Oct. 27, 1942. W. F. O'GORMAN 2,300,234

LUMINOUS SIGN

Filed Jan. 29, 1941

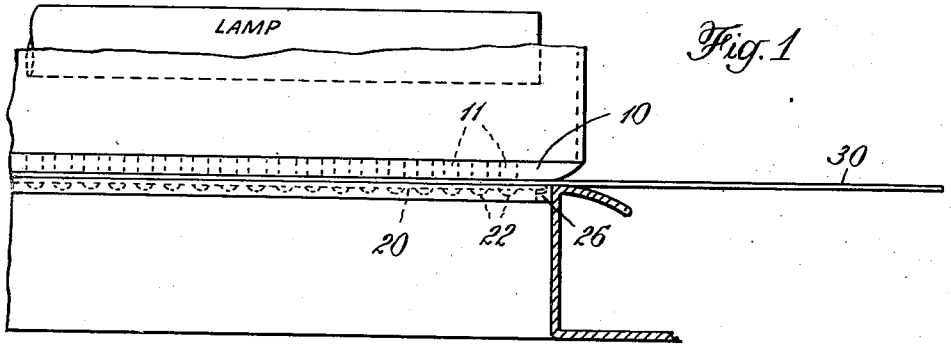
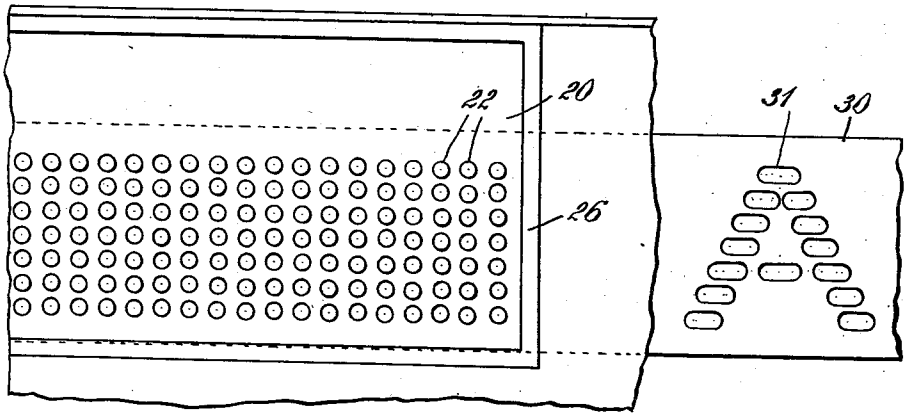


Fig. 1

Fig. 2.



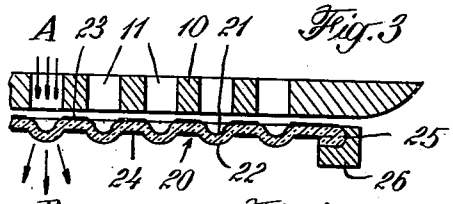


Fig. 3

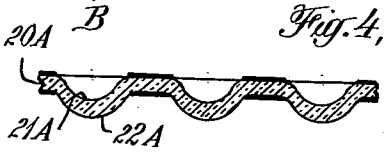


Fig. 4,

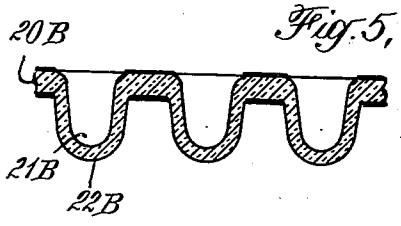


Fig. 5,

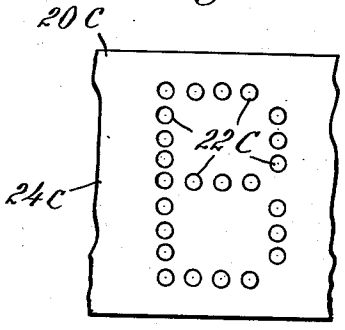


Fig. 6.

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UNITED STATES PATENT OFFICE

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LUMINOUS SIGN

William F. O'Gorman, New York, N. Y.

Application January 29, 1941, Serial No. 376,441

4 Claims. (Cl. 40—130)

This invention relates to improvements in luminous signs, and its object is to provide a simple and inexpensive panel with spaced portions through which light may be transmitted and diffused with opaque areas between such portions. This invention is applicable to moving signs such as that disclosed in my copending application for patent Serial No. 356,724, filed September 14, 1940, but is in no sense limited to that particular use.

It has been customary to make such panels of perforated metal or other opaque material, with bead-like transparent inserts in the perforations. I have found that superior results may be attained by making a panel of transparent or translucent plastic material expressed or molded to form spaced indentations on the rear side and protuberances on the front side and with the area on one or both sides between the indentations and protuberances covered with an opaque coating.

I will describe in the following specification certain structures which embody my invention and will point out its novel features in appended claims.

Referring to the drawing,

Fig. 1 is a top plan view of a part of a moving sign with a front panel therein which is made according to and embodies the present invention;

Fig. 2 is a front elevation of the parts shown in Fig. 1;

Fig. 3 is a sectional plan view on an enlarged scale of the panels shown in the preceding figures;

Figs. 4 and 5 are sectional plan views on a still larger scale illustrating structural modifications;

Fig. 6 is a front elevation of another form of panel which also embodies my invention.

10 designates a rear panel which forms one side of a casing within which is a fluorescent lamp or other source of luminosity. This panel is constructed with a plurality of regularly spaced openings 11 through which the light from the lamp may pass.

20 is a front panel of novel construction. It is made of a transparent or translucent plastic to form a rear surface which is parallel with but spaced from the front surface of the rear panel. At intervals corresponding in position to the openings 11 are indentations 21 pressed or molded in the panel to form protuberances 22 extending from the front face of the panel. The areas on the rear surfaces between the indentations are covered with a coating 23 of opaque material, such as black paint. For some of the effects desired, a similar coating 24 may be applied to the front surface between the protuberances 22.

The material of which the front panel is made may be quite thin, in which case its edges may be turned over as shown at 25 to stiffen it. 26 is a metallic frame which surrounds and supports this front panel.

30 is a band of opaque flexible material in which are perforations 31 which are positioned to register with the openings 11 in the rear panel and the indentations 21 in the front panel. The perforations are disposed in predetermined relations so that light rays transmitted through them and through the panels will form desired insignia or designs. This band is placed in the space between the two panels and in moving signs is propelled.

The light rays passing through the rear panel in substantially parallel lines, as indicated by the arrows A in Fig. 3, will pass through into the depressions and out of the protuberances in the front panel and be diffused thereby, as indicated by the arrows B in the same figure. The result is that an illuminated sign is formed which simulates the effect produced by electric light bulbs.

In Fig. 4 the indentations 21A and 22A in the panels 20A are so proportioned as to form lenses which magnify the light rays and diffuse them more widely.

In Fig. 5 another construction is shown in which the indentations 21B are deeper and the protuberances 22B extend considerably beyond the front face of the panel 20B.

The invention as shown in Fig. 6 is applied to the form of stationary sign in which the desired insignia is formed by properly spaced indentations and protuberances 22C in a panel 20C, all of which transmit light. The entire area between the light transmitting parts of the panel is covered with an opaque coating 24C. It is understood, of course, that the rear surface of the panel may be coated similarly and that either or both sides may be coated as desired.

Several structural modifications have been illustrated and described in order to show that the invention may be carried out in different ways and I intend no limitations other than those imposed by the appended claims.

What I claim is:

1. In an illuminated sign of the type having a source of light and a perforated opaque band, a panel of a single piece of integral light transmitting material having parallel faces construct-

ed to form substantially circular indentations in one of said faces spaced to cooperate with the perforations in the band and correspondingly situated bead-like protuberances from the opposite face formed by said indentations, with an opaque coating on one of said faces covering the spaces between the indentations therein.

2. In an illuminated sign of the type having a source of light and a perforated opaque band, a panel of a single piece of integral light transmitting material having parallel faces constructed to form substantially circular indentations in one of said faces spaced to cooperate with the perforations in the band, correspondingly situated bead-like protuberances from the opposite face formed by said indentations, with an opaque coating on one of said faces covering the spaces between the indentations therein, and an opaque coating on the other face covering the spaces between said protuberances.

3. In an illuminated sign of the type having a source of light and a perforated opaque band, a panel of a single piece of integral light transmitting material having parallel faces constructed to form substantially circular indentations in one of said faces spaced to cooperate with the perforations in the band and correspondingly situated bead-like protuberances from the opposite face formed by said indentations, with an opaque coating on one of said faces covering the spaces between the indentations therein, the material between the indentations and protuberances being gradually thickened to form lenses.

4. An illuminated sign comprising a stationary rear opaque panel constructed with regularly spaced openings therein, a front panel of a single piece of integral light transmitting plastic material spaced from the rear panel and a perforated band interposed between the panels, the perforations in said band being adapted to be brought into registration with the openings in the rear panel, said front panel having parallel faces constructed to form regularly spaced substantially circular indentations in one of said faces and correspondingly situated bead-like protuberances from the opposite face formed by said indentations, with an opaque coating on one of said faces covering the spaces between the indentations therein.

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