

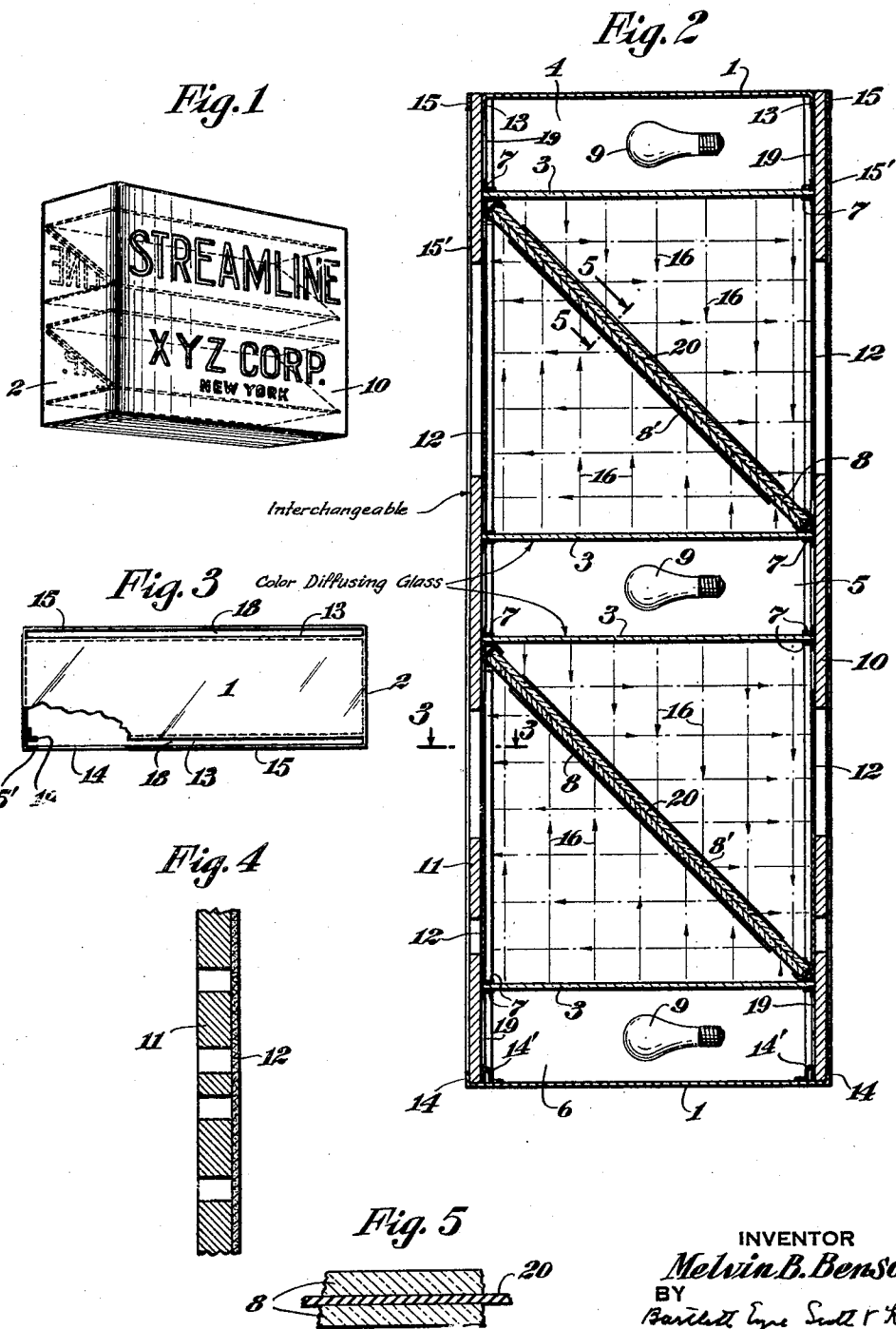
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SIGN

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UNITED STATES PATENT OFFICE

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This invention relates to signs.

One object of the invention is a novel and improved sign advertising or announcing device and particularly such a device which is usable throughout the twenty-four hours of the day with its effectiveness unimpaired by daylight. A further object of the invention is a sign of this general character in which may be used sources of light of any desired or conventional form. A further object of the invention is a sign or advertising device in which the characters or letters of the message to be conveyed stand out in the daylight as well as the night as distinct individual units though the lighting is indirect and though the light for a number of letters originates from a single source. A further object of the invention is a sign or advertising device of this general character which is further characterized by the economy in its manufacture, by the ease and facility with which the message or subject-matter may be changed and by the ease and facility of repair and replacement of parts.

For a better understanding of the invention reference may be had to the accompanying drawing forming one embodiment thereof wherein:

Fig. 1 is a perspective view of a sign made according to one embodiment of the invention,

Fig. 2 is an enlarged sectional view thereof somewhat diagrammatic,

Fig. 3 is a plan view of the sign, and

Figs. 4 and 5 are sections on an enlarged scale of parts thereof.

Referring to the drawing my improved sign includes a permanent frame structure including the top and bottom plates 1 and end plates 2, these plates being of any suitable material as, for example, sheet metal formed into the desired shape from a single piece of metal. Certain of the details of the permanent frame unit are omitted for convenience. The frame carries one or more

diffusing glass plates 3, in the particular embodiment shown there being four of these diffusing glass plates, the upper one forming with the top 1 and end walls 2 a lighting chamber 4, the two intermediate ones forming between themselves and the end walls a lighting chamber 5 and the lower one forming with the bottom wall 1 and end walls 2 a lighting chamber 6. These diffusing glass plates are indicated as being supported by angle pieces 7 which are secured to the permanent frame to form a rigid unit therewith, as for example to the end walls 2 by welding. There is a double back to back mirror 8 between the upper pair of diffusing glass plates 3 and a similar double mirror (back to back) in the chamber formed between the lower pair of diffusing glass plates 3, these mirrors being disposed at the desired angle as, for example, 45° to project outwardly the light rays coming from the adjacent lighting chambers. These mirrors are carried by the permanent frame structure which includes the top and bottom walls 1 and end walls 2 in any suitable manner, as for example by channels 8' welded to the end walls 2. The lighting chambers 4, 5 and 6 are entirely closed with opaque walls on all sides except for the diffusing glass walls or window 3. Conventional incandescent lamps 9 are indicated in these chambers as the light source, it being understood that as many lamps 9 of the desired capacity and type as may be needed are employed although in the drawing there is indicated only one of these lamps in each chamber. These lamps may conveniently be in the form of elongated tubular bulbs extending lengthwise of the lighting chamber. The electrical connections are also omitted for convenience. The permanent frame structure above described carries detachably secured thereto a front plate 10 and a rear plate 11, each of these plates being stencilled according to the desired message to be conveyed or advertise-

ment to be announced, and over the stencilled part of these plates there is disposed a transparent textile layer 12. I have found that white silk which has been suitably treated to render it fireproof forms a very satisfactory textile or fabric layer, it having a very fine mesh and functioning to smooth out the image projected from the mirror. It is pasted, for example, on the back or inside of the plates with a view to minimizing the effect of the weather conditions thereupon. The textile layer 12 is preferably white although it may, of course, be desirable in some cases to have it colored. For example amber or faint yellow tint may be employed to good advantage in certain cases. The front and back plates 10 and 11 form the opaque side closing walls for the lighting chambers 4, 5 and 6. They, therefore, form a tight light seal with the top and bottom walls 1 and the end walls 2 as, for example, by engaging the angles or flanges 13 formed from the top wall 1 and the angle pieces 7 which carry the diffusing glass 3. These front and back stencilled plates may be detachably secured in any suitable manner, but in the present instance are indicated as slid in from the top within grooves formed by side flanges 15' formed from the end walls 2 of the casing, these flanges being joined at the top and bottom by elongated bridging members 15 and 14 respectively. U-shaped spring members 14' are secured to the lower wall 1 in the interior thereof against which the lower edges of the plates 10 and 11 abut in the assembled position. The chambers 18 for the reception of the removable plates 10 and 11 are indicated in Fig. 3. The diffusing glass plates 3 may be of any suitable form and color to cause the letters of the message to stand out in clear and distinct outline in the daylight. They may be formed with a diffusing surface in any suitable manner, as, for example, by finely corrugating and rippling or by pitting or sandblasting or they may be of a special composition glass which functions not only to give the desired color and character to the light rays passing there-through, but to thoroughly break up and diffuse the light coming from the sources 9. Any suitable color may be used, but I have found that blue, red, amber or green may be used to good satisfaction. By properly diffusing and coloring the glass plates 3 and by insertion of sources of light of the desired capacity properly distributed within the lighting chambers 4, 5 and 6 these glass plates are illuminated in such manner as to form in effect a source of colored light from which the rays of light 16 emerge to strike the mirrors 8 and from there to be projected through the stencilled plates 10 and 11. These mirrors are thereby uniformly lighted over their whole surface and they project forwardly the images of the colored glass

plates 3 rather than the images of the source. The stencilled letters or characters in the front and back plates are uniformly lighted by the light rays of the color of the glass plates 3 with the result that the letters or characters of the textile layer 12 which are formed by the stencilled openings in the front and back plates are caused to stand out in distinct outline giving the appearance of individual self-lighting tubes as, for example, illustrated in Fig. 1. These letters stand out and are distinctly defined in the daylight as well as in the night, the image of the whole colored plate 3 being projected upon the textile layer 12. The latter functions to soften the projected light without appreciable absorption and to smooth out and render more uniform the character of light images projected forward. When it is desired to change the message or advertisement it is only necessary to remove the opaque stencilled plates 10 and 11 and substitute others therefor carrying the desired message, the other parts of the sign being retained as a unit in position at all times. In the particular embodiment shown the lighting chamber 5 serves as a source of light for the lower part of the front stencilled plate 10 and for the upper stencilled part of the plate 11 while the lighting chambers 4 and 6 serve only as a source of light respectively for the upper stencilled part of the plate 10 and the lower stencilled part of the plate 11. The sign can be very cheaply manufactured and assembled due to the simplicity of the construction thereof and the use of standard material, while the operating characteristics of this sign which project forward the message or advertisement in colored letters or characters standing out as separate and distinctly defined characters in the manner indicated are marked and pronounced. Other fabric materials such for example as fireproof tracing cloth may be used in place of the silk, but the latter is preferred because of its very fine texture and mesh. The thickness of the silk layer 12 (and also the plates 10 and 11) is exaggerated for purposes of exposition. The mirrors 8 which are placed back to back are preferably separated from each other by a layer of some protecting material such for example as the sheet of rubber 20. L-shaped members 19 are secured to the end walls 2 to form with the flanges 15' and the flanges 13 guide grooves for the back and front plates 10 and 11.

I claim:

1. An electric sign including a casing, four light beam diffusing glass plates carried by said casing and forming lighting chambers at the top, middle and bottom portions thereof with reflecting chambers disposed between the lighting chambers, double back to back mirrors carried within said reflecting chambers and inclined to the glass diffusing

plates, each double mirror being adapted to project images of the diffusing glass plates and stencilled plates carried in front and back of said casing directly opposite the reflecting chambers.

2. A sign of the character set forth in claim 1 wherein the stencilled plates are contained within guideways formed by flanges on the end walls of the casing and by members bridging said flanges.

In testimony whereof, I have signed my name to this specification.

MELVIN BERNARD BENSON.