March 12, 1940. W. S. WAGNER 2,193,502

DISPLAY DEVICE

Filed Dec. 14, 1938

Fig. 1.

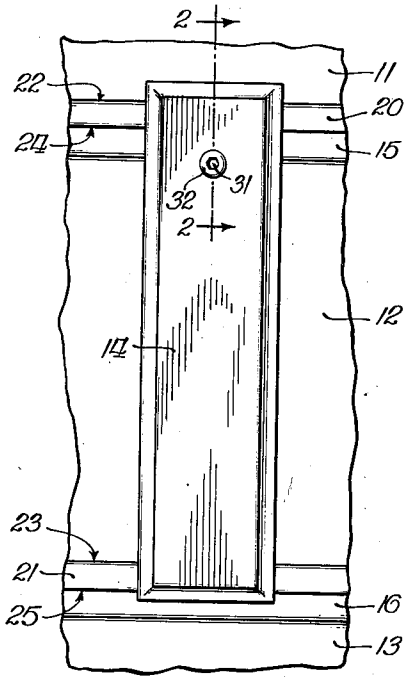


Fig. 2.

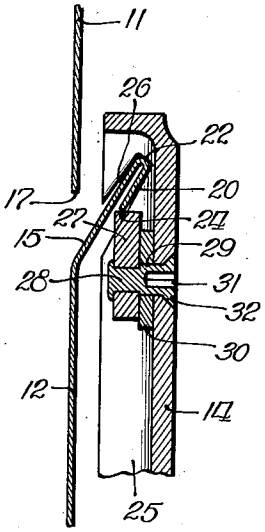


Fig. 3.

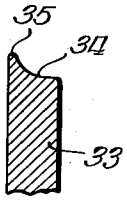


Fig. 6.

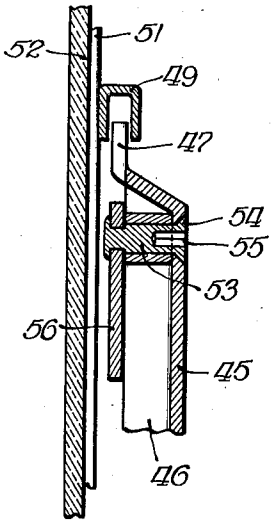


Fig. 5.

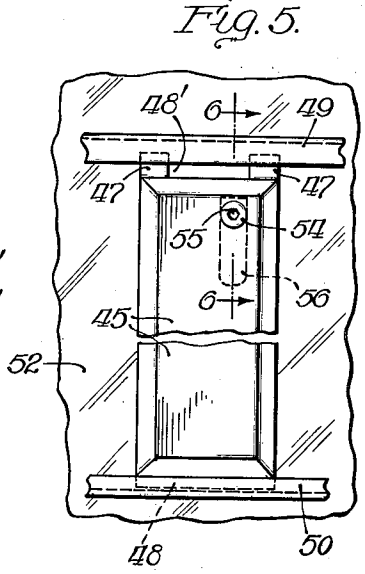
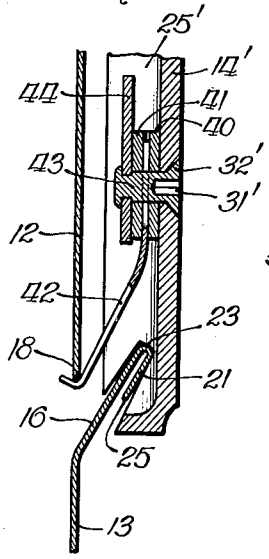


Fig. 4.



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UNITED STATES PATENT OFFICE

2,193,502

DISPLAY DEVICE

Walter S. Wagner, Chicago, Ill., assignor to Wagner Sign Service, Incorporated, Chicago, Ill., a corporation of Illinois

Application December 14, 1938, Serial No. 245,679

5 Claims. (Cl. 40—140)

This invention relates to display devices of the class comprising a display panel and so-called silhouette letters or characters disposed in front thereof, and is particularly concerned with means for positively locking such letters or characters in the desired mounted display position. The terms "letters" or "characters" or equivalent expressions used herein are intended to designate any structure used for display against a panel, including letters, figures, signs or combinations thereof forming a desired message.

A brief review of the prior art is rendered below in order to furnish a basis for a better understanding of the invention and its objects and features.

Letters and characters or the like, in brief, objects such as noted above which are to be displayed against a suitable background, may be equipped with peripheral flanges provided with inclined notches for engagement with and support on rods or wires or the like disposed in front of and in parallel with a display panel. Channel members may be used in place of the rods or wires, and the letters or sign units may be equipped in this case with lugs or ledges extending from the top and bottom margins thereof for engagement with and support on the channel members. The display panel may be mounted on one side of a box containing illuminating means. The letters or characters form a desired message and appear against the panel in silhouette outline. Structures conforming to these principles are disclosed in the United States Patents No. 2,048,040 issued to Erwin Wagner, July 21, 1936, and No. 2,119,430, issued to F. F. Garner and G. A. Auer, May 31, 1938. The rods, wires or, as the case may be, the channel members for supporting the letters or characters are in these embodiments separate from and spaced from the surface of the corresponding display panel.

Other known structures, for example, those described in my co-pending application, Ser. No. 213,603, filed June 14, 1938, propose the use of a composite display panel comprising a number of strips, plates or sectional panels, the upper edges of which are bent forward out of the plane of the display surface, thereby providing inclined edges which, in a sense, take the place of the wires or rods of the former disclosures for supporting the letters or characters.

In all these structures the letters are held on their supporting means by their own weight. The removal is accomplished simply by lifting a letter from engagement with its supports. A locking action is to some extent manifest in the letters having inclined, slightly tapering notches, as described in the previously mentioned Patent No. 2,048,040, the notches engaging the wires with a gripping action, but this action is not positive, in the sense that it would inhibit or prevent an unauthorized removal or accidental displacement of the letter due to the play of unforeseen or unusual outside forces. No locking action whatever is manifest in the letter structures having marginal top and bottom lug-like extensions, and such letters or characters respond readily to wind striking the sign and rattle noticeably against their supporting means.

The present invention overcomes these drawbacks. Each letter or character unit is provided with a simple lock comprising cam means for positively holding it in its mounted display position. Unauthorized removal is thereby, for all practical purposes, prevented since an unlocking operation is required, and possibility of accidental displacement is likewise eliminated. Once the letter or character is locked in place in its display position, it forms a unitary structure with the entire sign which is sufficiently rigid to withstand the force of any predictable outside condition that might tend to move or dislodge it with respect to its supporting means. It is possible, therefore, to use very lightweight material for the manufacture of these letters and to keep the amount of material in each letter at an absolute minimum.

The objects and features intimated in the foregoing outline will now be described in detail with reference to the accompanying drawing, wherein

Fig. 1 is a fragmentary view of a sign with a letter provided with the novel lock;

Fig. 2 shows a section along line 2—2 of Fig. 1, with the details of the locking means on an enlarged scale;

Fig. 3 represents a section through a modified cam structure that may be employed for the invention;

Fig. 4 illustrates a section similar to the one shown in Fig. 2, but showing a differently constructed lock; and

Figs. 5 and 6 show a front view and a section, respectively, of a modification for use with letters or characters having top and bottom marginal lug extensions instead of inclined notches in the peripheral flanges.

The invention is illustrated in the drawing, Figs. 1–4, inclusive, as applied to signs of the general character disclosed in my previously mentioned co-pending application, Ser. No. 213,603. The sign is equipped with a composite

display panel comprising a number of strips, plates, or sectional panels, three of which are fragmentarily shown at 11, 12, and 13. These plates or sectional panels may have a desired surface finish and are disposed so as to form a substantially coextensive frontal plane constituting the display surface of the sign. The upper edges of the panels, for example, the panels 12 and 13, are bent forward out of the plane of the display surface to form carrier ledges 15 and 16 for supporting letters or characters such as 14 or 14'. These details of the sign construction conform to the disclosure in my co-pending application wherein the carrier edges, such as 15 and 16, are shown as simple straight edges extending horizontally along the display surface and each covering up the lower edges, such as 17 and 18, of the adjacent panels. The upper forwardly inclined ledge 15 of the panel 12 thus covers the lower edge 17 of the panel 11, as shown in Figs. 1 and 2, and the upper forwardly inclined ledge 16 of the panel 13 covers the lower edge 18 of the panel 12, as shown in Figs. 1 and 4. The spaces between the sectional panels are thus concealed from view.

The carrier ledges 15 and 16 of the present structure differ from those shown in the co-pending application in the provision of a locking edge extending parallel to and below the carrier edge and constituting a means against which the cam lock of this invention can operate in an embodiment such as particularly illustrated in Fig. 2. It will be seen from this figure that the end of the ledge 15 is bent upon itself, as shown at 20; likewise the end of the ledge 16 (Fig. 4) is bent upon itself, as shown at 21. Each ledge therefore has a straight upper carrier edge, as shown at 22 and 23, and a lower locking edge, as indicated at 24 and 25. The strip of material 20 and 21, which is bent upon the corresponding inclined ledge 15 or 16, is slightly spaced from the latter, as shown in the drawing.

The lock for a letter or character may be constructed either in accordance with the embodiment shown in Fig. 2 or with the one illustrated in Fig. 4.

Referring first to the structure Figs. 1 and 2, the letter 14 which, for the sake of convenience, is shown as the letter "I", is provided with a peripheral flange indicated in Fig. 2 at 25, and in this flange are the tapering inclined notches such as 26 for cooperation with the upper ledge 15, and similar inclined tapering notches for cooperation with the lower ledge 16. The letter itself is equipped with a rotatable cam 27 which is riveted or otherwise attached to the shank 28 of the shaft having a shouldered central portion 29 surrounded by a spacer washer 30. The countersunk head 32 of the shaft engages a countersunk opening in the face of the letter. This head may be provided with a hexagonal or square opening 31 for operative engagement with a suitable key when it is intended to rotate the assemblage so as to actuate the cam 27. The opening in the cam for receiving the shank portion 28 may have a suitable polygonal shape so as to secure a firm attachment of the cam with the shank. The lock is shown in closed position, that is, with the edge of the cam 27 engaging the locking edge 24 of the supporting means. The letter 14 is thus securely locked in its mounted display position. The head 32 of the lock is substantially in the plane of the visual surface of the letter, and the appearance of the letter is thus not marred in any way. The finish of the head of the lock may conform to the surface finish of the letter.

A cam member 33 such as shown in Fig. 3 may be used in place of the cam member 27 shown in Fig. 2. The only difference appears in the configuration of the peripheral edge 34. Whereas this edge is curved so as to provide an annular edge 35 which locks in back of the edge 24 of the supporting means, the cam 27 has a straight edge which locks the letter merely by exerting an upward force against the carrier. If desired, the profile of the cam may also be made concave.

The device so far described may also be used for locking letters such as disclosed in the previously mentioned United States patent wherein separate supporting means, such as rods, wires or bars and the like, are used in place of the integral panel ledges disclosed herein. Structural details of these references are not shown herein, in order to avoid unnecessary duplications. It is understood, however, that the reference structures are to be considered part of the invention to such extent as may be required for explanatory purposes.

The modification shown in Fig. 4 may be employed in lieu of that shown in Fig. 2. The letter 14' may be in every respect identical with the one shown at 14 in the previous figures. In fact, the section shown in Fig. 4 may be a transverse section through the lower portion of the letter 14 shown in Fig. 1. In this case the locking device includes the countersunk head 32' having the hexagonal or square opening 31' and extending rearwardly through a pair of washers 40 and 41 which may be provided with suitable facing channels holding the spring 42. The eccentrically journalled disc 44 constituting a cam is attached to the reduced shouldered portion of the shaft 43. Assuming that the letter 14' is mounted in place with the locking device in the position in which it is shown in Fig. 4, the end of the spring 42 snaps in back of the edge 18 of the panel 12 and thus holds the letter against unauthorized removal. The cam member 44 may be similar to the cam member 27 shown in Fig. 2. When it is desired to remove the letter 14', the lock is rotated by a suitable tool so as to rotate the cam into its alternate position whereby the spring 42 is pressed back and releases the letter from locking engagement with the lower edge 18 of the panel 12.

The embodiment shown in Figs. 5 and 6 covers a sign structure wherein the letters, for example, such as 45, are each provided with a peripheral flange 46 and with marginal top and bottom lug-like extensions 47 and 48. These extensions engage channel members 49 and 50, as explained in the previously noted patents, the channel members being secured on frame members such as 51, which lie in front of the display panel 52. The upper lug extension 47 may be provided with a central opening 48'. The lock is similar to the lock already described and comprises a shouldered shank or shaft 53 and a countersunk head 54 in which is disposed a square or hexagonal opening 55 for receiving a suitable tool adapted to rotate the shaft 53. At the end of the shank is attached a locking member 56 corresponding to and taking the place of the cams used in the previous embodiments. When this member, which is shown in the form of a rotatable arm, is rotated to its alternate position, it moves into the space 48, separating the lug portions 47, and engages the inside face of the channel 49, pressing the entire letter down against the support 50, thus locking the letter in

mounted position. The locking member 56 may be made of any desired and suitable thickness and may also be made to project rearwardly and engage the channel member 49 at the edge of one of its legs instead of inside as shown.

The cam member or its equivalent may be in all embodiments a simple stamping having a straight peripheral edge. A machined cam having a profile such as shown in Fig. 3 may be used where necessary.

Changes and modifications may be made within the scope and spirit of the accompanying claims, wherein I have defined what is considered new and desired to have protected by Letters Patent of the United States.

I claim as my invention:

1. A character for display against a panel, comprising a generally channel-shaped body having a frontal face and peripheral flanges extending rearwardly therefrom, downwardly inclined notches in said flanges for mounting said character, a rotatable cam disposed substantially in alignment with the base of said notches, and means on the face of said character for rotating said cam relative to said notches.

2. In a sign, the combination of a supporting member with a character removably mounted thereon, comprising a cam member disposed in back of the face of said character for locking engagement with said supporting member, and means on the face of said character for operating said cam member.

3. A character for display in front of a display surface, comprising a generally channel-shaped body having a frontal face and peripheral flanges rearwardly extending therefrom, downwardly inclined notches in said flanges for mounting said character, spring means mounted in back of said character, a rotatable cam for actuating said spring means, and means on the face of said character for rotating said cam.

4. In a sign, the combination of a display panel with a character removably mounted thereon, comprising a spring member disposed in back of said character for locking engagement with said panel, a cam-like member for actuating said spring to release said locking engagement, and means on the face of said character for operating said cam-like member.

5. In a sign, a display panel, a pair of channel members disposed in front of said panel with the channels thereof facing each other, a character provided with luglike extensions at the top and the bottom thereof for insertion into said facing channels, a cam-like locking member in back of said character for locking engagement with one of said channels, and means on the face of said character for actuating said locking member.

WALTER S. WAGNER.