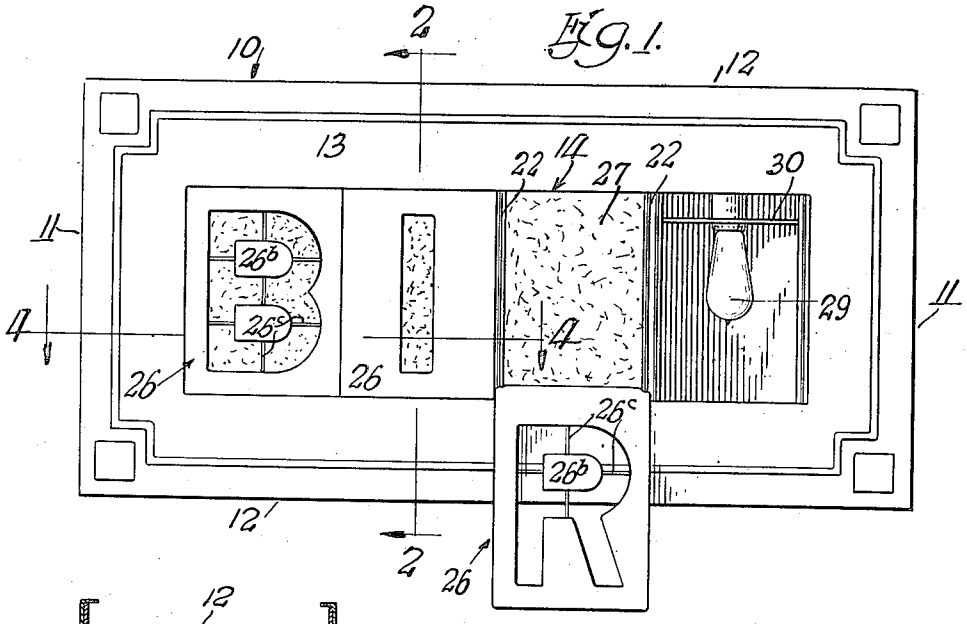
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J. FRIIS ET AL

ELECTRICALLY ILLUMINATED SIGN

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Fig. 1.



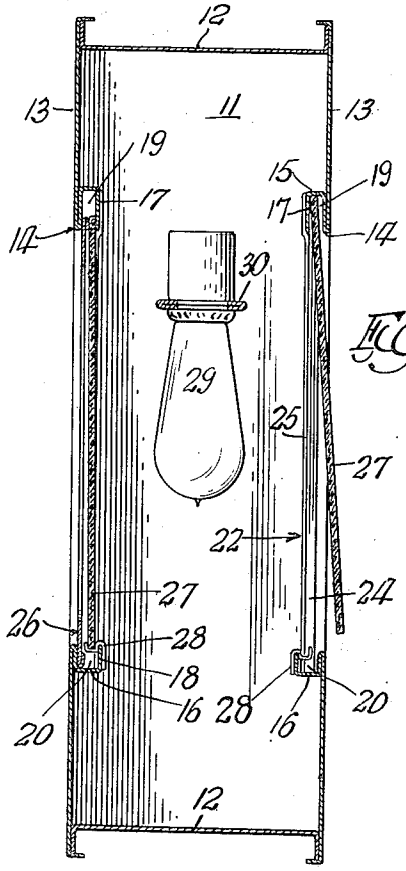
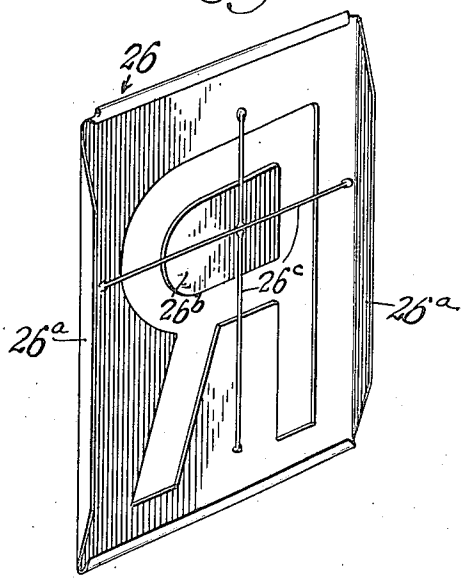


Fig. 2.

Fig. 3.



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Fig. 4.

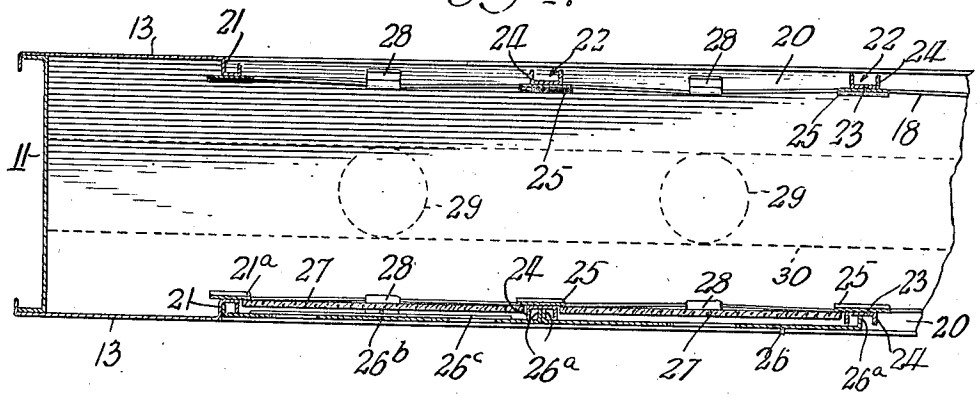


Fig. 5.

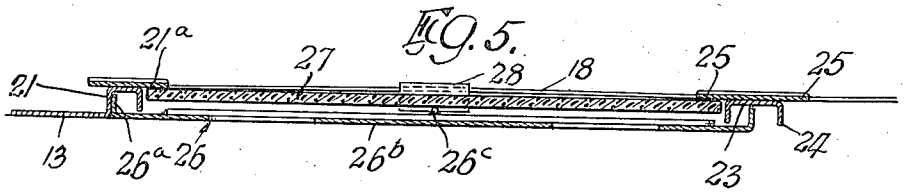


Fig. 7.

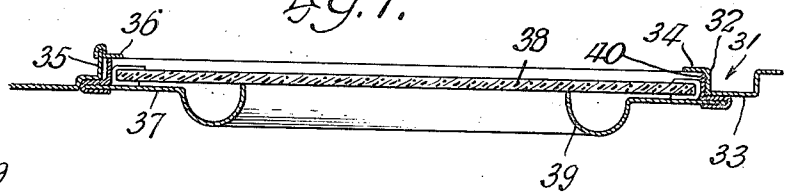
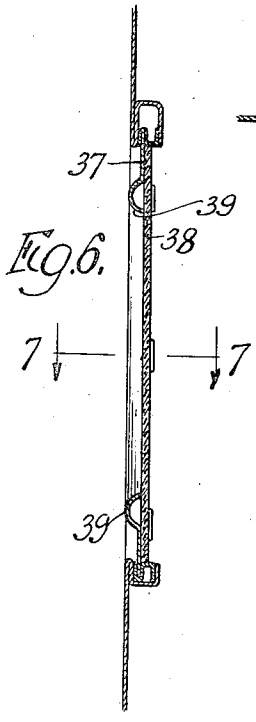


Fig. 6.



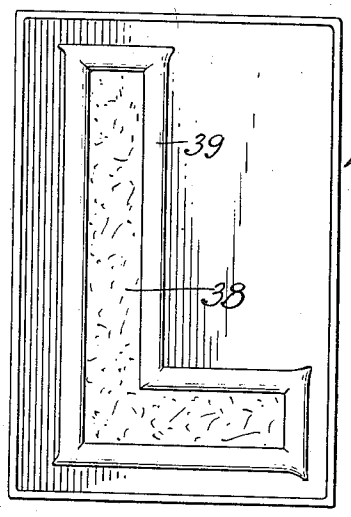


Fig. 8.

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UNITED STATES PATENT OFFICE.

JOHN FRIIS AND CHARLES B. EHNBORN, OF CHICAGO, ILLINOIS, ASSIGNORS TO THOS. CUSACK COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

ELECTRICALLY-ILLUMINATED SIGN.

Application filed May 4, 1923. Serial No. 636,547.

To all whom it may concern:

Be it known that we, JOHN FRIIS and CHARLES B. EHNBORN, citizens of the United States, and residents of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Electrically-Illuminated Signs; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in electrically illuminated signs and consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The object of the invention is to produce a sign of the kind with separate glass sign character plates and separate metal stencil plates, one for each character, with the glass plates and the metal stencil plates independently supported in the sign. The sign character glass plates are all of the same dimensions as are also the metal stencil plates so that the position of the sign characters in the sign may be interchanged and where the sign character plates are flat and not raised, the sign characters may be changed or interchanged by merely changing or interchanging the metal stencil plates and without disturbing the glass plates.

Another object of the invention is to provide in a sign having these characteristics, simple and efficient means for sealing the sign body at the edges of the aforesaid plates against the escape of light to detract from the appearance of the sign when illuminated, and this without interfering with the easy manipulation of the metal stencil plates and glass plates.

These and other objects and advantages of the invention will appear more fully as we proceed with our specification.

In the drawings:—

Figure 1 is a view in side elevation of an electrically illuminated sign embodying our invention.

Figure 2 is a vertical sectional view on an enlarged scale through the sign shown in Figure 1, as taken on the line 2—2 thereof.

Figure 3 is a perspective view as looked at from the rear of one of the sign character plates embodying our invention.

Figure 4 is a horizontal sectional view through one end of the sign, the plane of the section being indicated by the line 4—4 of Figure 1.

Figure 5 is a fragmentary view on an enlarged scale of parts of the sign shown at the bottom of Figure 4.

Figure 6 is a vertical detail sectional view through one wall of a sign and associated sign character embodying a modified form of our invention.

Figure 7 is a horizontal sectional view on an enlarged scale through the same, as indicated by the line 7—7 of Figure 6.

Figure 8 is a view in front elevation of the sign character shown in Figures 6 and 7.

Referring now in detail to that embodiment of the invention illustrated in Figs. 1 to 5 inclusive of the accompanying drawings:—10 indicates as a whole a rectangular box-like sign body. Said sign body as shown herein, is of the "double face" kind, with advertising matter depicted on both sides thereof, for observation by the passer-by. The sign body includes end walls 11,11, top and bottom walls 12,12 and opposite side walls 13,13, each of which side walls has a rectangular elongated opening 14 therein, to receive the associated sign character.

The parts of the side walls 13 defining the longer horizontal dimension of the character openings 14 of the sign, are bent back upon themselves and then horizontally inward to provide top and bottom horizontal webs 15 and 16 respectively, which terminate in vertically disposed flanges 17 and 18 respectively, as shown in Figure 2. Said webs and flanges provide top and bottom, horizontally extending, oppositely facing channels or grooves 19 and 20 respectively, on the inner face of the side walls 13 of the sign body, the top channels being of a depth greater than that of the bottom channels. The parts of the side walls 13 defining the shorter ends of the character openings 14 of the sign are formed to provide upright, outwardly facing channels 21, 21. To said channels are secured strips, providing laterally extending flanges 21^a, 21^a which are parallel with but are spaced from said side walls 13 (see Fig. 5).

The sign character openings 14 on each side of the sign body are divided off into equal spaces or division, by means of upright division bars 22, 22 (see Figs. 1 and

4). Each division bar comprises a vertically disposed channel strip 23 with its flanges 24 directed outwardly, the web parts of the channels at the ends thereof, being secured to the top and bottom vertically disposed flanges 17 and 18 before mentioned. Secured to the back of the web of each division bar channel is a strip which projects laterally beyond the channels to provide flanges 25, 25 on each side of and at a right angle to the flanges of the channel bar strip.

Associated with each space or division in the character openings 14, 14 is a sign character, each of which consists of a sheet metal stencil plate 26 (see Fig. 3) having the usual cut out letter, symbol, etc. within its outline, and an associated sign character or backing plate 27 preferably made of translucent or milk white glass. The glass sign character plate is of a width substantially equal to the distance between the flanges 24, 24 of adjacent channels of the division bars and is of a height slightly less than the distance between the webs 15, 16 of the top and bottom channels 19 and 20. Secured to the flange 18 of each bottom channel 20 between adjacent division bars 22 are hook shaped clips 28, 28 adapted to receive and hold the bottom end of the associated glass sign character plate 27. The flange 18 is sprung slightly inward between adjacent division bars so that the channel-like support of the hook-shaped clips 28 are positioned in the vertical plane of the flanges 24 of the channels 23. To insert a glass sign character or backing plate 27 into position, the top end thereof is entered into the top channel 19 of the opening 14 until said top end engages the web 15 of said channel. This will leave the bottom edge of the backing plate in a plane above that of the bottom edge of the opening, so that said end may be pushed inwardly and then allowed to settle downwardly until it seats itself in the channel-like part of the holding clip 28. When the glass sign character plate is in this position, its lateral margins will engage against the lateral flanges 25 before mentioned, and its top marginal part will engage against the flange 17 of the top channel 19.

Each sheet metal stencil plate 26 consists of a rectangular plate of a width substantially equal to the distance between the median lines of the division bars, and, therefore, is necessarily wider than its associated glass sign character plate, there being inwardly projecting flanges 26^a, 26^a at the sides of the stencil plates, the purpose of which will appear later. Each stencil plate is of a height slightly less than the distance between the bottom edge of the character opening 14 and web 15 of the top channel 19 and is flanged at its top and bottom ends so as to stiffen the same and eliminate rough edges.

In each sign stencil plate is provided the usual letter strokes which are made by cutting out parts of the plate from within its outlines. In case of letters such as "B", "R", and others as shown in Fig. 1, the non-integral parts 26^b within the cutout strokes are supported in proper position by wires 26^c (see Fig. 3) on the rear face thereof, which wires cross each other and are secured at their ends to the plate and at their intersections to said non-integral parts by spot welding or by soldering.

After a glass sign character or backing plate has been inserted as before described, the associated stencil plate is positioned with its side flanges 26^a engaged between the side flanges of adjacent division bars after which the stencil plate is moved upwardly thereon until the top edge of said plate engages the web 15 of the top channel 19. This brings the bottom edge of the stencil plate into a plane above that of the bottom edge of the character opening 14 after which the bottom end of said stencil plate may be swung inwardly, said bottom edge passing through the sign character opening. The stencil plate 26 is then released, to settle a short distance until its bottom edge rests upon the web 16 of the bottom channel 20. Said plate cannot fall out or be accidentally dislodged from position because its top edge is engaged against the side wall of the casing just above said opening 14. To remove said stencil plate, the movement is the reverse of that just mentioned, after which the backing or glass sign character plate may be removed, when necessary, in the same manner. The combined thickness of the glass sign character plate and the stencil plate approximately equals the width of the associated top and bottom channels 19 and 20 so as to substantially fill said channels. Thus, the said plates cannot rattle under wind pressure.

The sign characters are illuminated from within the casing by means of incandescent lamps 29, 29 which depend from a longitudinal support 30 arranged in the median plane of the casing, there being a lamp positioned in the plane between each pair of division bars. Thus, the inner surfaces of the backing plates are not only illuminated directly by said lamps but are also indirectly illuminated by reflection from the surfaces of opposed backing plates. When the sign is thus illuminated, those parts of the glass sign character or backing plates exposed through the letter strokes of the stencil plates, boldly stand out in appearance and provide a sign which attracts the attention of the passerby. The front face of the stencil plates are painted to present a con-

trast in appearance to the exposed parts of the glass sign character plates so that the said letters clearly stand out in the day time. Thus, the sign possesses attraction both as a "night" and a "day" sign. When illuminated, no light can "leak" or escape through the sign in the vicinity of the division bars 22 by reason of the engagement of the glass sign character plates and the stencil plates, as before mentioned. Furthermore, by making the stencil plates removable independent of the backing plates, the stencil plates may be more readily interchanged to new positions without danger of breaking the glass sign character plates. This is important since the changes in sign characters are often made by persons not skilled in experience and should one of said stencil plates be accidentally dropped while handling or making a change, no serious damage is apt to occur. Should it be necessary to replace burned out lamps it is only necessary to remove the stencil plate and then the glass sign character or backing plate, which will give access to the interior of the sign.

In Figs. 6, 7 and 8 we have illustrated a modified form of the invention in which the glass sign character or backing plate is fixed to and is carried by the stencil plate so as to be removable therewith. In such a construction the division bar 31 (see Fig. 7) is provided by a channel 32 which includes a web 33 spaced inwardly from the plane of the front wall of the casing, which channel includes laterally extending flanges 34. That part of the front wall of the casing defining the end of the sign character opening is bent inwardly to provide a flange 35 and secured thereto is a strip which includes a lateral extension flange 36 which is arranged in the vertical plane of the flanges 34 of the division bar. 37 indicates the sign character which in this instance includes a stencil plate with the letter strokes cut through the same and with a translucent glass sign character or backing plate 38 secured thereto in any suitable manner. Those parts of each stencil plate defining the character stroke are offset outwardly to provide a semi-cylindrical hollow rib 39 about said opening which is painted or otherwise coated to contrast with the rest of said stencil plate. Secured to the side margins of the stencil plate but spaced inwardly therefrom are inwardly extending flanges 40 which engage the inwardly facing flanges 32 of the division bars. Said stencil plates are of such width that their lateral margins overlap the division bars 31 so that the escape of light at said division bars is entirely eliminated. The sign character as a whole may be easily removed as an entirety, for the purpose of interchanging them, in a manner similar to that before described.

In referring to the glass of which the letter plate is made, we have described it as "translucent". By this is meant a glass which either by reason of its own inherent character from its process of manufacture, as in the case of opal or milk white glass or the like, or by reason of some external treatment or application as by paint, is capable of diffusing the light which passes through the strokes of the letter or character and of preventing the appearance of glare spots in said strokes. Such a glass not only produces the best results for a night sign, when the sign is illuminated, but also gives the best and most brilliant effect for a day light sign.

We claim as our invention:—

1. A sign structure comprising, in combination with a sign casing wall having an elongated rectangular opening therein to receive a plurality of stencil plates a translucent glass sign character plate associated with each stencil plate, means on the inner surface of said wall along the top and bottom edges of said opening providing grooves which face each other, division bars extending transversely of said opening and arranged in the plane of said grooves, a clip fixed to said groove at the bottom edge of said opening between adjacent division bars to support a glass sign character plate which engages at its lateral margin with a part of said division bars, said glass sign character plate extending at its top end into the groove at the top edge of said wall opening, said stencil plate having lateral marginal parts which overlap said division bars to provide a light seal and being adapted to engage with its top and bottom edges in said grooves, and to be removable independent of said backing plate, and means in the sign casing for illuminating the interior thereof.

2. A sign structure comprising, in combination with a sign casing wall having an elongated rectangular opening therein adapted to receive a plurality of sign character members, division bars extending transversely of said opening and dividing the same into a plurality of spaces, one for each sign character member, each division bar comprising a channel member having a web extending parallel with the sign casing wall and having two flanges arranged at an angle to said web, the lateral margins of each sign character member overlapping the web portion of said channel member of the division bar and having flanges extending parallel with the flanges of said division bars, and means on the casing wall at the top and bottom edges of said elongated opening to removably hold said plates in position.

3. A sign structure comprising, in combination with a sign casing wall having an elongated rectangular opening therein adapted to receive a plurality of sign char-

acter members, means on the inner surface of said wall along the top and bottom edges of the said opening providing grooves which face each other, division bars extending transversely of said opening and arranged in the plane of said grooves, said bars dividing said opening into a plurality of equal spaces, one for each sign character member, each division bar comprising a channel member having a web extending parallel with the sign casing wall and having two sets of flanges arranged at a right angle to each other, the lateral margins of each sign character member overlapping the web portion of said channel member of the division bar and having flanges extending parallel with one set of flanges of said division bars, each character member being of a height greater than that of said opening and being adapted to engage with the top and bottom parts thereof so as to be removably engaged in the grooves at the top and bottom edges of said opening.

4. A sign structure comprising, in combination with a sign casing wall having an elongated rectangular opening therein adapted to receive a plurality of sign characters each of which comprises a stencil plate and a glass backing plate, division bars extending transversely of said opening and dividing the same into a plurality of spaces, one for each sign character, each division bar comprising a channel member having a web extending parallel with the sign casing wall and having two sets of flanges, with one set parallel to said web and with the other set at an angle thereto, the lateral margins of the glass backing plate overlapping and engaging the channel flanges parallel with said channel web, and the lateral margins of the stencil plate, overlapping the web portion of said channel member of the division bar and having flanges extending parallel with that set of flanges of the channel member extending at a right-angle to the web thereof, and means on the casing wall at the top and bottom edges of the elongated opening to removably hold said stencil and backing plate in position.

In testimony that we claim the foregoing as our invention, we affix our signatures in the presence of two witnesses, this first day of May, A. D. 1923.

JOHN FRIIS.
CHARLES B. EHNBORN.

Witnesses:
N. B. SULLIVAN,
T. H. ALFREDS.