March 16, 1943. B. H. ADLER 2,313,724

CHANGEABLE LETTER SIGN

Filed June 24, 1940 4 Sheets-Sheet 1

Fig. 1.

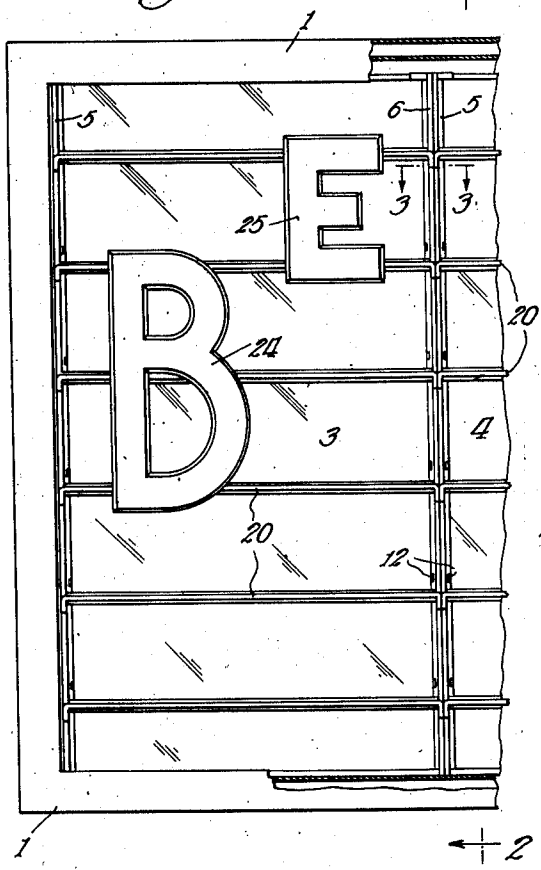


Fig. 2.

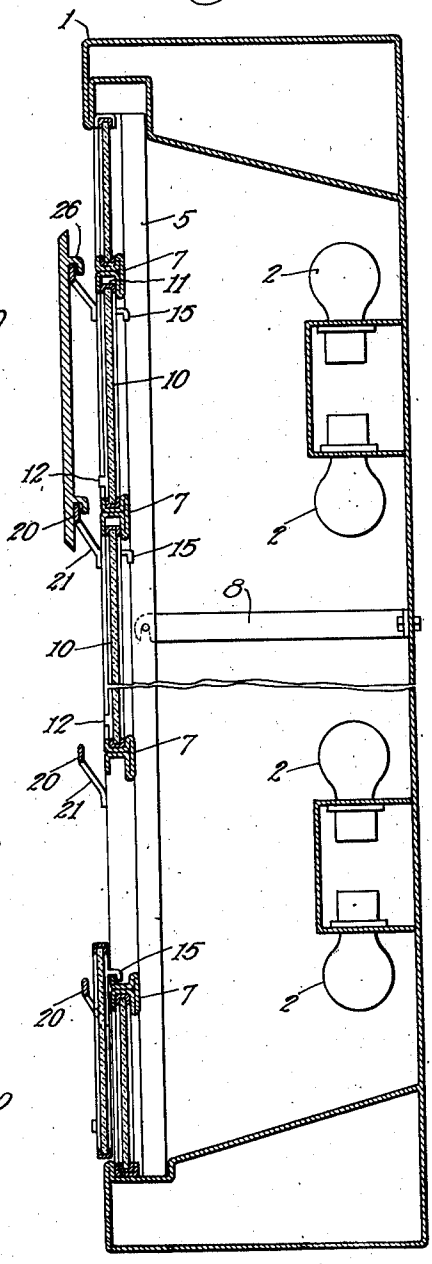
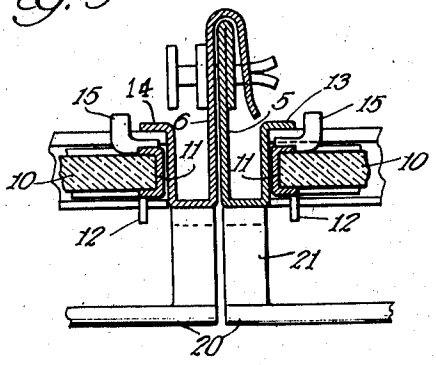


Fig. 3.



Inventor
Benjamin H. Adler
By: Jabel, Carlson, Gritzbaugh & Wells
Attys.

March 16, 1943. B. H. ADLER 2,313,724

CHANGEABLE LETTER SIGN

Filed June 24, 1940 4 Sheets-Sheet 2

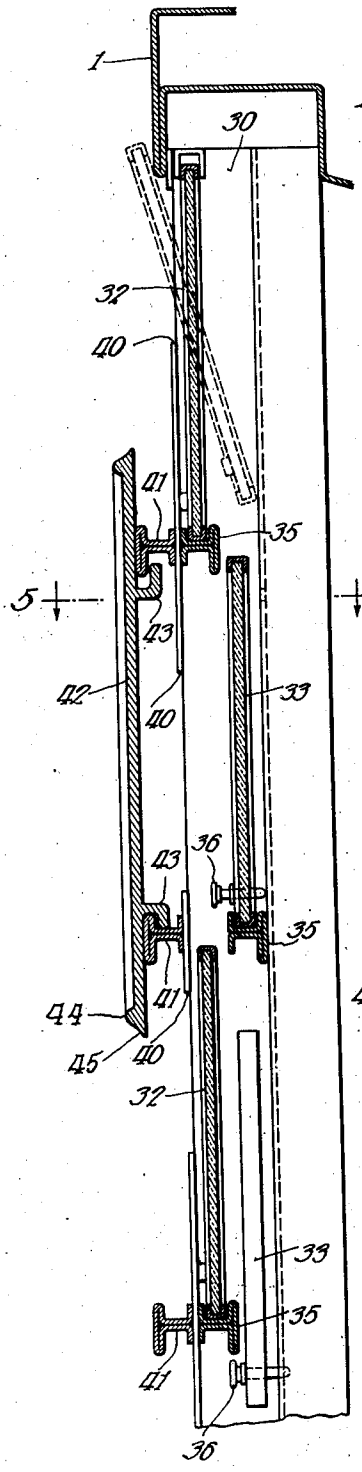


Fig. 4

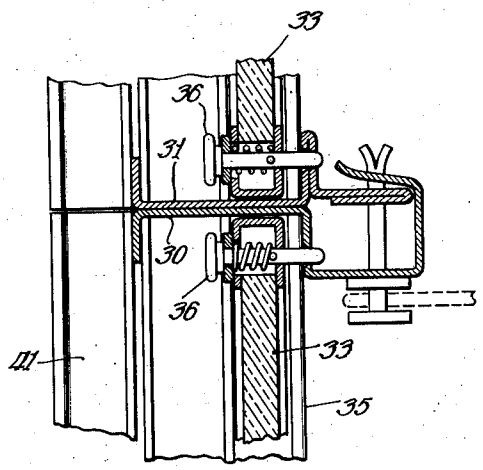


Fig. 5.

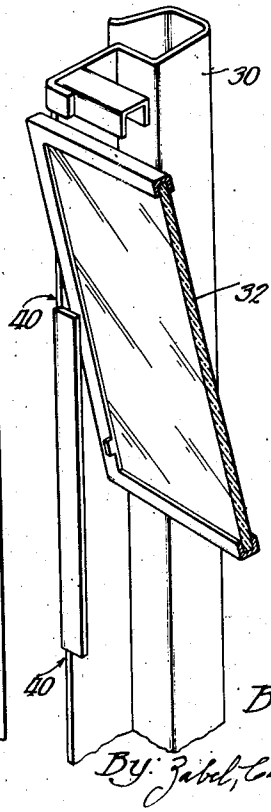


Fig. 6.

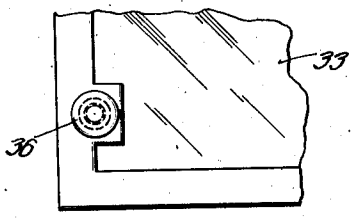


Fig. 7.

Inventor:
Benjamin H. Adler
By: Zabel, Carlson, Gritzbaugh & Wells Attys

March 16, 1943. B. H. ADLER 2,313,724

CHANGEABLE LETTER SIGN

Filed June 24, 1940 4 Sheets-Sheet 3

Fig. 8.

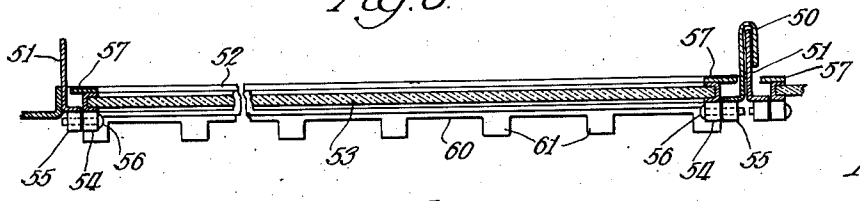


Fig. 10.

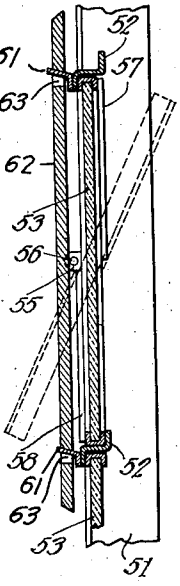


Fig. 9.

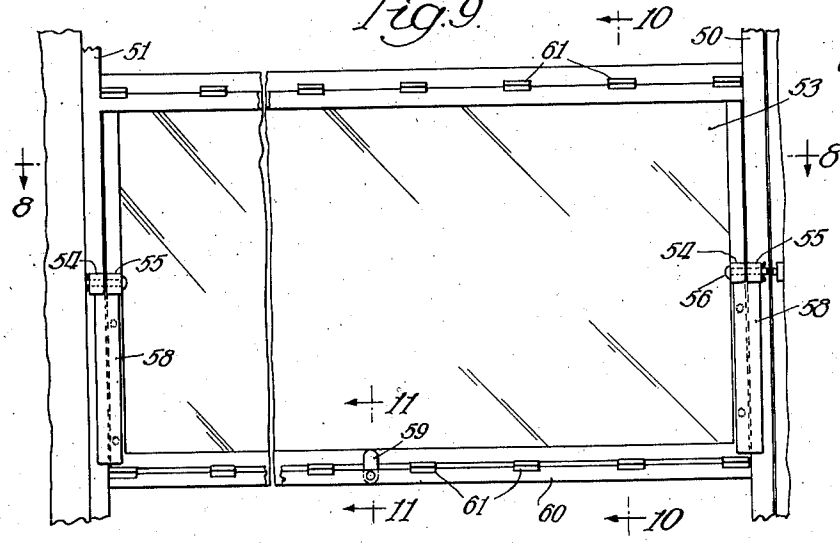


Fig. 12.

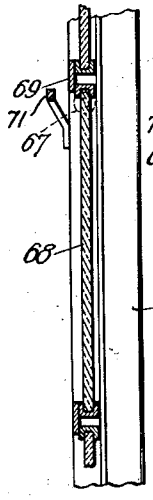


Fig. 13.

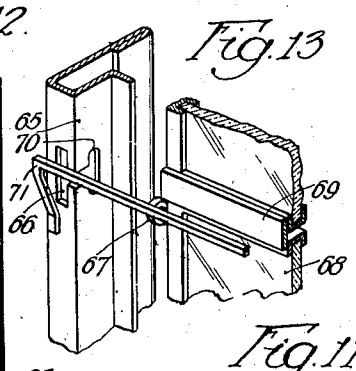


Fig. 14.

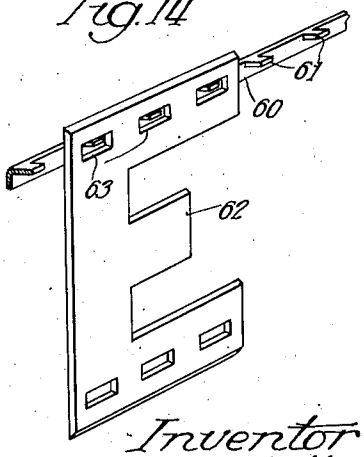
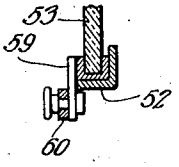


Fig. 11.



Inventor
Benjamin H. Adler

By
Zabel, Carlson, Gritzbaugh & Wells Attys

March 16, 1943. B. H. ADLER 2,313,724

CHANGEABLE LETTER SIGN

Filed June 24, 1940 4 Sheets-Sheet 4

Fig. 15

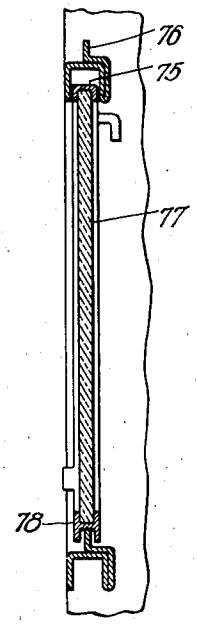


Fig. 16

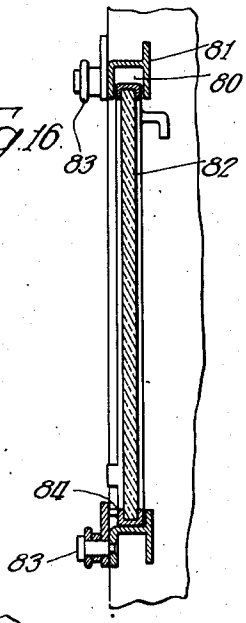


Fig. 17

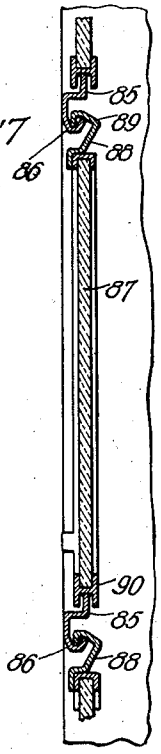


Fig. 18

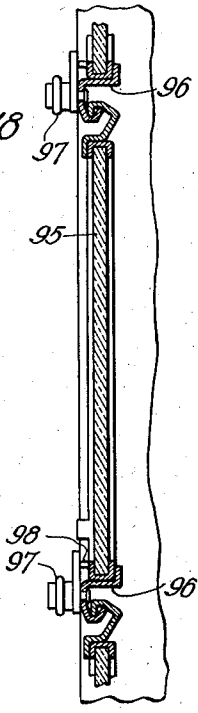
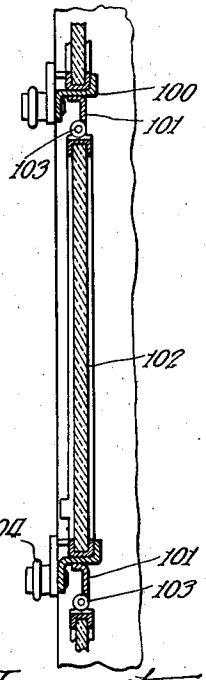


Fig. 19



Inventor:
Benjamin H. Adler
By: Zabel, Carlson, Gitzbaugh & Wells
Attys.

Patented Mar. 16, 1943

2,313,724

UNITED STATES PATENT OFFICE

2,313,724

CHANGEABLE LETTER SIGN

Benjamin H. Adler, Chicago, Ill.

Application June 24, 1940, Serial No. 342,121

12 Claims. (Cl. 40—140)

The present invention relates to changeable signs and particularly is directed to that part of a changeable sign known as the display area. The changeable sign in which the present invention may be incorporated ordinarily comprises a sign box having one or more of its sides open to receive a display area. Arranged within the sign box is a plurality of light sources such as electric lamps or fluorescent tubes adapted to uniformly illuminate the display area from behind. As will be hereinafter described, the display area comprises a plurality of translucent panels in front of which are removably mounted letter units which are arranged to convey a desired message. Such signs are referred to as the "silhouette" type because the letter units or figures that are mounted on the illuminated display area appear in silhouette in front of the area.

The display area contemplated in the present invention is made up of a plurality of frames and panels of suitable material associated with the frames. While the following description will deal specifically with a single frame unit and modifications thereof, it is distinctly understood that the display area may be and usually is comprised of a plurality of such units.

Such signs require servicing from time to time whereby it is necessary to provide easy access to the interior of the sign box. Many repairs, such as replacement of a burnt out lamp, are of a relatively simple nature and should require only a few moments of a workman's time. Consequently such repairs should be made possible without the necessity of completely removing a frame unit from the sign box. With this in view, the present invention deals with means for mounting individual panels whereby such panels may be swung outwardly to provide ready access to the illuminating compartment. As more complex repairs and periodic cleaning are sometimes necessary it is of course desirable to be able to completely remove the panels from the sign box. Therefore, in certain forms of my invention it is possible individually to remove the panels from the display area as well as to swing them outwardly.

Certain features relating to various details in silhouette sign construction and disclosed in connection with the present invention are subject matters of my co-pending applications Serial No. 263,704 filed March 23, 1939, for "Signs," Serial No. 308,413 filed December 9, 1939, for "Signs," and Serial No. 340,330 filed June 13, 1940, for "Changeable letter signs." Various modifications are herein made in some of my prior disclosed features in order to accommodate the present invention. Only as much of my prior disclosed subject matter is herein set forth as is necessary to present a full and complete understanding of the present invention.

Objects and advantages of the present invention will appear more fully as the description proceeds, reference being had to the accompanying drawings wherein preferred forms of the invention are shown. It is to be understood, however, that the drawings and descriptions are illustrative only and are not to be taken as limiting the invention except insofar as it is limited by the claims.

In the drawings—

Fig. 1 is a fragmentary view in front elevation of a portion of a silhouette sign of the multi-decker type capable of taking interchangeably several lines of display letters, and letters of different heights and size;

Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1 and showing removable panels provided with means to support a panel to the framework when such panel is removed from its position in the display area;

Fig. 3 is a somewhat enlarged sectional view on the line 3—3 of Fig. 1;

Fig. 4 is a somewhat enlarged sectional view of a portion of the display area showing panels adapted to be slid upwardly in the framework to provide an opening in the display area;

Fig. 5 is a sectional view taken substantially on the line 5—5 of Fig. 4;

Fig. 6 is a perspective view of a portion of the upright of Fig. 4 showing the manner in which a panel is inserted in the display area;

Fig. 7 is a fragmentary view in front elevation of the slidable panel used in the disclosure of Fig. 4;

Fig. 8 is a sectional view on the line 8—8 of Fig. 9;

Fig. 9 is a view in front elevation of a portion of the display area showing a panel pivoted to the uprights, the pivots being located near the mid-points of the side edges of the panel;

Fig. 10 is a sectional view on the line 10—10 of Fig. 9;

Fig. 11 is a sectional view on the line 11—11 of Fig. 9 showing one form of pivoted hasp used to lock a pivoted panel in the plane of the display area;

Fig. 12 is a sectional view of a hinged panel construction wherein the hinged panels are pivoted from their upper side edges directly to the uprights;

Fig. 13 is a perspective view showing the manner in which the panel of Fig. 12 is associated with the uprights;

Fig. 14 is a perspective view of my improved letter mounting means and showing a letter adapted to be mounted on such means; and

Figs. 15 through 19 are sectional views showing various modifications of means for mounting removable and/or pivoted panels in the framework.

Referring now in detail to the drawings, and particularly to Figs. 1 to 3 thereof, the present invention is shown as applied to a sign box 1 which may have suitable illuminating devices such as lamps 2 mounted therein. The lamps 2 are arranged in spaced relationship so as to obtain a substantially even distribution of light throughout the interior of the sign box 1. Sometimes fluorescent tubes are used instead of electric lamps. The sign box 1 may be constructed of sheet metal and has one or more of its sides open to receive a display area. The upper and lower edges of an open side of the sign box are adapted to receive cooperating edges of the display area.

As shown in Fig. 1, the display area comprises a plurality of units 3 and 4 mounted in an open side of the sign box 1. Each unit includes a framework structure and translucent panels associated with said framework. The framework structure is made up of vertical uprights 5 and 6 and spaced horizontal members 7 attached to said uprights. As will be understood from Fig. 3, the vertical upright 5 of one frame is adapted for interlocking engagement with vertical upright 6 of an adjacent frame. Such interlocking engagement provides a light-tight joint between adjacent frames and serves also to securely lock the frames in line. The ends of the uprights 5 and 6 may be modified to provide the desired means for mounting the frameworks in the sign box. In the case of display areas of substantial height, tie-rods 8 extend between the vertical uprights and the rear wall of the sign box.

In the form of my invention shown in Fig. 2, the horizontal framework members 7 are H-shaped in cross section, the upwardly facing channel being of somewhat less depth than the downwardly facing channel. Adapted to be mounted in the above described framework are translucent panels 10. The panels 10 may have their edges bound with channels 11, the purpose of which binding is to add strength to the panels and minimize the danger of breakage. The panels 10 are of such a size as to be removably mounted between adjacent horizontal framework members 7. As will be understood, the top of the panel 10 is first inserted in a downwardly facing channel so as to permit the bottom of the panel to be brought into engagement with the upwardly facing channel of the next lower member 7. Small lugs 12 extend from the face of the panel to provide means for holding the panel while it is being inserted. Flanges 13 and 14 on uprights 5 and 6, respectively, overlap the rear side edges of panels 10 to prevent the passage of light between the panels and the uprights.

Small hooks or the like 15 extend rearwardly of the panel 10 near the upper edge thereof. The hooks 15 may, for example, be welded to the channels binding the side edges of the panel. The purpose of the hooks 15 is to permit a removed panel to be hung on a portion of the framework until the maintenance work, which requires removal of the panel, has been completed. In the lower portion of Fig. 2 a removed panel is shown supported by the hooks 15 to the horizontal member 7 which normally received the lower edge of the panel.

Letter supporting means 20 extend across the face of the display area in spaced relationship from the horizontal member 7. The means 20 may take the form of bars, the ends of which are bent downwardly and inwardly as shown at 21 to provide a bracket for attachment to the uprights 5 and 6. The bar 20, being disposed in front of the display area, permits a removed panel to be dropped between it and the horizontal member 7. Of course, a removed panel could be hooked to the bar 20 rather than the horizontal member 7. Characters 24 and 25, which may be letters, figures or designs, are provided with lugs 26 extending rearwardly therefrom, which lugs cooperate with the bar 20 to removably support the characters in front of the display area.

Another form of my invention is shown in Figs. 4 to 7, inclusive. In this form, the translucent panels, and in particular those opposite the illuminating means, are adapted to be slid upwardly in the framework and temporarily retained at an upper limit to permit access to the interior of the sign box. Vertical uprights 30 and 31 take the form of oppositely facing channels, which channels receive the side edges of panels 32 and 33. The channels of the uprights 30 and 31 are of such a width as to receive two adjacent planes of panels. Vertically spaced horizontal members 35, which members may have and H-shaped cross section, are attached to the uprights 30 and 31. As will be understood from Fig. 4, the horizontal members 35 are staggered in the framework, that is alternate members are attached to the uprights at the front portion of the upright channels, while the intermediate members are attached at the rear portion of said channels. The upwardly facing channel of the member 35 is adapted to receive the lower edge of a panel 32 or 33. As shown in the drawings, the panels 33 which are seated on the rear members 35 are adapted to be slid upwardly to a position as shown in the lower unit of Fig. 4. Means 36 at the bottom of a panel 33 is adapted to engage a portion of the upright to retain the panel at its upper limit of movement. The means 36 may take the form of a spring plunger extending through the panel and engageable with an opening in the rear flange of the vertical channel.

To permit the panels 32 and 33 to be removable from the framework, portions of the front flange of the upright channels are cut-away for a substantial distance as shown at 40, such distance being sufficient to permit tilting of a panel when it has been removed from its supporting member 35, whereby the tilted panel may be slid out through the openings. It will be noted that the openings 40 through which a panel 32 is to be removed, are located opposite the upper portion of the panel. Alternatively, the openings through which a panel 33 may be removed are located opposite the lower portion of the panel.

Spaced horizontal letter supporting means 41, which means may comprise a member having an H-shaped cross section, have their ends attached to the uprights 30 and 31 and extend across the framework in front of the horizontal members 35. Characters 42 having oppositely extending flanges 43 projecting rearwardly thereof are removably supported by the means 41. The character 42 shown in Fig. 4 is relatively thin in cross section and is provided with a bead 44 at its periphery. A bevel 45 may extend from the bead to the rear side of the letter.

A further modification of the present invention is shown in Figs. 8 to 11, inclusive. The panel supporting framework includes vertical uprights 50 and 51 to which are attached vertically spaced horizontal members 52. The members 52 are preferably Z-shaped in cross

section. Translucent panel 53 is disposed between adjacent members 52 and is supported solely by the vertical uprights 50 and 51. In the form shown in Fig. 9 small lugs or the like 54 project from the side edges of the panel 53, said lugs being located centrally of said side edges. Cooperating lugs or the like 55 are mounted on the uprights, and extend in parallel relationship to the lugs 54. Aligned holes extend through the lugs 54 and 55 and receive pins 56 which serve to pivotally support the panel to the uprights. As will be understood, the panel may be pivoted to provide an opening in the display area. The flanges of the Z-members 52 serve as stops for the pivoted panel and also provide light-tight joints. Flanges 57 extend laterally from the rear upper sides of the panel 53. The flanges 57 overlap the joints between the panel and the uprights and prevents the passage of light therethrough. Similarly, flanges 58 extend laterally from the front side edges of the lower portion of the panel and overlap the front of the uprights to provide a light-tight joint.

A hasp 59 is pivoted to the horizontal member 52, which hasp may be manually actuated to lock the pivoted panel securely in position. A simple turn of the hasp permits the panel to be released and swung outwardly to provide access to the interior of the sign box.

Attached to the downwardly extending flanges of the Z-bars 52 are letter supporting means 60. The means 60 comprises a plurality of spaced lugs 61 projecting outwardly and slightly upwardly from the members 52. A character 62 is provided with seats or perforations 63 adapted to cooperate with the lugs 61 to removably support the character in front of the display area. It will be noted that perforations in the character may be used to receive the lug 61 without destroying the desired silhouette effect, because the presence of horizontal members 52 effectively prevents light from passing through said perforations.

A further modification of panels pivotally supported to the uprights is shown in Figs. 12 and 13. Uprights 65 are provided with vertically spaced bayonet slots 66. Pins 67 extend laterally from the upper cornors of translucent panels 68 and are adapted to engage the bayonet slots 66. As will be understood, this construction provides a removable, as well as a pivoted panel. In the form shown in Figs. 12 and 13, I have eliminated horizontal members extending between adjacent panels. The vertical uprights 65 in this case are connected by letter supporting means 71. A horizontal flange 69 depends from the bottom edge of a panel 68 and overlaps the top edge of the next lower panel, thereby preventing passage of light between the panels.

The pivoted panel arrangement of Figs. 12 and 13 is adapted also to a framework having horizontal members. If such horizontal members are of H-shaped cross section, the inner portion of the bayonet slot 66 is provided with an upwardly extending projection 70 which permits an inserted panel to be raised slightly in order that it may be seated in the upwardly facing channel of such horizontal member. In this case the upper edge of a panel is received in a downwardly facing channel of the horizontal member somewhat similar to the construction shown in Fig. 2. The flange 69 of course is not used, as the upper and lower channels seal the panel edges against passage of light. The horizontal member may take the form of a Z-bar as shown in Fig. 10, in which case a pivoted hasp would be utilized to retain the panel in proper position.

Various modified forms of removably and/or pivotally mounting a panel in the framework are disclosed in Figs. 15 to 19, inclusive. These figures are fragmentary sectional views showing various horizontal frame members and panel bindings cooperating with said member to support the panel. In Fig. 15 the horizontal member takes the form of a downwardly facing channel 75 having an upstanding flange 76 extending along the top side thereof. Panel 77 has its top and side edges enclosed by the usual channel bindings but has its lower edge received in a binding 78 having an H-shaped cross section. As will be understood, the panel is removably supported between adjacent horizontal members.

In Fig. 16, the horizontal member takes the form of a downwardly facing channel 80 having an upstanding flange 81 extending in line with the rear flange of said channel. The top edge of panel 82 is received in the channel 80 and the lower edge of the panel is seated on the web of the next lower channel. The flange 81 provides a light-tight joint and serves to hold the panel on the web. A pivoted hasp 83 and a small spring or lug 84 cooperate to securely retain the panel in proper position.

The horizontal member of Fig. 17 comprises an upstanding flange 85, which flange has its lower portion longitudinally bent to present a hook as shown at 86. The top of panel 87 is provided with a flange 88 which is longitudinally bent to provide a hook 89 which cooperates with the hook 86. The lower edge of the panel 87 is enclosed in a binding 90 having an H-shaped cross section. The downwardly facing channel of said binding cooperates with the flange 85 to support the panel.

In the form shown in Fig. 18, the horizontal member receives the lower portion of a panel 95 on web 96. Pivoted hasp 97 and spring or lug 98 cooperate to retain the pivoted and removable panel in its proper position.

The horizontal Z-bar 100, Fig. 19, has a flange 101 depending from its web. Panel 102 is hinged to said flange by means of, for example, an ordinary piano hinge 103. Here again a pivoted hasp 104 cooperates with the Z-bar to securely position the panel.

From the above description, it will be apparent that I have provided certain useful improvements in silhouette sign construction. I have provided a display area comprising a framework structure and a plurality of translucent panels adapted to be mounted in the structure in such a fashion as to permit convenient access to the sign box through the display area. To this end, my individual panel units are in some forms of the invention removably mounted in the framework. To these removable panels I have attached means whereby a removed panel may be supported from a portion of the framework, while a maintenance man is making the necessary repairs through the opening in the display area.

In another form of my invention, certain of the individual panels may be slid upwardly in the manner of an ordinary window to provide an opening in the display area. This structure includes also the provision that a panel can be taken from the display area and a new one readily inserted in its place. This latter provision is desirable inasmuch as the translucent panels

ordinarily are glass and therefore subject to accidental breakage.

A third modification of the present invention calls for a panel supported solely by the uprights of the framework. In one form of this modification the panel may be pivoted to the uprights on the horizontal axis of the panel. Another form has the panel pivoted at its upper corners to the uprights. Bayonet slots in the uprights and cooperating pins extending from the panels may cooperate in either of the above forms to provide a removable, as well as a pivoted panel.

For use with the above described display areas, the present invention also contemplates an improved letter mounting means which utilizes spaced lugs projecting from the face of the display area. Characters having seats or perforations therein are adapted to be mounted removably on such supporting means.

From the foregoing illustrative description, it is believed that the construction and advantages of the present invention will be readily apparent to those skilled in this art. Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, translucent panels mounted between adjacent horizontal members, said panels being pivotally attached to said uprights near the mid-points of the lateral edges of said panels.

2. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, translucent panels mounted between adjacent horizontal members, said panels being pivotally attached to said uprights near the mid-points of the lateral edges of said panels, and means for retaining said pivoted panel in the plane of said framework.

3. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, translucent panels mounted between adjacent horizontal members, said panels being pivotally attached to said uprights near the mid-points of the lateral edges of said panels, and shields on said panels overlapping a portion of said uprights to prevent passage of light at the junction of said panels and uprights.

4. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, said horizontal members being Z-bars, translucent panels mounted between adjacent horizontal members, said panels being pivotally attached to said uprights near the mid-points of the lateral edges of said panels, the flanges of said Z-bars overlapping the edges of said panels whereby to prevent passage of light between said panels and Z-bars.

5. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, translucent panels pivotally attached to said uprights, and letters removably supported by said horizontal members.

6. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, translucent panels pivotally and removably attached to said uprights, and letters removably supported by said horizontal members.

7. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, bayonet slots in said uprights, translucent panels adapted to be pivotally and removably mounted to said uprights by means of pins cooperating with said bayonet slots, and letters removably supported by said horizontal members.

8. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, bayonet slots in said uprights below said horizontal members, and translucent panels having slot engaging projections extending laterally from the upper side edges thereof whereby said panels when mounted to said uprights may be swung outwardly or, alternatively, may be removed from said framework.

9. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, bayonet slots in said uprights below said horizontal members, and translucent panels having slot engaging projections extending laterally from the upper side edges thereof whereby said panels when mounted to said uprights may be swung outwardly or, alternatively, may be removed from said framework, said uprights having flanges overlapping the side edges of said panels at the rear thereof to prevent passage of light between said uprights and panels.

10. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, bayonet slots in said uprights below said horizontal members, and translucent panels having slot engaging projections extending laterally from the upper side edges thereof whereby said panels when mounted to said uprights may be swung outwardly or, alternatively, may be removed from said framework, and means for retaining said panels in the plane of said display area.

11. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, bayonet slots in said uprights below said horizontal members, and translucent panels having slot engaging projections extending laterally from the upper side edges thereof whereby said panels when mounted to said uprights may be swung outwardly or, alternatively, may be removed from said framework, said horizontal members including flanges overlapping the top and bottom edges of said panels to prevent passage of light between said members and panels.

12. In a changeable display sign, a framework including uprights and spaced horizontal members attached to said uprights, bayonet slots in said uprights below said horizontal members, and translucent panels having slot engaging projections extending laterally from the upper side edges thereof whereby said panels when mounted to said uprights may be swung outwardly or, alternatively, may be removed from said framework, said horizontal members including flanges overlapping the top and bottom edges of said panels to prevent passage of light between said members and panels, said uprights having flanges overlapping the side edges of said panels at the rear thereof to prevent passage of light between said uprights and panels.

BENJAMIN H. ADLER.