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H. HOTCHNER

2,336,788

LUMINOUS TUBE SIGN

Filed Aug. 22, 1939

Fig. 1.

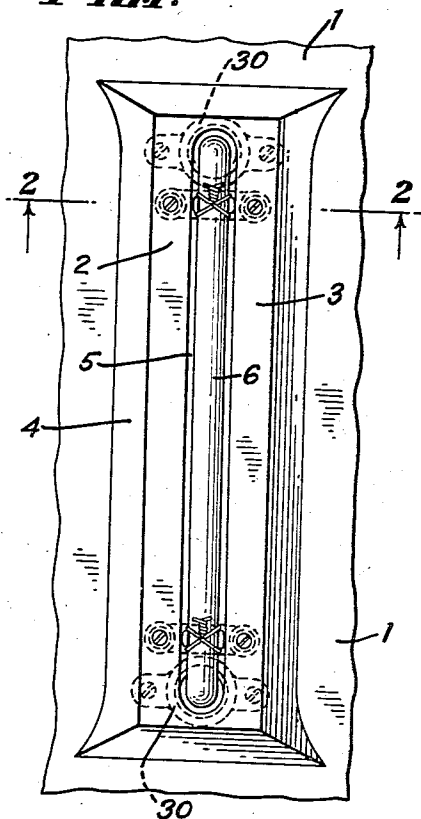


Fig. 2.

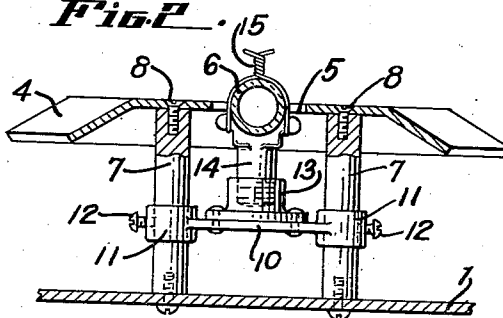


Fig. 3.

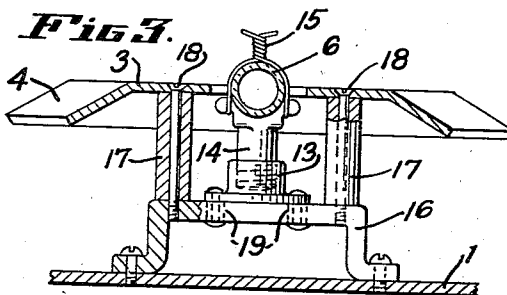


Fig. 4.

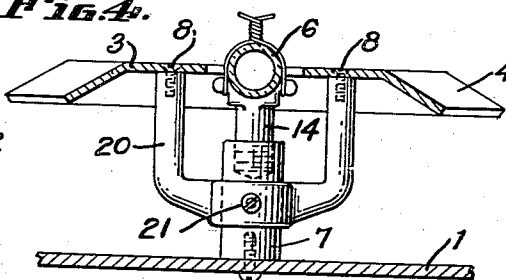


Fig. 5.

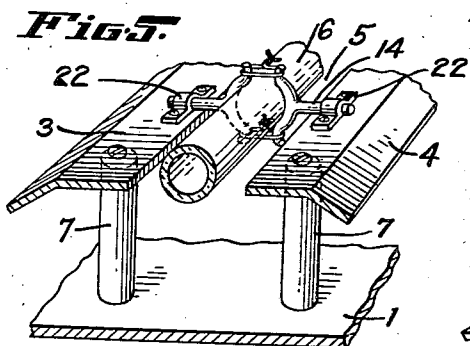


Fig. 6.

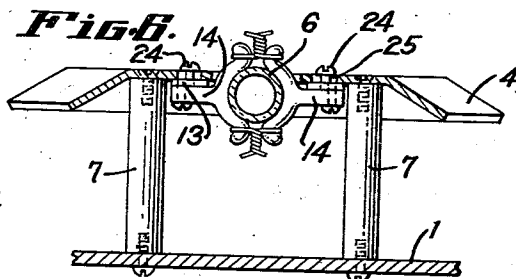
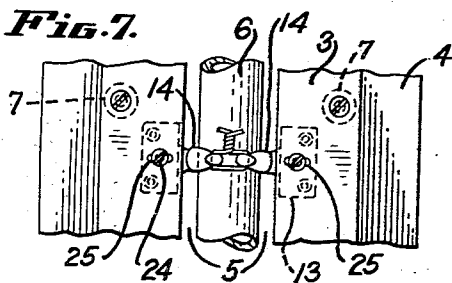


Fig. 7.



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LUMINOUS TUBE SIGN

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Original application March 18, 1937, Serial No. 131,566. Divided and this application August 22, 1939, Serial No. 291,352

3 Claims. (Cl. 40—130)

Our invention relates to luminous tube signs, and more particularly to that type of sign wherein a luminous tube is placed in a slot in a character raised from the face of the sign or background area.

The present invention is an improvement on the Hotchner Patent No. 2,072,986, issued March 9, 1937, entitled "Luminous tube sign," and is a division of our application, Serial No. 131,566, filed March 18, 1937, now Patent No. 2,172,384 of September 12, 1939.

The main object of our invention is to provide means for supporting the letter and the tube from a sign face or background area in such a manner that they may be adjusted relative to each other.

Among other objects of our invention are: To provide a means for adjustably supporting a luminous tube in a slot; to provide a means for supporting a luminous tube in adjustable relation to the edges of a slot in a character raised from a sign face or background area; and to provide a simple and easily adjustable combination of raised character and luminous tube to be used as a sign.

Other objects of our invention will be apparent or will be specifically pointed out in the description forming a part of this specification, but we do not limit ourselves to the embodiment of the invention herein described, as various forms may be adopted within the scope of the claims.

In the patent referred to directly above, Hotchner shows a character raised from the sign face and supported in spaced relationship therefrom, the character having a slot therein following the contour of the character. In the slot, which is wider than the tube, is located a luminous tube, maintained in position by a separate set of supports extending from the sign face. Thus Hotchner uses two separate and distinct sets of supports, one set for the character and one set for the tube. Because of these separate supports either the tube or the character may be removed from the sign face without disturbing the positioning of the other member of the combination.

The present invention, broadly, deals with a tube and character combination using a single set of supports. In certain of the embodiments of the invention either the character or the tube is supported directly from the sign face, whereas the other member of the combination may be supported, not from the sign face directly, but through the medium of the supports already provided. Or, in another embodiment of the invention, the character may be supported directly from the sign face and the tube supported in the slot by supports extending from the letter or character.

The main feature common to both of these embodiments is that the tube may be adjusted in

the slot so that it may be spaced properly from the edges thereof. In this regard it is obvious that glass tubing cannot be bent or formed into characters with the precision that characterizes metal working, and as a consequence we have found that in order to properly position a tube in a slotted character, the slot should be made greater in width than the diameter of the tubing. We have also found, however, that even when such a provision is made, it is highly advantageous to provide adjustable means whereby the tubing may be adjusted relative to the edges of the slot both as to height from the sign face, and laterally.

The details of our invention may be more fully understood by reference to the preferred embodiment shown in the drawing.

Fig. 1 is a top plan view of a slotted, raised character, in this case the letter I, there being a luminous tube positioned in the slot.

Fig. 2 is a cross sectional view taken as indicated by the line 2—2 in Fig. 1.

Fig. 3 is a cross sectional view showing another means for adjustably supporting the letter and tube.

Fig. 4 is a cross sectional view showing still another method of supporting the combination.

Fig. 5 is a perspective view showing one way in which the tube may be supported directly from the character.

Fig. 6 is a cross sectional view showing another way of supporting the tube from the character.

Fig. 7 is a plan view of a portion of the character and tube combination shown in Fig. 6.

Referring directly to Figs. 1 and 2, a sign face 1 is provided with a raised character 2, in this case the letter I, having a letter face 3, a downwardly extending edge flange 4, and a central slot 5. In the slot 5 is positioned a luminous tube 6.

The character is supported directly from the sign face or background area 1 by a plurality of upright standards 7 fastened to the sign face at one end and to the character at the other end, the character being removable from the standards by the removal of character screws 8. Thus the position of the character from the sign face is fixed with relation to the sign face, but the character as a whole is removable.

In this regard we wish to point out that the exact sectional shape of the character is no part of the present invention, and the section of the character face 3 may be of any contour desired, or even a perfectly flat sheet of metal or other material may be used to make up the character. We do, however, desire that there be a space between the edges of the character and the sign face in order that light from the tube may be projected against the background of the sign face and be reflected out from around the edges of

the letter to provide a silhouette letter, all as explained in the above-mentioned prior patent of Hotchner.

In the particular embodiment shown in Figs. 1 and 2, the tube itself is supported on a tube bracket 10 having bearings 11 sliding on standards 7, and maintained in position by set screws 12. Mounted on bracket 10 is a support base 13 carrying an insulating tube support 14, preferably of glass, and formed to receive the tube as is well known in the art. The tube is fastened to the support by tie wire 15. Thus it will be seen that the tube 6 is adjustable with relation to the edges of the slot 5 through the medium of the tube support, and that the tube is supported, not directly from the sign face, but from the upright standards 7.

Fig. 3 shows a slight modification of the support, wherein a U-shaped support bracket 16 is fastened rigidly to the sign face 1 and this U-shaped support bracket supports both the tube and the character. Here the character is supported from the bracket by the use of sleeves 17 and long bolts 18 passing through the sleeves to engage the bracket 16. The vertical adjustment here is made by varying the length of the sleeves 17, whereas a lateral adjustment of the tube 16 may be changed by varying the position of the mounting of the insulating support 14 on the bracket 16 through the medium of free holes 19 in the latter bracket.

In the embodiment shown in Fig. 4, a single upright standard 7 is provided at each support point and the tube 6 is supported directly from the top of this upright standard 7, the insulating support 14 engaging the top of this standard.

The character is supported directly by a U-shaped character bracket 20, this bracket bearing on the upright standard 7 and vertically movable thereon and fixed in position by set screw 21. Here no lateral adjustment has been shown, but this may be easily provided by utilizing a slot or a free hole for the head of character screws 3.

Thus, the embodiments shown in Figs. 1 to 4 inclusive show branched supports, certain branches comprising the tube, other branches supporting the character.

In the embodiment shown in Figs. 5, 6 and 7, only character supports 7 are utilized, and the tube 6 is supported directly from the character but in such a manner that its position may be varied laterally with respect to the edges of the slot 5.

In Fig. 5 the insulating supports 14 are positioned on the character face 3 opposite each other, and extend toward the tube. They are maintained on the character face by means of insulator brackets 22, these insulator brackets having a surface bearing slightly smaller than the insulators themselves so that when they are tightened against the character face they tightly engage the insulating supports. As the insulators are usually made of glass, a small piece of leather or other soft material may be placed between the bracket and the glass to prevent breakage.

In Figs. 6 and 7 we have shown another embodiment wherein the combination is supported only on standards 7, but in this case the insulating tube supports 14 are placed beneath the character face where they cannot be seen, and the support brackets 13, attached to the tube insulators, are held to the character by bracket bolts 24 extending through the character face 75

through slots 25, whereby the insulators may be moved toward each other and the whole tube moved laterally with relation to the character edges and then the bracket bolts tightened to fix the tube in the position desired.

Thus it will be seen that we have provided means for supporting the character and means for supporting the tubing in such a manner that the tubing may be adjusted in the slot, either laterally, vertically, or both, thus assuring that even though the tube does not exactly follow the contour of the edges of the slot, it can be positioned in the most advantageous position to give the results desired.

Furthermore, we prefer, as outlined in the above-mentioned patent to Hotchner, to imbed the terminals of the terminal electrodes of the tube below the sign face in an insulating receptacle 30, shown in dotted lines in Fig. 1. If, then, the electrode ends of the tube are made sufficiently small in diameter, to be less than the width of the slot, it is obvious that the tube may be removed from the character without disturbing the latter, or the character may be removed from the sign without disturbing the tube, in the embodiments shown in Figs. 1 to 4 inclusive, whereas in the embodiments illustrated by Figs. 5, 6 and 7 the tube and character may be removed as a unit or the tube removed, leaving the character in place. As it is the tube that requires the more frequent service, the removal in all embodiments of the tube alone is desirable from a service point of view.

We claim:

1. In combination, a background area, a slotted character, means for removably supporting said character over said area and spaced therefrom, a luminous tube positioned to direct light through said slot onto said area, and formed to follow the slot without touching the slot defining edges, and aligned insulating supports extending from opposed spaced points along the slot defining edges only and engaging said tube to form the sole support of said tube from said slotted character, whereby said tube and character can be removed from said area as a unit.

2. In combination, a background area, a slotted character, means for removably supporting said character over said area and spaced therefrom, a luminous tube positioned to direct light through said slot onto said area, and formed to follow the slot without touching the slot defining edges, and insulating supports for said luminous tube extending from opposed spaced points along the slot defining edges only, said supports extending along a common line substantially perpendicular to the edge line at point of departure therefrom, whereby said tube and character can be removed from said area as a unit.

3. In combination, a background area, a slotted character, means for removably supporting said character over said area and spaced therefrom, a luminous tube positioned to direct light through said slot onto said area, and formed to follow the slot without touching the slot defining edges, and spaced transparent insulating and aligned supports for said luminous tube extending from the opposite slot defining edges only and engaging the sides of said tube for positioning said tube with relation to the slot defining edges, whereby said tube and character can be removed from said area as a unit.

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