Nov. 15, 1927. 1,648,977

V. WEIDNER

SIGN

Filed March 15, 1926

Fig. 1.

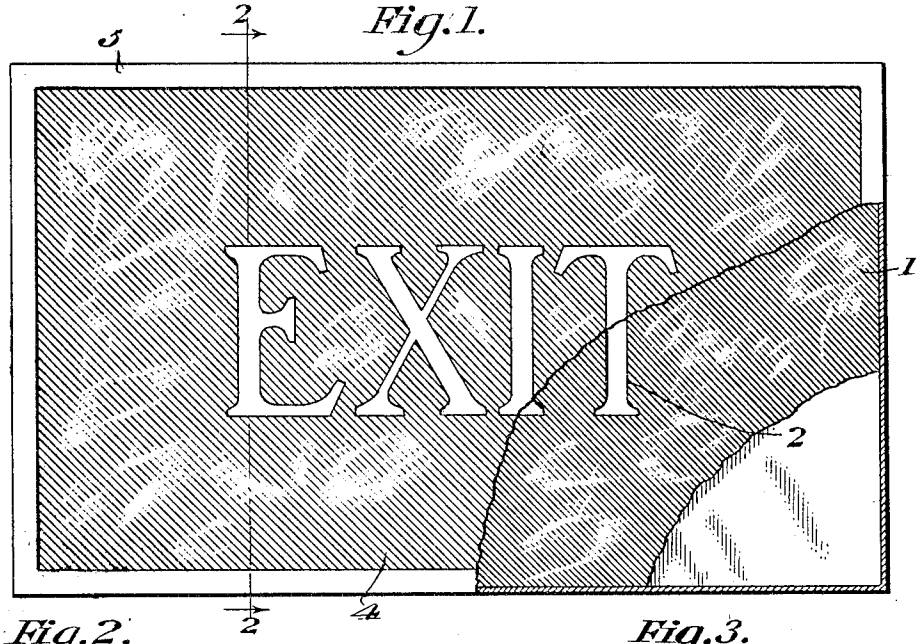


Fig. 2.

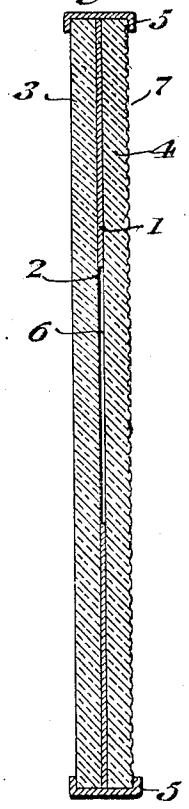


Fig. 5.

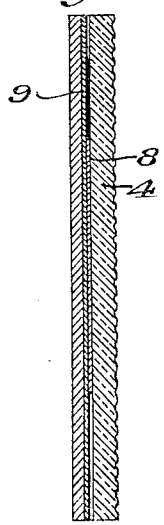


Fig. 6.

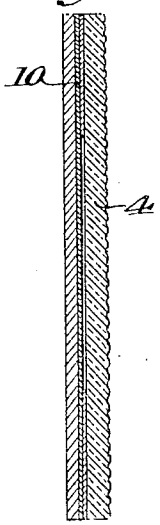


Fig. 3.

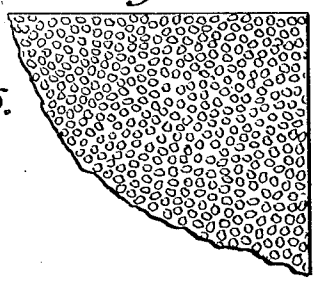
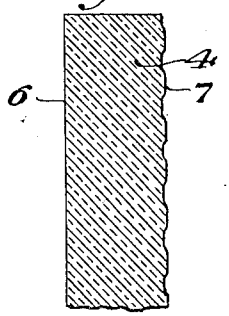


Fig. 4.



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UNITED STATES PATENT OFFICE.

VICTOR WEIDNER, OF PORT WASHINGTON, NEW YORK, ASSIGNOR TO VIKING PRODUCTS CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

SIGN.

Application filed March 15, 1926. Serial No. 94,878.

An object of the present invention is to provide a sign of simple and inexpensive structure which will present a neat and highly distinctive appearance.

A further object of the invention is to provide a sign wherein a surface, bearing sign characters, is covered by a glass plate, the said plate being adapted to act upon the light rays which it receives in a manner to create a very definite illusion that the sign characters and their surrounding field have been brought forward to the front face of the plate.

Other objects will appear as the following description is read in connection with the drawings.

In the drawings, Fig. 1 is a front view of the sign, parts being broken away to show the inner structure;

Fig. 2 an enlarged vertical section taken on the line 2—2 of Fig. 1;

Fig. 3 a fragmentary front face view of the glass plate;

Fig. 4 a greatly enlarged fragmentary sectional view of the glass plate; and

Figs. 5 and 6 sectional views showing two modifications of the invention.

Referring to the parts by numerals, 1 designates a sheet of opaque material formed at the center of its area with a plurality of stencil openings 2 defining sign characters. Disposed against the rear face of the sheet 1 is a backing plate 3. This plate entirely covers the rear face of the sheet and is visible through the stencil openings. A glass plate 4 is placed over the front face of sheet 1 and covers its entire area including the stencil openings. The front and back plates are held in close contact with the opposite faces of the stencil plate by a frame 5 which extends around their edges.

The material and color of the opaque stencil sheet 1 and of the backing plate 3 are chosen to produce a desired effect. It has been found in practice that a very beautiful effect is obtained by the use of a bronze paper stencil in combination with a plate 3 of white material such as white glass or porcelain. This plate, appearing through the stencil openings, contrasts strikingly with the bronze field. The effect produced by this choice of materials and colors is indicated in Fig. 1 of the drawings. The plate 3 may be transparent, opaque, or slightly translucent, depending upon the effect desired.

The glass front plate 4 is formed with a smooth rear face 6 which closely contacts the sheet 1. The front face of the plate is made slightly rough over its entire area as at 7. This roughness is in the form of small raised irregularities or bosses as indicated in Fig. 3 and in the sectional views. As shown in Fig. 4, the irregularities or bosses are of very slight height; are smooth and somewhat flattened; and are separated by irregular flat surfaces. The areas of the bosses and of the flat surfaces between them are large in comparison with the height of the bosses. A roughened surface of this character causes the required amount of light diffusion without materially reducing the transparency of the glass. In Fig. 3 the bosses are represented as appearing distinctly outlined upon the face of the plate in order to show their form and distribution. Actually the presence of the bosses is only faintly suggested when the plate is viewed. The roughened surface of the plate is preferably produced by covering the surface of the plate with very small pebbles irregular as to shape and size and then flowing hydrofluoric acid between the pebbles. Where the pebbles rest the surface is protected from the acid, and only sufficient acid is used to cover the pebbles around their lower portions. The pebbles and the acid are allowed to remain on the glass sheet a predetermined time and are then washed off. This produces infinitesimal raised irregularities which are comparatively smooth and flat on top and separated by depressed substantially flat irregular areas. The areas of the raised irregularities will vary with the size of the pebbles, the larger pebbles producing flat-topped irregularities of comparatively large area and the smaller pebbles producing irregularities of smaller area. Surrounding all of the irreguarities are slightly depressed portions. The height of the irregularities is infinitesimal and the areas are large compared to their height. These irregularities do not materially reduce the transparency of the glass when the glass is directly in contact with the stencil sheet.

The front surface of the glass plate is

roughened for the purpose of creating a perfect illusion that the sign characters and their surrounding field are brought forward flush with the front face of the glass, so that while the glass gives a finished and distinctive appearance to the sign, its presence is not betrayed.

The refracting effect of the glass upon the light rays which pass from the stencil sheet 1 out through the plate tends to create the illusion that said sheet has been advanced to the front face of the plate. The rough surface 7 of the plate destroys the luster of the glass. This luster is unnatural to the sign sheet 1 back of the plate and it would therefore betray the presence of the glass extending over it. The rough surface also prevents the forming of specular reflections of objects located in front of the sign. The presence of these reflections would cause the glass plate to appear as a mirror and tend to mask the sign characters and their surrounding field. Another important effect of the rough surface is the masking of grains of dust or smears upon the front face of the plate. These are very conspicuous upon a smooth, polished surface and would therefore give away the presence of the forwardly offset face of the glass if the plate were not roughened. The small bosses tend to render the dirt invisible or inconspicuous so that it will not betray the presence of the glass. The bosses themselves, when visible at all, do not appear to be forwardly offset from the sign characters, owing to the fact that they are distributed over the entire area of the surface. The light-diffusing effect of the bosses, in addition, tends to break up the small shadows cast upon the back plate 3 by the edges of the sign sheet 1 which outline the stencil openings. The bosses tend to slightly shade the areas of the characters outlined upon the back plate 3 by the stencil and thus mask or break up the shadows around the edges of the characters. They also, by their light-diffusing effect, mask the thickness of the sheet 1 around the edges of the characters so that the objectionable stencil effect is destroyed.

The effect produced by the particular sign described is that of a bronze plate provided with flush, inlaid, white characters. The characters and their surrounding field appear to occupy the position of the front face of the glass, and any slight roughness suggested by the embossed surface, when viewed at certain angles, appears to be directly upon the surface of the bronze plate. The sheet 1 is preferably of dark color as it has been found that a dark color at the rear of the glass plate tends to mask the small shadows cast upon the character field by the embossed surface.

The embossed surface is adapted to produce the results set forth and still admit ample light to render the sign characters distinctly visible by solely the light which they receive from the front through the glass plate. The roughness of the surface is not sufficiently fine or close to convey the suggestion of ground glass, and the reduction in the transparency of the glass is very slight.

In Fig. 5 is shown a slight modification of the invention. A character 8 is shown as mounted upon the front face of an opaque field sheet 9 and in contact with the glass plate. This character may be applied to the sheet 9 in any suitable or desired manner as by painting or electroplating it thereon, or by forming it of a separate sheet of material and pasting it in place.

In Fig. 5 is shown another modification, wherein a character is defined upon a field sheet 10 by forming a surrounding field upon the sheet in any suitable manner as by painting or electro-plating.

The invention is obviously susceptible of many modifications to produce different sign effects. I, therefore, do not wish to be limited to the precise structures and arrangements shown and described except as defined in the appended claims.

What I claim is:

1. A sign comprising a colored opaque stencil sheet defining a sign character; a backing plate of lighter color than the stencil sheet disposed against the rear face of said sheet and exposed through the stencil; and a glass plate disposed over the front face of said stencil sheet with its back face in contact therewith and formed smooth and clear at its back face and at its front face with a multiplicity of irregularly spaced raised irregularities extending over the character and its field and separated by depressed irregular areas upon said front face, the said raised irregularities being of infinitesimal height, smooth and substantially flat on top, of large area compared to their height, and substantially indiscernible individually, whereby said irregularly embossed face will admit sufficient light from the front to render the field and character distinctly visible and will reduce the luster of the glass plate and cause the character and field to appear substantially at the front face thereof.

2. A sign comprising a stencil sheet defining a sign character; a backing plate disposed against the rear face of said stencil sheet and exposed through the stencil; and a clear transparent glass plate disposed over the front face of said stencil sheet and in direct contact therewith and formed smooth and clear at one of its faces and at its other face with a multiplicity of raised irregularities extending over the character and its field, the said irregularities being of infinitesimal height, smooth and clear and substantially flat on top, of large area compared to

their height, and substantially indiscernible individually, whereby said irregularities will admit sufficient light from the front to render the field and character distinctly visible and will reduce the luster of the front of the glass plate and cause the character and field to appear substantially at the said front face.

3. A sign comprising means forming a sign character and a surrounding field; and a clear transparent glass plate disposed over the front face of said sign means and in direct contact therewith and formed smooth and clear at its back face and at its front face with a multiplicity of irregularly spaced minute irregularities of infinitesimal height and separated by substantially flat depressed irregular areas, said raised irregularities being of large area compared to their height, and substantially indiscernible individually, whereby said irregularities will admit sufficient light from the front to render the field and character distinctly visible, and will reduce the luster of the front of the glass plate and cause the character and field to appear substantially at the said front face.

4. A sign comprising a stencil sheet defining a sign character; a backing plate disposed against the rear face of said stencil sheet and exposed through the stencil; and a clear transparent glass plate disposed over the front face of said stencil sheet and in direct contact therewith and formed at one of its faces with a multiplicity of raised irregularities extending over the character and its field, the said irregularities being of infinitesimal height, smooth and clear and substantially flat on top, of large area compared to their height, and substantially indiscernible individually, whereby said irregularities will admit sufficient light from the front to render the field and character distinctly visible and will reduce the luster of the front of the glass plate and slightly break up the lines of the stencil and destroy the effect of the shadows around the edges of said characters.

5. A sign comprising a thin stencil sheet defining a sign character and a field; a backing plate disposed against the rear face of said stencil sheet and exposed through the stencil; and a clear transparent glass plate disposed over the front face of said stencil sheet and in direct contact therewith and formed at one of its faces with a multiplicity of raised irregularities extending over the character and its field, the said irregularities being of infinitesimal height, smooth and clear and of large area compared to their height, and substantially indiscernible individually, whereby said irregularities will admit sufficient light from the front to render the field and character distinctly visible and break up the minute shadows around the edges of the cut-out character and soften or slightly blur the cut line of the stencil.

6. A sign comprising an opaque stencil sheet defining a sign character; a white translucent backing plate disposed against the rear face of the sheet and exposed through the stencil opening; and a clear transparent glass plate disposed over the front face of the stencil sheet and in direct contact therewith and formed at its front face with a multiplicity of irregularly spaced minute irregularities of infinitesimal height and of large area compared to their height and separated by substantially flat depressed irregular areas, said raised irregularities being substantially indiscernible individually, whereby said irregularities will admit sufficient light from the front to render the stencil field and character distinctly visible, and will reduce the luster of the front of the glass plate and break up the shadows around the edges of the cut-out character and cause the character and field to appear substantially at the said front face.

7. A sign comprising means forming a sign character having thin edges and a surrounding field; and a clear transparent glass plate disposed over the front face of said sign means and in direct contact therewith and formed at one of its faces with a multiplicity of irregularly spaced minute irregularities of infinitesimal height and of large area compared to their height and separated by substantially flat depressed irregular areas, said raised irregularities being substantially indiscernible individually, whereby said irregularities will admit sufficient light from the front to render the field and character distinctly visible and break up the minute shadows around the edges of the character and cause the character and field to appear substantially at the said front face.

8. A sign comprising a flat sign character and a flat surrounding field; and a plate of transparent glass disposed over the front face of said sign means in direct contact therewith and formed at its front face with a multiplicity of small, spaced, smooth areas extending over the character and field and displaced, in the direction of the glass thickness, an infinitesimal distance from the surrounding surface of said face, the size of each area being great in comparison with its displacement from said surrounding surface and the multiplicity of areas being substantially indiscernible individually, whereby said areas will admit sufficient light from the front to render the field and character distinctly visible and will reduce the luster of the front face of the glass plate and cause the character and field to appear substantially at said face.

9. A sign comprising an opaque stencil

sheet defining a sign character; a white translucent backing plate disposed against the rear face of the sheet and exposed through the stencil opening; and a plate of transparent glass disposed over the front face of said sign means in direct contact therewith and formed at its front face with a multiplicity of small, spaced, smooth areas extending over the character and field and displaced, in the direction of the glass thickness, an infinitesimal distance from the surrounding surface of said face, the size of each area being great in comparison with its displacement from said surrounding surface and the multiplicity of areas being substantially indiscernible individually, whereby said areas will admit sufficient light from the front to render the field and character distinctly visible and will reduce the luster of the front face of the glass plate, break up the shadows around the edges of the cut-out character, and cause the character and field to appear substantially at said face.

In testimony whereof I hereunto affix my signature.

VICTOR WEIDNER.