used to facilitate comparison therebetween.

The present invention, in general, relates to a light reflector comprising a molded plastic shade having a center hole therein and primarily made from an outer layer of transparent plastic material such as butyrate, which shade has an inner face layer of translucent plastic intimately bonded to the outer plastic layer, a plurality of grommets



secured to and extending through the shade adjacent the center hole, and a plurality of coiled retainer springs secured to and extending across parts of the reflector center hole between the grommets for engaging a light bulb socket extending through the reflector center hole for mounting the light reflector on such socket.

Attention now is particularly directed to the details of the structure shown in the drawing, and a light reflector unit of the invention is indicated as a whole by the numeral 1. This light reflector 1 includes a molded shade 2 that normally is made from two layers of plastic material, which plastic material has different ingredients compounded therein for rendering the material or different degrees of light transmission and light reflection properties.

The shade 2 primarily is made from an outer layer 3 of transparent plastic material. This layer 3 is made from a colored butyrate plastic i.e. cellulose acetate butyrate, which can be readily molded to desired shape for forming the shade 2 and which has excellent weathering properties. Suitable colors can be provided in such outer layer 3 without changing the translucent characteristics of the shade very noticeably. An inner or face layer 4 is provided in the shade 2 and which layer is more densely translucent or, stated in another manner, is appreciably more opaque than the outer layer 3. Such inner layer 4 can be made from a suitable material that can be sprayed onto, or be otherwise deposited onto the surface of the outer layer for forming the more dense, or translucent inner coating thereon. Of course, the inner layer 4 is made from a material that is compatible with the material forming the outer layer 3.

As another feature of the invention, the shade 2 is provided with a plurality of concentric ribs 5 on the outer surface thereof adjacent a center opening 6 therein. These ribs 5 aid in reenforcing the shade 2 adjacent the opening 6. The drawing clearly shows that the shade 2 is of generally curved hollow conical, or semi-spherical shape but that a substantially flat, reenforcing top section, indicated at 7, is provided therein. As a novel feature in the invention, the shade 2 is adapted to be positioned upon a light bulb socket 8 by means of a plurality of coiled metal springs 9 secured to the shade 2 at the flat top section 7 thereof. These springs 9 extend as chords across edge portions of the opening 6, as shown in FIG. 1, for resiliently engaging the socket 8 intermediate enlarged top and bottom portions thereof (one of which portions is removable). A bulb 8*a* is carried by the socket 8.

The engagement of the springs 9 with the shade 2 is greatly facilitated by the provision of a plurality of grommets 10 secured to the shade 2 immediately adjacent the opening 6 therein in the thickened top section 7 of the shade 2. These grommets 10 have outer flanges 11 usually provided on only the outer ends of the grommets 10 and engaged with the outer surface of the layer 3. It should be noted that the grommets 10 are engaged with the shade 2 when the plastic outer layer 3 is hot, as immediately after removal of the shade 2 from a mold in which it is made. By pressing the grommets 10 into the holes provided in the molded shade for them at such time, the plastic material forming the shade 2 will shrink as it cools and will tightly hold the grommets in position even though the inner ends thereof are not crimped or peened over in any manner to engage the plastic in the shade 2.

Light reflectors 1 made in accordance with the practice of the invention have been provided in many attractive colors wherein the color of the shade is determined by the color of the outer layer 3. Suitable contrasting colors are also provided in the inner layer 4, such as a dense white color is provided in the inner layer 4 so that the majority of light provided by the bulb 8*a* will be directed down-

wardly from the shade **2** by the inner layer **4** thereof. However, other light rays, such as approximately 10 to 25% of the light from the bulb will pass through both the outer and inner layers of the shade and will be colored when it passes through the outer layer **3** to provide a nicely illuminated shade by a small amount of light passing upwardly therethrough. Thus an attractive, but durable shade has been provided and it can be used outdoors or indoors, as desired, and provides an attractive, useful article having a long service life. Thus it is believed that the objects of the invention have been achieved, as the butyrate plastic gives good service and weather resisting characteristics to the reflector.

FIG. 4 best shows how ends **12** of the coil springs **9** extend back along parallel to the axis of the spring and how a semi-circular loop of about 180° in length in the end **12** neatly fits into and extends through the grommet **10**. Such coil ends **12** terminate in a straight wire section, or length **12***a* that aids in securing or retaining the coil spring in engagement with the positioning grommets by extending in towards the centers of the springs parallel to the center axis thereof.

In FIG. 5, a reflector shade **2***a* is carried by a different type of a bulb base **18** of a conventional design. Springs **9***a* secure the shade **2***a* to the base or socket **18**, as before. Other conventional sockets may be used as long as the springs can be engaged therewith and a retaining ledge or rib of some type is provided to retain the shade on the socket by spring action.

While two complete embodiments of the invention have been disclosed herein, it will be appreciated that modification of this particular embodiment of the invention may be resorted to without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

In combination, an electric light bulb, an electric light bulb socket, and a flexible butyrate plastic light reflector, said light reflector comprising a hollow semi-spherical shade having a center hole therein through which said bulb socket extends and primarily made from a relatively thick outer layer of transparent butyrate material, said shade having a relatively thin inner layer of translucent plastic intimately bonded to said outer layer, three grommets secured to and extending through said shade adjacent said center hole, and secured to and extending through said shade adjacent said center hole, and a plurality of retainer springs secured to and extending between said grommets and engaging said light bulb socket to mount said light reflector adjacent said bulb with said bulb and shade being substantially of the same length, said retainer springs normally being positioned as chords of said center hole, said light reflector being of uniform thickness except for annular reenforcing sections therein adjacent said center hole, said grommets being spaced equal distances circumferentially of said shade, light from a bulb positioned in the socket being reflected primarily downwardly and outwardly by said shade from said inner layer but with about 10 to 25% of such light passing upwardly uniformly through all portions of said shade, said shade being weather resistant in its outer layer.



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