Jan. 20, 1942. E. WAGNER 2,270,711

DISPLAY DEVICE

Filed July 12, 1939

Fig. 1.

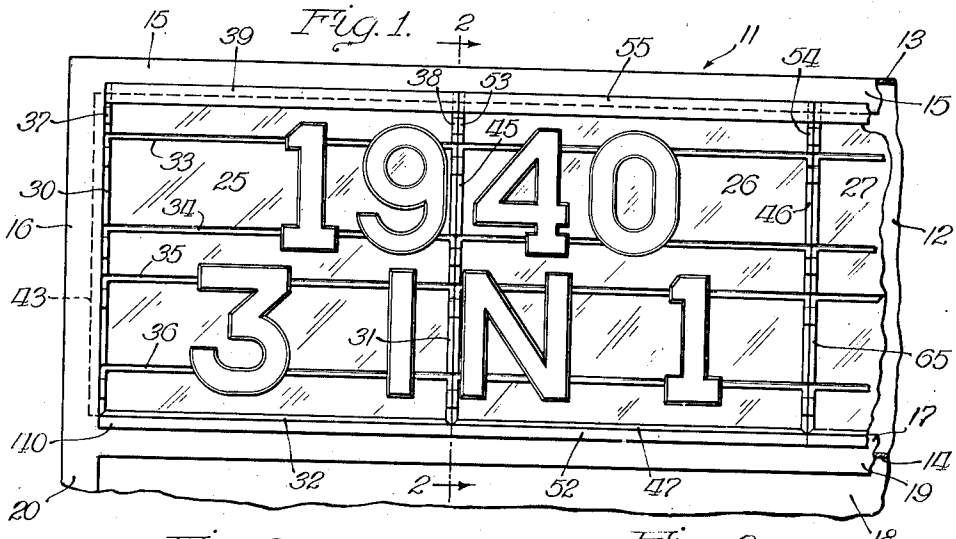


Fig. 2.

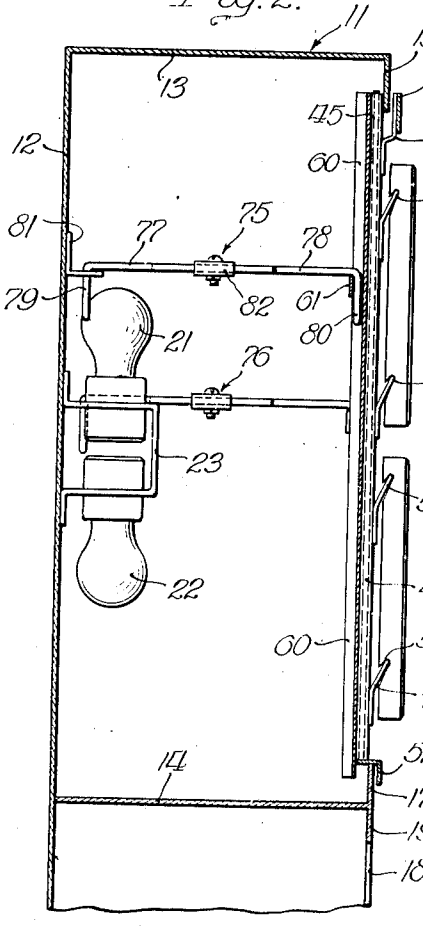


Fig. 3.

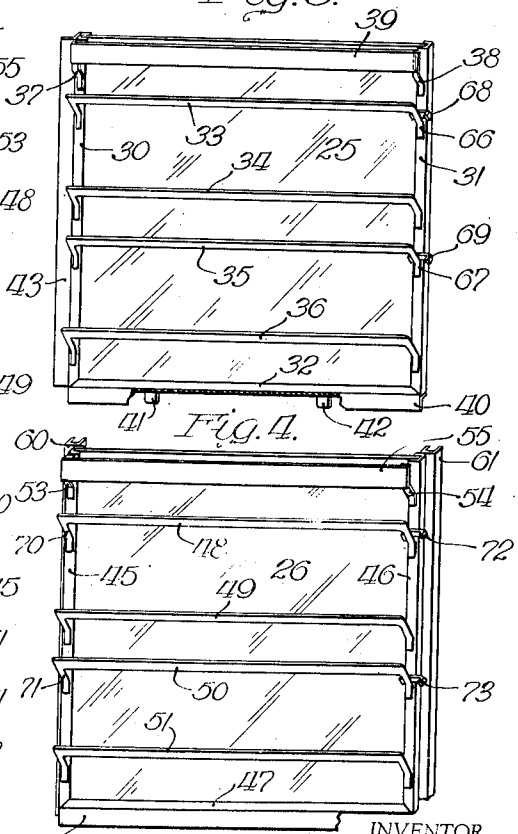


Fig. 4.

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UNITED STATES PATENT OFFICE

2,270,711

DISPLAY DEVICE

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8 Claims. (Cl. 40—140)

The present invention relates to display devices, for example, of the type shown in my Patent No. 2,048,040, issued July 21, 1936, wherein opaque characters or letters are positioned in front of an illuminated display panel, and is particularly concerned with improved means for mounting the glass panel jointly with letter-carrying devices in a novel manner designed to simplify production as well as installation of the sign, and to render its appearance more pleasing and its use and operation more secure and more efficient.

In previously known sign structures of this general type, the display panel is usually disposed either with or without letter-carrying means, within a channel defining a marginal opening in a suitable box containing the illuminating lamps. Assuming the most commonly used rectangular or square type of display opening, or rather to say, display surface, which such a sign presents to view, the lower marginal channel holding the display panel and the carrier means is open to the outside and admits into the interior of the sign rainwater, dust and dirt from the atmosphere, which is a serious handicap. Aside from the trouble that may be caused in the interior of the structure by rainwater seeping thereinto and dust and grit accumulating therein, damage may be caused and repair or replacement prevented, or greatly impaired in cold weather by the freezing of the water within the lower channel or on the lower edge of the panel and the letter-carrying means.

The foregoing outline merely touches the prominent shortcomings of previous structures, but does not exhaust the list of drawbacks that may be cited, for example, the necessity of providing mounting channels either in the sign box or in the display frame, or in both; complications that result in the maintenance and installation of such a sign; or difficulties in adapting the panel and carrier structure to existing signs.

One object of the new structure is to overcome the above noted drawbacks by the provision of a carrier device for the display panel and the letters or characters, which is equipped with means for engaging the outside face of the sign while locating the panel within the display opening and its outside face substantially in line with the plane of the inside of this opening. Rainwater cannot enter the interior of the sign at the top of the panel; it washes down the display panel and drains off without entering the interior of the sign at the bottom. While the interior of the sign is not hermetically sealed against the ingress of dust, the new structure also constitutes an improvement in this respect, because the accumulation of dust and grit within the sign is greatly cut down and for all practical purposes eliminated to a point where it cannot cause damage or be annoyingly noticed. This in turn tends to reduce maintenance costs because it is cheaper to maintain the new sign in the required clean condition than would otherwise be the case.

Another object of the invention is realized by the provision of means for laterally locking adjacent panel sections together to form a unitary frontal assemblage in a common plane.

Still another object resides in the provision of means for transversely locking the panel or display sections of the sign with respect to the display box itself so as to keep the panels in place and in alignment within the display opening as a unitary assembly.

These and other objects not yet specifically noted will be brought out in detail in the following description referring to the accompanying drawing, wherein—

Fig. 1 is a partial plan view of one embodiment of the new sign, with some parts in section or broken away so as to indicate details;

Fig. 2 represents, on a somewhat enlarged scale, a section along line 2—2 of Fig 1; and

Figs. 3 and 4 are diagrammatic perspective views of two panel sections shown in Fig. 1.

Some of the details in the drawing, wherein like parts are designated by like reference numerals, are shown on a somewhat distorted scale with respect to other parts, so as to support understanding of the invention, which could not be accomplished by a true-to-scale representation.

Referring now to the drawing, numeral 11 designates generally a suitable box made, for example, of sheet metal having a back wall 12, a top 13, a partition 14, and a peripheral ledge comprising the portions 15, 16 and 17 which define a marginal frontal opening in the upper section of the box. This opening is provided for receiving a display panel or, as the case may be, a number of panels forming a display surface against which the characters or letters are put on display. In the drawings is assumed a composite display box having a series of superimposed display openings, a second display opening being shown at 18, which is defined by a circumferential or peripheral edge comprising the portions 19 and 20 which correspond to the portions 15 and 16 in the case of the uppermost display opening. Such a box may be equipped with only one suitable display opening or with a number of display openings, and each opening may receive one or more display panels of the type disclosed herein. The display openings are defined by simple ledges such as 15 and 17, taking the place of marginal channels of previous structures. However, the new structure is also suitable for use with sign boxes having openings

defined in whole or in part by a marginal channel.

Within the box or any section thereof, may be provided suitable illuminating means, for example, lamps, such as 21 and 22, which are secured in sockets mounted on a bracket such as 23.

The panel assemblage shown in Fig. 1 comprises three individual sectional display panels shown at 25, 26, 27. Each panel is equipped with a cage-like carrier having cross-bars for mounting thereon the character or letters and means for attaching each panel assemblage individually within the corresponding display opening. The two panel sections 25 and 26 with their carriers and mounting means are shown separately in Figs. 3 and 4, and accordingly these will be described next, and the mounting thereof will then be explained with reference to Figs. 1 and 2.

Referring to Fig. 3, the glass panel 25 of this section is provided with a channel-shaped carrier comprising the uprights 30 and 31 and the bottom section 32. The uprights 30 and 31 grip the glass panel on opposite edges, as shown. The bottom strip 32 may extend, if desired, across the entire width of the panel as indicated in Fig. 3. Cross-bars 33—34 and 35—36, each having an angular leg at each end, are provided for receiving the characters or letters which may be of the type shown in my previously mentioned patent, No. 2,048,040. These cross-bars are attached to the uprights by welding. Also attached, preferably by welding to the uprights 30 and 31 near the top thereof, are angular bars or extensions indicated at 37 and 38. These bars may be provided with a cross strip 39. At the bottom of the carrier and, for example, welded to the channel strip 32, is an angular skirt or apron 40, and welded to the back of the channel strip 32 may be legs 41 and 42. The back side of the apron 40 is thus spaced from the legs 41 and 42 just like the back of the angular bars 37 and 38 are spaced from the face of the uprights 30 and 31. The apron or skirt 40 is in the plane of the outwardly-extending portions of the bars 37 and 38. The spaces intervening between the forward portions of the bars 37 and 38 and the uprights 30 and 31, and between the apron 40 and the legs 41 and 42, respectively, are provided for receiving the ledges 15 and 17 of the sign box when the panel assemblage is put in position. Another angular apron 43 is provided, for example, by welding, on the side of the upright 31.

This panel section just described with reference to Fig. 3, represents a unit which is put in place in the sign as follows: It must be assumed first that the corresponding space for panel section 25 in Fig. 1 is vacant. This end section of the display panel is conveniently lifted by taking hold of any of the cross-bars 33—36, inserting the ledge 15 of the box in the intervening space between the forwardly bent portions of the bracket bars 37—38, thereby lifting the lower edge of the apron 40 well above the upper edge of the ledge 17, then pushing the section back clearing the edge of ledge 17, and dropping this section so that it comes to rest on the ledge 17 with the apron 40 outside of the face of the sign, that is, outside of the face of the ledge 17. The panel section is then pushed to the left, and the apron 43 will slip in back of the ledge face 16 of the sign, as shown in Fig. 1. The section 25 is now properly positioned. Certain means for securing it in its proper position will be presently described.

The second panel section 26 may be made according to the embodiment shown in Fig. 4. The glass panel of this section is again provided with a channel-shaped carrier just like the one described with respect to Fig. 3, comprising uprights 45—46 and the bottom channel portion 47. Again, as in the previous case, this bottom portion may go straight through, as indicated in Fig. 4, or the uprights may merely be provided with small leg portions just long enough to engage and to hold the bottom edge of the glass panel. Cross-bars 48—49 and 50—51 are again attached to the uprights 45—46 by welding their legs thereto. The lower channel section 47 is provided, just like the corresponding channel section 32 of Fig. 3, with an angular strip constituting an apron 52 which takes the place and function of the apron 40 shown in Fig. 3. At the upper end of the uprights 45—46 are also provided angular extensions or brackets 53 and 54, respectively, which may be tied together, if desired, by a decorative cover strip 55, this strip corresponding to the cross strip or border strip 39 shown in Fig. 3. So far this panel section corresponds to the one shown in Fig. 3.

As will be seen, on each of these panel sections there are means for engagement with the outside face of the display box, that is, with the outside faces of the corresponding marginal or circumferential ledges or edges of the box which define the display opening. In the assemblage Fig. 3, these means are the brackets 37, 38 (connected by border strip 39) on top of the uprights 30, 31 and the apron 40 at the bottom thereof, and in the assemblage Fig. 4 similar brackets 53, 54 (connected by the border strip 55) on top of the uprights 45, 46 and the apron 52 at the bottom thereof. The border strips 39 and 55 are thus mounted on spaced-apart brackets and are disposed in parallel with but spaced from the outer face of the ledge-like frame strip 15 of the sign casing. Moisture may drain downwardly through the space between the outer face of ledge 15 and the border strip such as 39 and 55. The aprons such as 42 (Fig. 3) and 52 (Fig. 4) direct the moisture downwardly and outwardly away from the interior of the sign.

The difference between an intermediate panel section (Fig. 4) and an end section (Fig. 3) appears in the provision of channel uprights, such as 60 and 61, which are welded to the uprights 45 and 46, it being assumed in this case that the sign has only three sections 25, 26, 27, the section 27 being again of the structure shown in Fig. 3, with the difference that the apron 43 is on the right side instead of the left. In case there are a number of intermediate panel sections, each section is equipped with only one channel member 60 or 61 either on the upright 45 or on the upright 46; or, as an alternative, every alternate section may be of the structure shown in Fig. 4 and other intermediate sections substantially like the one shown in Fig. 3 but without the strip 43. The lower ends of the channel uprights, such as 60 and 61, extend beyond and below the bottom edge of the channel member 47, providing an intervening space between the back of the apron 52 and the forward edge of the channel members 60 and 61 for accommodating the ledge 17 when the section is put in place on the sign.

The panel section 26 is mounted substantially in the same manner as described with respect to the first panel section 25; that is, the corresponding place in the sign box being vacant, the panel section is conveniently lifted by means of

the cross-bars, and the ledge 15 is inserted in the intermediate space between the bars 53—54 and the bottom of the face of the uprights 45—46. This operation lifts the assemblage well above the upper edge of the ledge 17, as previously described, and the section is then moved back and dropped into place, and assumes the position shown in Fig. 2. The cross-bars 33—36 of the first panel section 25 are then in horizontal alignment with the cross-bars 48—51 of the panel section 26, forming substantially continuous lines for supporting the notched letters or characters in any convenient or desired juxtaposition so as to spell out a desired message. It is understood, of course, that cross-bars of a different type may be used, if desired, for example, channel-shaped bars or rods for supporting characters provided with lugs or extensions at the top and bottom thereof.

The right hand edge of the upright 31 of the section 25 shown in Fig. 3, when assembled in place as above described, directly engages the left hand edge of the upright 45 of the section 26 shown in Fig. 4, and the upright channel member 60 attached to the upright 45 and extending laterally beyond the same furnishes a back rest for the back of the upright 31 of the first section 25. The other end section 27 shown in Fig. 1, which is of the same structure as the one shown in Fig. 3, but with the apron 43 on the right side, may then be put in place in the same manner and the left edge of the upright 65 of this end section 27 then contacts the right edge of the upright 46 of the intermediate section 26, while the upright 61 attached to the upright 46 furnishes again a back rest for the back of the upright 65 of the right hand end section 27. Should there be a plurality of intermediate sections such as 26, as previously mentioned, every alternate intermediate section may be provided with an upright such as 60 or 61; or each such section may be provided with only one such channel upright.

Welded to some of the legs of the cross-bars, such as to the legs 66 and 67 of the cross-bars 33 and 35 (Fig. 3), are hook-like brackets, such as 68 and 69. These brackets engage the corresponding adjacent cross-bars, or, rather, the legs thereof, such as the legs 70 and 71 of the adjacent panel section 26 (Fig. 4) when these panel sections are put in place as shown in Fig. 1. Similar bracket hooks are provided on the right side of the cross-bars 48 and 50 of the assemblage shown in Fig. 4, as indicated at 72 and 73, for engagement with adjacent cross-bar legs of the next adjacent section 27.

In order to obtain additional and transverse secure positioning of the various panel sections with respect to the display box, I have provided adjustable tie rods, such as 75 and 76 (Fig. 2), consisting of simple bars, such as 77—78, angularly bent at the ends to form hooks 79 and 80 for engagement with securing means provided on the wall of the box 12, which may be a simple bracket 81 equipped with a hole for receiving the hook 79 and other securing means on the back of the channel strips such as 60, consisting of a simple bar 61 welded across the channel in back thereof and providing another aperture for receiving the hook 80. The two bars 77 and 78 are held together by means of a screw clamp bracket 82, and thus the distance between the two hook portions 79 and 80 may be adjusted and positioned, as desired, so as to exert a slight pull on the corresponding sections of the panels to hold them in place. The fastening means 76 corresponds exactly to the one just described, but, of course, engaging and holding in place another panel section. In this case one of the hook bars engages a hole in the bracket 23 which also holds the lamp sockets. These tie rods or tie bars are distributed at various places within the display box so as to secure the assembled panel sections in a well distributed manner. The drawing Fig. 2 shows some spacing between the bars 53 and ledge 15 and between the apron 52 and the ledge 17. This condition occurs during the process of mounting. These portions of the panel engage the face of the sign, that is, the face of the ledges when the sign is finally fastened in its place. It is, of course, not absolutely necessary to pull the panel section back by means of the tie rods 75—76, but to use these rods for the purpose of holding the panels in upright position while resting them on the corresponding ledge of the box, for example, the ledge 17. The term "engage" or its equivalent, as applied to the relation of parts in a mounted and assembled sign, with respect to the face of the sign box and certain parts of the panel section, is not used herein in the sense of necessarily touching or physically contacting, but in the sense of defining a more or less close face-to-face relationship.

Attention has already been called to the fact that the new structure may also be used in conjunction with sign boxes having an opening or openings defined in whole or in part by marginal ledge members forming channels instead of the simple single ledges shown in the drawing. This is particularly true so far as the upper edge of the openings is concerned. If a channel is present instead of the ledge strip 15, the carrier structure may be made without the members 37—38 and 53—54, respectively, and the ends of the vertical carrier members may be directly inserted into the channel of the box.

As previously remarked, the various details of the sign are shown on a somewhat distorted scale. The upright bars of the panel sections, for example, as well as the cross-bars for supporting the letters or characters, are shown on a much larger scale with respect to the glass panels and other portions of the sign than is actually the case. These bars and channels are quite small and are not as prominent in the real embodiment of a sign as one would be led to believe from examining Fig. 1 and other figures of the drawing. However, if they were represented on a true scale, it would be impossible to show the details even approximately.

The foregoing description and the drawing are intended to furnish an example of an embodiment so as to teach others how the invention may be carried out in practice; they are not intended to define the limits and possibilities of the invention. It is understood that modifications are possible and that they can be carried out within the scope and limits of the appended claims wherein I have defined what is believed to be new and what is desired to have protected by Letters Patent of the United States.

What I claim as my invention is:

1. A display sign comprising a box, a substantially rectangular display opening on the side of said box defined by a circumferentially disposed marginal strip, a glass panel for closing said display opening, a carrier frame for holding and mounting said panel within said display opening with the outer display surface thereof disposed in a plane extending in back of said strip, said

carrier frame comprising upright channel members engaging two opposite edges and a bottom channel member engaging the bottom edge of said panel, an angular bracket-like member attached to each said upright channel member at the top thereof for engagement with the outside face of the top part of said strip, and an angular member attached to and extending along said bottom channel member for engagement with the outside face of the bottom part of said strip and forming an apron overlapping said strip substantially for the entire width of said panel, when said panel is positioned to close said display opening, whereby moisture draining through the space between said bracket-like members at the top of said panel is directed to the outside over said apron member at the bottom thereof.

2. A display sign comprising a box, a substantially rectangular display opening at the side of said box defined by a circumferentially extending marginal strip, a glass panel for closing said display opening, a carrier frame for holding and mounting said panel within said display opening with the outer display surface thereof disposed in a plane extending in back of said strip, said carrier frame comprising upright channel members engaging two opposite edges and a bottom channel member engaging the bottom edge of said panel, an angular bracket-like member attached to each of said upright channel members at the top thereof for engagement with the outside face of the top part of said strip, an angular member attached to and extending along said bottom channel member for engagement with the outside face of the bottom part of said strip and forming an apron overlapping said strip substantially for the entire width of the said panel when said panel is positioned to close said display opening, and means in said box for securing the engagement of said angular members on said carrier frame with the face of said marginal strip.

3. In a display sign, a display panel, a carrier therefor which comprises channel means forming a generally U-shaped structure engaging said panel at three edges but leaving the upper edge thereof free, angular bracket-like members attached to the base and to the ends of the legs of said U-shaped structure and projecting out of the frontal plane thereof to form mounting means therewith which extend substantially in parallel thereto, channel members attached to the legs of said U-shaped structure and extending rearwardly thereof with their lower ends projecting below the base of said structure to form companion mounting means at the base of the legs of said structure in back of the mounting means projecting from the frontal plane thereof, and cross members connecting the legs of said U-shaped structure for receiving character means for display against the panel.

4. In a display sign, a box containing illuminating means, a display opening in said box, a plurality of display panels for said opening, each of said panels having a carrier frame comprising channel means engaging opposite upright edges and the bottom edge of said panel, cross members connecting said channel means to form substantially continuous horizontal lines with the cross members of adjacent panels for supporting removable characters in front of said panels, means at the side of each carrier frame for laterally engaging and locking thereto the frame of the adjacent panel, and means carried by carrier frames of some of said panels for transversely holding said panels in position in said display opening, said last named means comprising strips attached to and in back of said channel means engaging the upright edges of the corresponding panel, and adjustable tie rods within said box for engaging said strips.

5. In a display sign, a box containing illuminating means, a display opening in said box, a plurality of display panels for said opening, each of said panels having a carrier frame comprising channel means engaging the edge of the panel but leaving the top edge thereof free, cross members connecting opposite upright legs of said channel means in front of the panel to form continuous horizontal lines with like cross members of adjacent panels for supporting characters for display against the panels, an angular bottom member and a plurality of angular top members protruding forwardly out of the plane of said channel means for engagement with the face of the box forming said display opening when said panels are positioned in place, means on each carrier frame for laterally engaging and holding in place the carrier frame of the adjacent panel, and means in said box for transversely holding some of the carrier frames of some of said panels so as to secure the engagement of said angular members with the face of the box which defines the display opening.

6. In an outdoor sign comprising a box having a substantially vertically disposed side wall with a substantially rectangularly shaped opening bordered by marginal ledge-like strips, a display panel, a carrier frame for holding said panel at the edges thereof and for mounting it in said box to close said display opening, a plurality of bracket-like members secured on said carrier frame in spaced relation to each other substantially at the top thereof for engagement with the outer face of the ledge-like strip bordering the top of said opening, a border strip supported by said bracket-like members, said border strip extending in parallel with but spaced from the outer face of said ledge-like strip to permit moisture to drain downwardly through the space between said border strip and the outer face of said ledge-like strip when said panel is mounted in said opening, and an angular member on said carrier frame at the bottom thereof for engagement with the outer face of the ledge-like strip bordering the bottom of said opening, said angular member extending substantially over the entire width of said panel and forming an apron at the bottom thereof which overhangs the bottom strip of said opening so as to direct moisture downwardly and outwardly away from the panel when the panel is mounted in said opening.

7. The structure defined in claim 6, wherein said display panel is disposed in said opening with its outer display surface thereof extending in a plane lying in the rear of the ledge-like strips bordering said opening.

8. The structure defined in claim 6, together with means in said box for holding said panel in place after mounting it in said opening.

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