

Oct. 7, 1969

S. KNOWLES

3,470,640

SIGNBOARD WITH REMOVABLE CHARACTERS AND PANELS

Filed July 13, 1967

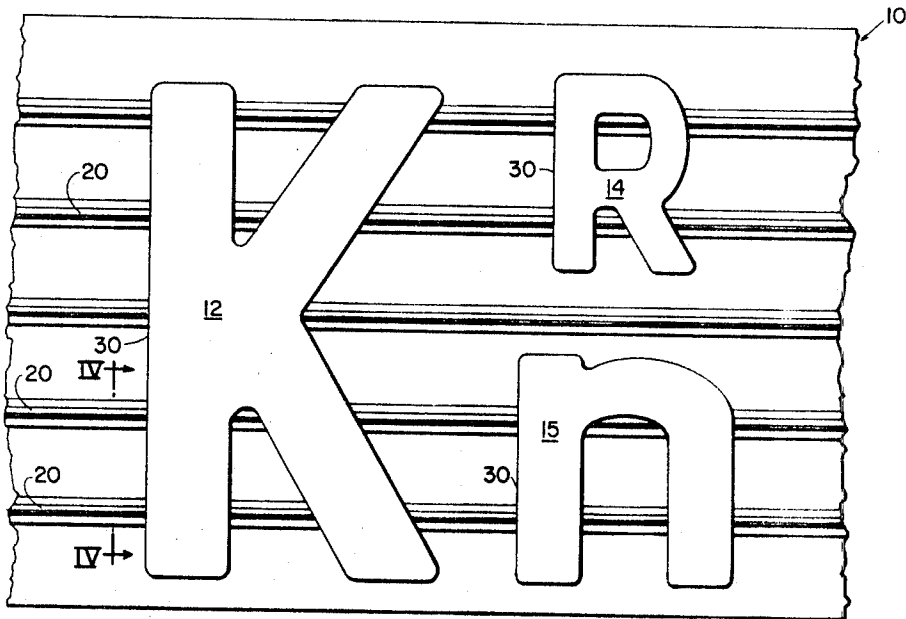


FIG. 1

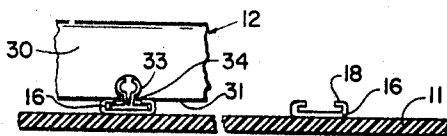


FIG. 4



FIG. 5



FIG. 6

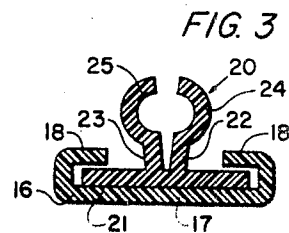


FIG. 3

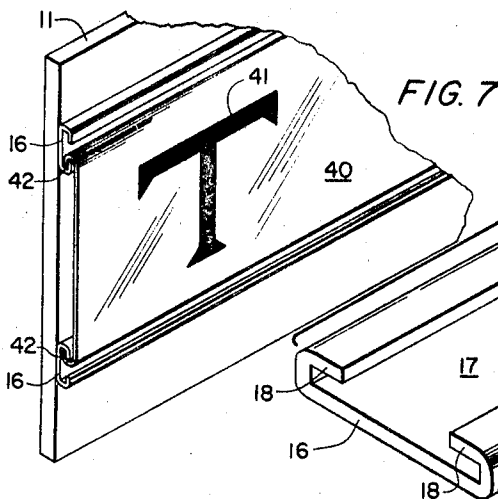


FIG. 7

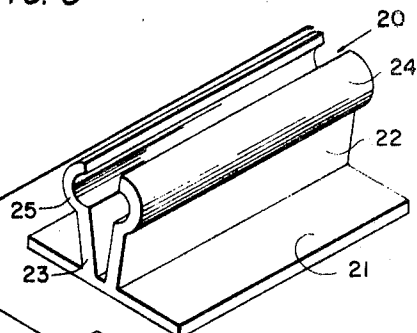


FIG. 2

INVENTOR
SQUIRE KNOWLES

BY *James S. Hardy*

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3,470,640

SIGNBOARD WITH REMOVABLE CHARACTERS AND PANELS

Squire Knowles, Palo Alto, Calif., assignor to Unitrak Corporation, Los Angeles, Calif., a corporation of California

Filed July 13, 1967, Ser. No. 653,086

Int. Cl. C09f 7/02

U.S. Cl. 40—140

7 Claims

ABSTRACT OF THE DISCLOSURE

The invention relates to a signboard with removable characters on panels of the type in use of the marquees of movie houses. The removable letters are mounted on replaceable tracks. The tracks are free floating both in a vertical and horizontal axis within a fixed sleeve secured at regular intervals on the panel and have sufficient movement to accommodate for attachment inaccuracies and differences in coefficients of expansion and contraction. The letter to track locking makes the attachments secure against the elements and against inadvertent dislodgment, all without tension in the locked position while at the same time allowing easy pull off when change is necessary. Also, the fixed sleeve mounts for the tracks provide for the first time a means for quick attachment, securing and removal of prepared panels in supplement to or in place of the letters and characters.

While it is true that there are numerous signboards with removable characters, many of them with translucent illuminated backgrounds or panels, the persistent objections and disadvantages to them prompted the long and detailed investigation during which this invention evolved.

It has been a problem to provide each letter with suitable means to quickly place it in position on the signboard and remove it when needed. Most of the major systems in use at the present time have letters and characters which have metal clips or projecting tabs or some other means attached to each letter which is required for securely affixing the character to the sign. These clip and tab means may become bent, displaced or broken requiring expensive repairs. Stresses occurring at the point of attachment may crack or break the vertical dimension of the letter in which case the entire letter must be discarded. The attaching means also produce increased thicknesses or awkward protrusions at the points of attachment which mean that letters or characters of the same size and shape cannot be stacked but are simply piled and require a great deal of storage space. In addition, certain types of clips or other means added to the letter or character produce a different local thickness which cause shadows when illuminated detracting from the clear appearance of the character involved.

It is therefore an object of the present invention to provide a letter and character which has a secure means of attachment to the track system as a part thereof without extensions beyond the form of the letter or the thickness of the wall thereof and without diminishing the ease of detachability or the even illumination of the character.

In many instances in preparing signs with removable letters the board or panel can only be reached by means of a ladder. This requires that the manner of attaching the letters and characters to the signboard must be such that after they are secured on the signboard they must be freely movable laterally without difficulty, without disturbing the safety and secureness of the attachment, without chattering and without buckling the sidewalls of the letter or character.

It is therefore an object of the present invention to

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provide letters and characters which can be firmly but detachably secured and which when secured on the face of the sign will still be slideable to the left or right with slight pressure without buckling the sidewall or in any way disturbing the gripping of the letter to the mounting.

In practically all major systems now in use the letters when placed in position are spaced approximately $\frac{1}{2}$ inch or more away from the face of the panel. This allows free wind action on the back of the letters and makes them susceptible to being lifted off despite the use of metal clips and other holding means.

It is therefore an object of the present invention to provide letters which fit either flush against the face of the sign or panel, or at a maximum of $\frac{3}{32}$ of an inch from the panel. This not only minimizes the effect of wind pressure on the back of the letters but provides greater concentration of light in transparent colors to give brighter illumination.

It is another object of the present invention to provide a track for locking the letters in position on the face of the sign which track is removable and free floating on the horizontal axis in a fixed retaining sleeve. The track can thus be taken out or removed at will and when in position has a loose fit providing controlled vertical movement compensating for the variations in expansion and contraction and in the positioning of the locking means on the letters.

It is a further object of the present invention to provide a locking means for holding the letters to the track without tension in the locked position, thus avoiding the problems of cold flow particularly in acetate butyrate plastics or fatigue in metals.

A further advantage is to be found in the multiple points of attachment in each letter. It is not unusual to find that vacuum formed letters of acetate butyrate, the commonly used plastic for this application, tend to warp when exposed to the elements over a period of time. Such warped letters can still be attached to the track system of the present invention and will hold even though some points of attachment may not be operative.

Further objects are to provide a construction of maximum simplicity, economy and ease of assembly and disassembly, also such further objects, advantages and capabilities as will fully appear and as are inherently possessed by the device and invention described herein.

The invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawing, and while there is shown therein a preferred embodiment thereof, it is to be understood that the same is illustrative of the invention and that the invention is capable of modification and change and comprehends other details of construction without departing from the spirit thereof or the scope of the appended claims.

Referring to the drawing:

FIGURE 1 is a fragmentary front elevational view of a signboard showing several letters, a large letter "K" in upper case, a letter "n" in smaller lower case and a smaller "R" in upper case, all positioned on the signboard panel;

FIGURE 2 is an expanded perspective view showing a portion of the sleeve mount for the track and a portion of the track to which the letters and characters are removably attached;

FIGURE 3 is an enlarged vertical section of the sleeve mount with the track positioned therein;

FIGURE 4 is a sectional view taken on the line IV—IV of FIGURE 1 with a portion of the letter shown in elevation as attached in position and with two sleeve mounts on the panel;

FIGURE 5 is a sectional view similar to that of FIGURE 4 but with the sleeve mounts set flush in preformed grooves in the face of the panel;

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FIGURE 6 is a panel where the grooves for the flush receiving of the sleeve mounts is formed by pressing them in position; and

FIGURE 7 is a fragmentary perspective view showing the manner of attaching a prepared panel for quick mounting and removal in the sleeve mounts when the tracks are removed.

Referring now more particularly to the drawing in which like reference numerals indicate like parts in the several views, a portion of the complete panel for a signboard with letters attached is shown in FIGURE 1 and is generally designated 10. It consists of a panel 11 having a continuous flat surface or face of plastic or other suitable material. It may or may not be translucent and illuminated from behind to give a soft luminous appearance not only to the panel 11 itself, but to the letters 12, 14 and 15 mounted thereon.

The panel 11 is preferably a single sheet as shown in FIGURES 1 and 4, and although it is described as being translucent, it is apparent that it may be constructed of any suitable material and may even be opaque or made of heavier material than plastic which is here shown by way of example only. While the nature of the material used for the panel 11 may not be of primary importance in the structure shown and described, nevertheless, these materials are of importance for commercial usage and the nature of the materials from the standpoint of commercial usefulness cannot be ignored. In most instances the signboard panels are located in places where they are exposed to the elements and therefore temperature changes, wind and water play a significant role in the nature of the materials used and the success of the results.

At vertically spaced equal intervals along the outer face of the panel 11 are sleeves 16. The sleeves 16 have a flat back or bottom portion 17 with spaced inwardly directed and opposed marginal overhangs 18. These sleeves are in a continuous strip and, of course, may be produced by extrusion or in any other suitable manner. They are secured to the panel 11 in precise spaced relation so that the distance between them at any place on the panel 11 will be substantially uniform. The over-all height of the sleeves with respect to outer dimensions is as little as possible and preferably should not exceed $\frac{3}{32}$ of an inch. These sleeves are secured to the panel 11 in any suitable manner such as adhesive, removable screws, rivets or the like. The track generally designated 20 is a unitary structure also formed in strips which can be extruded and has a continuous flat base 21 which is received in the sleeve mount and retained therein by the overhanging flanges 18. As shown in the section of FIGURE 3 and in the expanded form of FIGURE 2, there are two facing continuous members 22 and 23 which extend upwardly and slightly outwardly from the central portion of the flat base 21. Each of these upwardly directed members terminates in complementary arcuate segment of a circle 24 and 25 respectively. These segments 24 and 25 do not meet at the top, but are spaced from each other so as to allow movement toward each other under pressure. The nature of the material used, which is preferably plastic, is such that when there is pressure pushing the two segments 24 and 25 toward each other, they will return to their normal position when the pressure is released. It will be observed that the fit of the track 20 within the sleeve 16 is loose enough so that there is ample floating movement axially laterally without any danger of the track falling out of the sleeve. It is also to be noted that the track base 21 has a width less than the space it occupies in the sleeve 16 so that there is some vertical play. This vertical play provides limited vertical movement of the track within the fixed sleeve 16 to provide for and take care of any expansion or contraction variation of the various parts involved and also to take care of any manufacturing variations in the spacing of the locking means on the letters themselves. The only way that the track 20 can be removed once it is positioned in

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the sleeve 16 is by sliding it sideways or laterally and thus if there is any damage to or ill-fitting involved in the track itself, it can be removed readily by sliding it laterally and replacing it with a new track section or strip. If a stop is required or desired at the ends of the sleeve 16, then this may be provided in any suitable way such as a screw in the bottom of the groove of the sleeve or a staple over the opening of the groove of the sleeve on the face of the panel, or other suitable arrangement.

The letters 12, 14 and 15 shown in FIGURE 1 and in fragmentary elevation in FIGURE 4 are merely illustrative of all of the letters, upper and lower case, figures, characters, designs and other representations which can be removably secured to the panel 11.

The letters 12, 14 and 15 are raised and are molded or cast to be hollow internally. They are preferably plastic or any suitable transparent or translucent material. In this manner each of the letters is formed with sidewalls 30 which are continuous with the shape of the letter or symbol and having a bottom terminating edge 31 which is substantially parallel to the face of the letter and is intended to abut or be slightly spaced from the surface of the panel 11. Because of the enormous cost involved in making full sets of letters and characters of various sizes in both upper and lower case, and any other characters or symbols which may be involved, they are molded or cast in uniform height with thinwall sections in order to make the letter as light in weight as possible and use a minimum quantity of material.

In order to securely lock the letters or characters onto the face of the sign the sidewall 30 of each of the letters and characters is pierced with a circular opening along the terminating edge 31. These circular cuts 33 are spaced along the terminating edge 31 on the same centers as the axis of track 20. In cutting the openings 33 there is an opening 34 through the edge 31 to permit the entry of the arcuate segments 24 and 25 when compressed together. Mere pressure of the letter when putting the same in place on the panel 11 will force the flexing of the arcuate members 24 and 25 together to permit their passage therethrough and into the opening 33. Roughly, the outer diameter of the arcuate members 24 and 25 conform with the inner diameter of the holes 33 in their normal position so that when the letters are in place there is no tension on the track members at any time, or any spring on the letters to cause any tension, and yet the letters are locked firmly in position. Furthermore, it is to be noted that since there is no tension on the arcuate members 24 and 25 of the track or the letters themselves, the letters when in position can be moved laterally with only slight frictional resistance, without in any way disturbing the secure locking of the letters on the tracks or buckling the sidewalls thereof. As shown in FIGURE 4, when the letter is in position the lower terminating edge 31 abuts the outer surface of the overhanging flanges 18 and it is only the thickness of the sleeve 16 which separates the letter from the surface of the panel 11. As before indicated, this is usually a maximum of $\frac{3}{32}$ of an inch and is not great enough to permit the build up of wind and rain pressures within the hollow interior of the letter or cause any inadvertent loosening of the letters when in position. Furthermore, the frequency of the spacing of the tracks 20 on the signboard panel 11 insures that the holding is firm and provides an adequate area for distribution of weight so that any weight to the letter or the grouping of the letters is not excessive and is not even so much as to cause any sagging or distortion of the track 20 itself. In this way any damage to the track is greatly minimized, if not eliminated. As will be seen in FIGURE 3, the base 21 of the track 20 is not as wide as the space provided in the sleeve 16. This permits a limited or controlled vertical movement of the track within the sleeve 16 to take care of expansion or contraction variations or irregularities in the spacing of the locking apertures 33. This greatly facilitates the practical use of signs made in

accordance with the disclosures herein. There is no need for the letter to be of flexible material or to flex in any manner.

The removal of the letter is simple and merely involves an outward pull which is sufficient to compress the elasticity of the members 24 and 25 in order to release the letter from the locking apertures 33 on the sign face. The force exerted at any one area is distributed over a substantial distance of track 20 and therefore minimizes any chance of damage during the taking off or removal of a letter or character.

The structure disclosed also provides a secondary method of attaching special display panels to the signal or panel 11 surface. With reference to FIGURE 7 there is shown a solid display panel 40 on which display material such as the letter "T" 41 may be painted or otherwise secured. The panel 40 has intumed overhanging marginal edges 42 which are complementary to the overhanging margins 18 of the sleeve 16. By removing the track 20 the upper flange 42 of the panel 40 is hooked in to the sleeve 16 and the lower intumed marginal edge 42 is then snapped into position in a lower sleeve 16. Thus the panel is securely attached on the face of the panel 11 and substantially parallel thereto. It is apparent that it can be moved laterally into position without in any way disturbing the secure locking of the panel 11. Because of the easy removal of the track 20 from any of the sleeve members or any portion thereof, the use of any size panels extend the practical uses of such a signboard beyond anything heretofore presented.

In FIGURE 5 an alternate form of panel 11 is shown as 11a. The thickness is increased and horizontal channels 45 are formed or cut in the face of the panel 11a of the precise depth to accommodate the over-all thickness of the sleeve 16. Thus, the outer surface of the intumed flanges 18 become flush with the face of the panel 11a. When the track 20 is inserted and secured in position it is apparent from FIGURE 4 that the locking of a letter thereon brings the terminating bottom edge 31 of the letter in abutment with the face of the sign panel itself.

In FIGURE 6 still another form of panel 11b is shown. In this case the panel is of the same thickness but the depth of the channels 46 to receive the sleeves 16 is made by pressing them into the surface and distorting the rear surface. In all other respects the operation is precisely that described in connection with FIGURE 5.

While the terms letters and characters have been used herein, it is to be understood that these are generic terms and include not only letters of the alphabet in any language, but also includes numerals, symbols, designs, silhouettes, punctuation and so on.

I claim:

1. A signboard having removably secured letters thereon in combination, a panel, horizontal equally spaced sleeve mounts secured on the face of said panel, tracks loosely retained in said sleeve mounts to accommodate variations in the individual openings of the letters and panel dimensions, said tracks having outwardly directed

spaced members with complementary arcuate terminal portions projecting through the sleeve mounts and above the face of said panel, raised hollow letters having continuous vertical sidewalls integral with the letter, circular openings in the sidewalls of said letters along the marginal edges thereof having centers corresponding to the spacing of said tracks and of a diameter slightly larger than the diameter formed by said arcuate portions of the track, with an opening through the marginal edge less than the said diameter, said openings removably engaging the projecting arcuate portions of the said track to hold the letters on the sign and closely adjacent to the surface of the panel.

2. The signboard of claim 1 wherein the said panel, sleeve mount, track and the letters are each translucent and illuminated from the interior.

3. The signboard of claim 1 wherein the track is loosely retained in the sleeve mount with limited movability both vertically and laterally and removable from the sleeve mount in a horizontal direction only.

4. The signboard of claim 1 wherein the panel is initially formed of a translucent material with equally spaced grooves in position to receive the sleeve members flush with the surface of said panel.

5. The signboard of claim 1 wherein the opposed arcuate members of the track are compressed to allow entry thereof in the holding openings of said letters but return to their unstressed position within the said openings when the letters are secured on the face of said panel, and wherein the track adjusts to accommodate the space variances at each point of attachment.

6. A signboard for removably securing letters thereon in combination, a panel, horizontal equally spaced yieldable sleeve mounts secured on the face of said panel, said sleeve mounts having inwardly directed marginal flanges spaced from each other, a display panel having horizontal depressions complementary to and for receiving and holding said sleeve mounts, said sleeve mounts adapted to loosely receive and retain holding tracks for removable letters.

7. The signboard of claim 6 wherein all of the members are each translucent and illuminated from within.

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EUGENE R. CAPOZIO, Primary Examiner

WENCESLAO J. CONTRERAS, Assistant Examiner

U.S. Cl. X.R.

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