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J. F. BUTLER

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DISPLAY DEVICE

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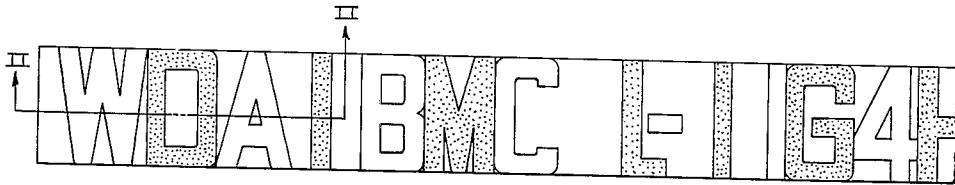


FIG. 1

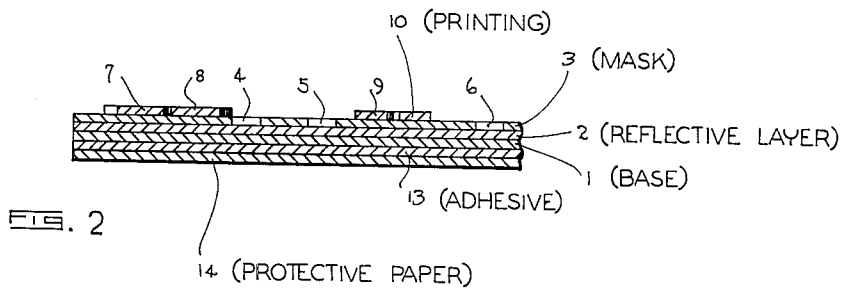


FIG. 2

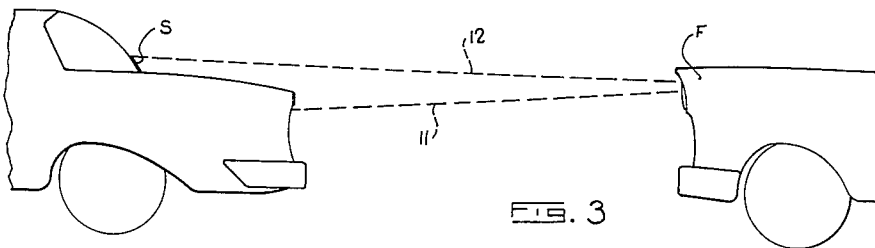


FIG. 3

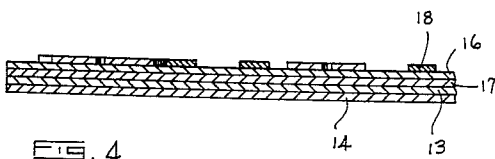


FIG. 4

INVENTOR.
JOSEPH F. BUTLER
BY
Woodhams Blanchard & Flynn
ATTORNEYS

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DISPLAY DEVICE

Joseph F. Butler, 544 Campbell, Kalamazoo Township,
Kalamazoo County, Mich.

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1 Claim. (Cl. 40—135)

This invention relates to a reflective warning device and particularly to a type thereof adapted to present one message in ordinary daylight and a totally different message under directed illumination, such as from automobile headlights.

The discomfort and inconvenience to a driver caused by bright headlights on a car behind him is well known and many devices have been proposed in the past to deal with this problem. Some involve shutters over the back window of the car, others involve means for shading, tilting, or dimming a rearview mirror, both mirrors inside and outside of the car, but all these devices, while effective, are relatively expensive.

In considering this problem, it occurred to me that in many cases the maintaining of bright headlights by a following car is more often a matter of inattention on the part of the driver of such car than it is a deliberate intent to maintain headlights in such position, and experimental work in pursuance of this thought has shown that a reminder to the driver of the following car is usually all that is needed to cause him to turn his headlights into their lowered or passing position.

Accordingly, the objects of the invention are:

(1) To provide a sign adaptable for carrying on the rear of an automobile and capable of presenting a message to the driver of a following vehicle.

(2) To provide a sign, as aforesaid, capable of simultaneously carrying two messages, one visible under ordinary daylight and the second visible when illuminated by the headlights of a following vehicle.

(3) To provide a sign, as aforesaid, wherein the normally invisible sign includes material having highly light-reflective characteristics such that it will glow brilliantly when illuminated by a light source concentrated at a specific location, such as automotive headlights.

(4) To provide a sign, as aforesaid, which is capable of inexpensive production, particularly when produced in large numbers.

(5) To provide a sign, as aforesaid, which is capable of production by simple means and/or processes, such as either or both of silk-screening and printing processes and can be made from readily available and inexpensive materials.

(6) To provide a sign, as aforesaid, which can be readily adapted for a wide variety of purposes and uses as desired.

Other objects and purposes of the invention will be apparent to persons acquainted with devices of this general sort upon reading the following disclosure and inspection of the accompanying drawings.

In the drawings:

FIGURE 1 is a fragmentary plan view of a sign made according to the invention.

FIGURE 2 is a schematic representation of the composition of the sign taken along the section line indicated by the numerals II—II in FIGURE 1.

FIGURE 3 is a schematic representation indicating a typical manner of use of the invention.

FIGURE 4 is a view, similar to FIGURE 2, showing a modification.

Referring further to the figures, there is provided a base panel 1 which in this particular embodiment is a sheet base of a suitable plastic material, such as cellophane, in view of its flexibility and inexpensiveness. Said base carries a reflective layer 2 which is preferably of the

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well-known "Scotch-Light" material made by the Minnesota Mining and Manufacturing Company but may be of any similar material capable of reflecting light through a wide angle in response to light received thereon from a concentrated source. Such material is found in a variety of products utilizing glass beads, particularly where said glass beads are held in place and/or covered by a transparent plastic material.

An opaque masking layer 3 is placed to overlie the reflective layer excepting for certain areas through which the reflective layer is to be visible and said masking layer is of a color which matches as closely as possible the color of the reflective layer in ordinary daylight. Thus, in FIGURE 1 the masking layer is apertured to outline the letters indicated in FIGURE 1 by broken lines, said apertures further appearing at 4, 5 and 6 in FIGURE 2. The openings 4 and 5 indicate the two portions of the letter "D" cut by the section line II—II and the opening 6 indicates the portion of the letter "T" cut by the section line II—II. It has been found that a light pearl-gray enamel-type masking material when used for the masking layer 3 will closely match in normal daylight the color of the particular "Scotch-Light" product known as "Silver Scotch-Light."

Opaque letters of a highly contrasting color, such as black when the masking layer 3 is of a light color such as the pearl-gray above mentioned, may then be applied to the masking layer at locations thereon where they will not interfere or overlap the apertures through the masking layer. Thus, in FIGURE 1 where the device is designed for publicity purposes by a radio station, the call letters of the radio station here indicated by a W.A.B.C. may be printed on top of the masking layer with such letters interspersed with the letters of the word "Dim" as shown and the frequency of the radio station may be interspersed with the letters of the word "Lights" at the rightward end of the sign. The zones 7, 8, 9 and 10 appearing in FIGURE 2 indicate the portions of the letters "W" and "A" which are cut by the section line 2. The reflective letters and the printed letters are placed as closely as possible together and may in some instances even be actually somewhat nested. This has the combined advantages of making each message appear as naturally spaced as possible and insures that the brilliance of the "Scotch-Light" letters will, when same are illuminated by automobile headlights, render the adjacent non-reflective letters substantially invisible. It is desirable in many instances, as indicated in the drawings, that the two kinds of letters be substantially contacting each other as viewed by the observer.

In the form here illustrated, the base 1 carries a pressure-sensitive adhesive 13 on its under side which adhesive is normally protected by a protective material, such as paper, 14. The sign is thus applied to the outside of the rear window in a conventional manner by removing the protective layer and pressing the sign firmly against the glass of the window.

Alternatively however, the adhesive can readily be applied to the upper side of the sign so that the sign can be applied to the inside of the window. This, while desirable from the standpoint of protecting the sign from the weather, it is relatively expensive inasmuch as it requires adhesive to be applied after the application of both the masking layer and the printing material.

FIGURE 3 illustrates one normal manner of using a sign of the character shown in FIGURES 1 and 2. The sign is placed as indicated by the letter S in the rear window of an automobile. Under ordinary daylight conditions only the letters printed in the contrasting color are readily visible, namely, the legend including the letters W.A.B.C. appearing in FIGURE 1. Thus the advertising, or other, message desired is displayed as the auto-

mobile travels about during daylight. At night when a following car F has its headlights in lowered, or passing position wherein the upper edge of the beam is indicated by the line 11 in FIGURE 3 there is no appreciable illumination of the sign S and the driver of the following car sees nothing of the sign S. However, if his lights are in upper or driving position so that the upper edge of the beam, indicated by the line 12 in FIGURE 3, strikes the sign S, then the light is reflected by the exposed portions of the reflective layer and the letters formed thereby become visible. In the example here shown, the letters so made visible form the message "Dim Lights" so that the driver of the following car has attention called to the desirability of his adjusting his headlights into passing position.

It is of course possible also to apply first a masking layer 16 to a base 17 then apply a printing 18 to the masking layer 16 as desired. This will be followed by applying cut-out letters of light-reflective material, such as "Scotch-Light," also on the masking material and interspersed between the printed letters 18. This has an advantage of adapting itself well to situations where it is desirable to place the printed material on the sign at the time of manufacturing same and leaving the customer to apply his own individual message at the time of purchase by simultaneously purchasing pre-cut letters of reflective material. However this has the disadvantage that it will be more expensive than ordinary manufacturing operations (other than where the customer applies his own reflective message) and where the sign is applied on the outside of the window the letters so applied may suffer from weather conditions.

Although a particular preferred embodiment of the invention has been disclosed above for illustrative purposes, it will be understood that variations and modifications of such disclosure, which lie within the scope of the appended claim are fully contemplated.

What is claimed is:

In a laminated, selectively reflective advertising and high-light signalling device for use on the rear of automotive vehicles, the combination comprising:

- (a) a relatively narrow base strip,
 - (b) a continuous, coextensive layer of highly light reflective material on said base strip,
 - (c) a coextensive layer of opaque masking material of substantially the same color under ordinary daylight conditions as said reflective material overlying said reflective layer,
 - (d) said masking material being shaped to provide spaced openings exposing such portions of said reflective material as will define desired first signalling indicia in readable continuity along said strip,
 - (e) means providing a second indicia in readable continuity along said strip on said masking material,
 - (f) said second indicia being disposed between the openings in said masking layer which define said first signalling indicia,
 - (g) said second indicia further being of a material having a highly contrasting color under ordinary daylight conditions with respect to said masking material,
- whereby under ordinary daylight conditions said first signalling indicia will be substantially invisible and said second indicia will be highly visible, but under conditions of point-source illumination, such as from automobile headlights, said first signalling indicia will become highly visible as a high-light signalling indicia and said second indicia will be unnoticeable.

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