May 20, 1924. 1,494,761

R. A. TIBBS, JR

ILLUMINATED SIGN

Filed Sept. 13, 1920

Fig 1

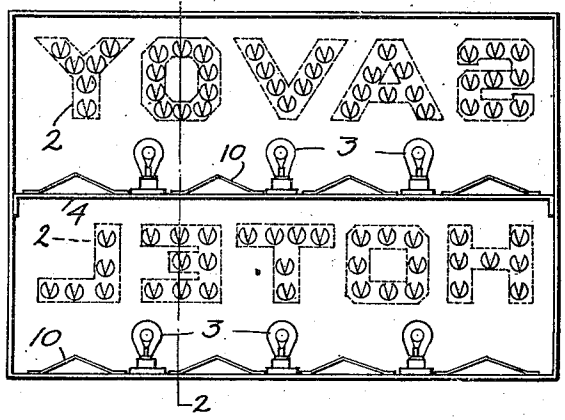


Fig 2

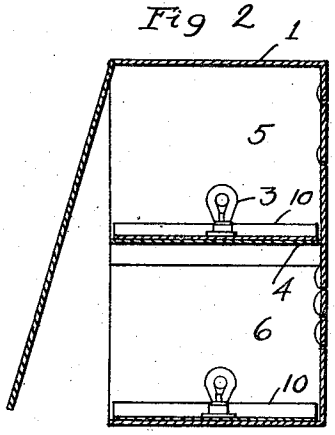


Fig 6

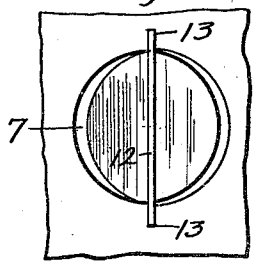


Fig 7

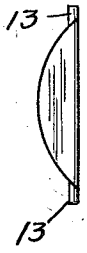


Fig 8

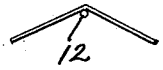


Fig 4

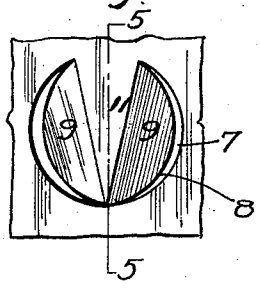


Fig 5

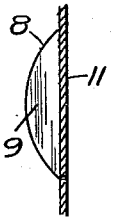


Fig 9

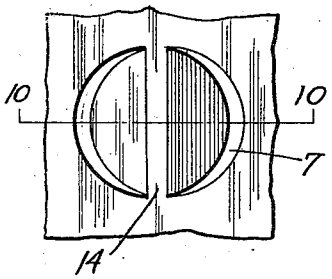


Fig 10

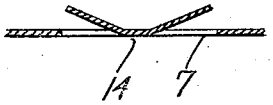
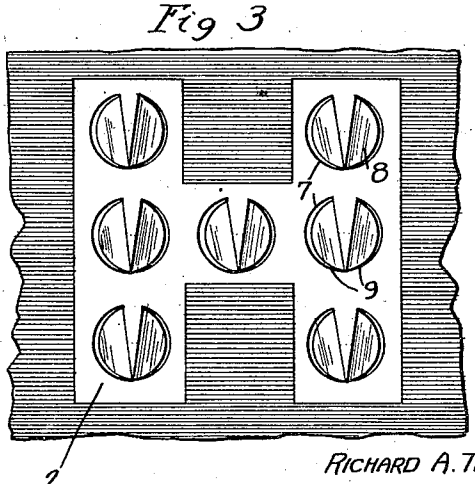


Fig 3



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UNITED STATES PATENT OFFICE.

RICHARD A. TIBBS, JR., OF BUFFALO, NEW YORK.

ILLUMINATED SIGN.

Application filed September 13, 1920. Serial No. 410,051.

To all whom it may concern:

Be it known that I, RICHARD A. TIBBS, Jr., a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Illuminated Signs, of which the following is a specification.

This invention relates to improvements in illuminated signs of the general type wherein the lamps are enclosed in a hollow box-like body having a wall, or two opposite walls, accordingly as the sign may be single-face or double-face, provided with apertures arranged in somewhat close association and in considerable number in the outline of the letter, character or device to be displayed, and with reflecting projections coinciding with the apertures and which intercept the rays of the lamp and deflect them through the apertures. The objections to known constructions of this type are the weakness of the connections between the projections and the wall of the sign, and the uneven distribution and reflection of the light rays resulting in a "spotted" effect, there being pronounced differences in the intensity of the light in different parts of the sign and even in different parts of the same character or letter. The principal objects of the invention are to overcome the objections above stated, to provide reflecting projections which shall have much stronger connection with the wall of the sign and shall uniformly and more effectively intercept the rays from the enclosed lamps and reflect them through the apertures, and to provide a lamp structure which shall give uniform and greatly superior lighting and display effects and may be economically produced, maintained and operated.

The invention consists in improvements in the form of the reflecting projections, their relation to, and connection with, the wall of the sign, and also in novel details of the general sign structure.

A sign in which the features of the invention are incorporated is illustrated in the accompanying drawings wherein:

Figure 1 is a longitudinal sectional view, showing the rear or inner face of a side wall which bears the characters to be displayed.

Figure 2 is a cross-section on the line 2—2 of Figure 1.

Figure 3 is a front elevation of a portion of an outer face of the sign, showing one of the characters to be displayed.

Figure 4 is a detail elevation of one of the light reflecting projections.

Figure 5 is a section on the line 5—5 of Figure 4.

Figure 6 is a detail rear or inner face view showing an alternative form of reflecting projections.

Figure 7 is a side view and Figure 8 a plan view thereof.

Figure 9 is a detail elevation of another alternative form of light reflecting projections.

Figure 10 is a section on the line 10—10 of Figure 9.

Similar characters of reference designate corresponding parts throughout the several views.

The sign box or casing 1 may be of any suitable construction and may have the characters to be displayed arranged on one wall, as shown, or on two opposite walls if a double-face sign be desired. The characters to be displayed may, if desired, be suitably produced on the wall or face of the sign; this is not necessary but it is to be preferred. As shown, said characters, as 2, are painted on the outer face of the sign in a color which contrasts suitably with the general color of the sign box. The sign may have as many rows or tiers of characters as circumstances may require and, generally speaking, it will be preferred to provide a group of lamps 3 for each row of characters. For example the sign disclosed has an upper and a lower row of characters and an upper and a lower group of lamps 3, the lamps of each group being arranged at regular intervals which are advantageous with respect to the adjacent characters. Where the sign characters are in two or more rows it is preferred to divide the casing into optically independent compartments; this is effected in the construction disclosed by a horizontal partition 4 which provides an upper compartment 5 and a lower compartment 6. The lamps 3 are mounted on the bottoms of the respective compartments, that is to say on the partition 4 and on the bottom of the sign casing.

The rays from the lamps 3 are emitted through the apertures 7 which are arranged in somewhat close association, and in consid-

erable number, in the outline of the character to be displayed and, as compared with said character, are relatively small; where, as shown, the characters are painted on the sign, the apertures 7 are, of course, arranged within the painted areas. The light rays are deflected through the apertures 7 by reflecting projections 8. These, according to the invention, are essentially characterized by oppositely angular, symmetrically arranged wings 9 which project at a suitable angle, preferably an angle of fifteen degrees, more or less, into the sign casing and intercept the rays from the lamps 3, each of the wings 9 occupying nearly, or substantially, half of the area of the projection 8. The wings 9 are vertically arranged and insure that each projection shall intercept the rays from the lamps at both sides thereof whereby, the lamps being arranged at advantageous intervals, the light rays are reflected symmetrically and with substantially uniform intensity from virtually the entire area of the projection.

The advantages incident to the provision of the wings 9 will be realized in fullest measure by the provision of a series of reflectors 10 just below the lamps 3, these reflectors being arranged to project the light rays laterally upward and evenly throughout the height or depth of the casing or compartment whereby the rays will be deflected substantially directly, and with substantially uniform effect, to all the projections 8. By virtue of the reflectors 10 in connection with the structural form and arrangement of the projections 8 there results a brilliant, clearly defined and substantially uniform display of the characters of the sign.

The projections 8 may be fashioned and connected to the sign in different ways and their wings 9 may be given any suitable reflecting finish. In Figures 1 to 5 said projections are punched from the wall of the sign and have a central relatively narrow V-shaped or inverted triangular portion 11 which constitutes an integral connection with said wall. The portion 11 which is preferably flush with the wall provides a connection of strong character and ample extent, without substantially reducing the reflecting area of the wings 9.

Figures 6, 7 and 8 illustrate an alternative construction wherein the reflectors 8 are originally separate from the wall of the sign and have a central vertical bend forming a division between the wings 9; in this form a securing wire 12 is welded to the projection within the bend and has projecting attachment terminals 13 which are welded to the wall of the sign.

Figures 9 and 10 illustrate another alternative construction in which the wings 9 are struck up from a narrow vertical diametrical strip 14 which is integrally joined at its upper and lower ends to the wall of the sign.

One of the side walls of the casing 1 is movably mounted, preferably being hinged along its upper edge in order to provide convenient access to the interior of the casing for any necessary purpose such as the replacement of the lamps or the cleaning of the reflectors 10.

The projections 8 are in all cases strongly connected to the lamp casing, arranged to intercept the rays of light at a lateral angle and in equal degree from both sides thereof, and have bends along lines of maximum extent, or nearly so, whereby the provision of the wings 9 is without weakening effect.

Having fully described my invention I claim:

A sign having, in combination, a casing, lamps enclosed therein, and arranged adjacent the bottom thereof, a vertical wall of the casing having apertures arranged in somewhat close association in the outline of the character to be displayed and reflecting projections coinciding with said apertures, said projections being secured to said wall and each being formed with oppositely angular vertical wings projecting into said casing to intercept the rays from the lamps at lateral angles and reflect them through the apertures, and reflectors below the lamps for reflecting their rays directly to said projections.

In testimony whereof I affix my signature.

RICHARD A. TIBBS, JR.