

Dec. 13, 1966

T. E. McCULLOUGH ET AL  
SCORE BOARD SIGN STRUCTURE

3,291,975

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2 Sheets-Sheet 1

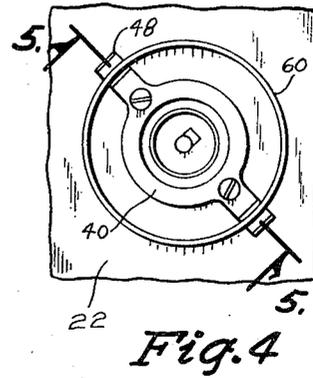
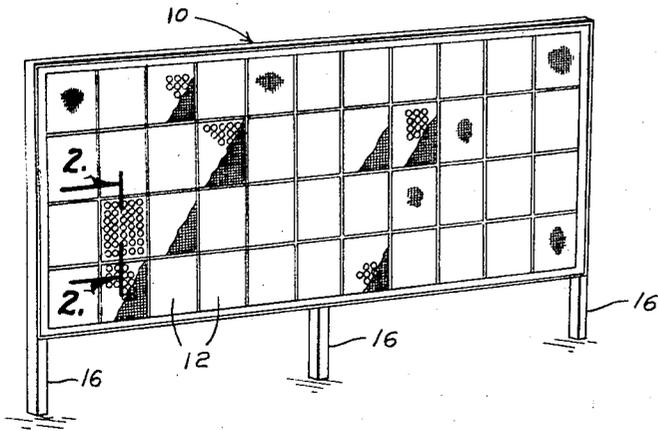


Fig. 1

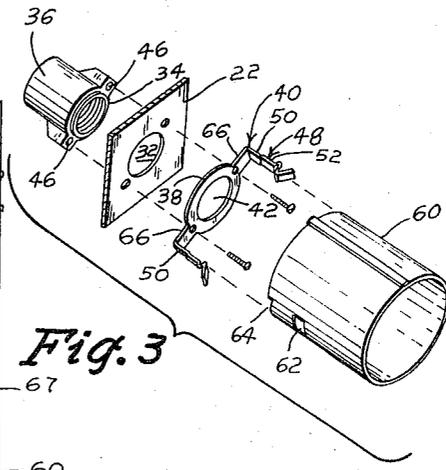
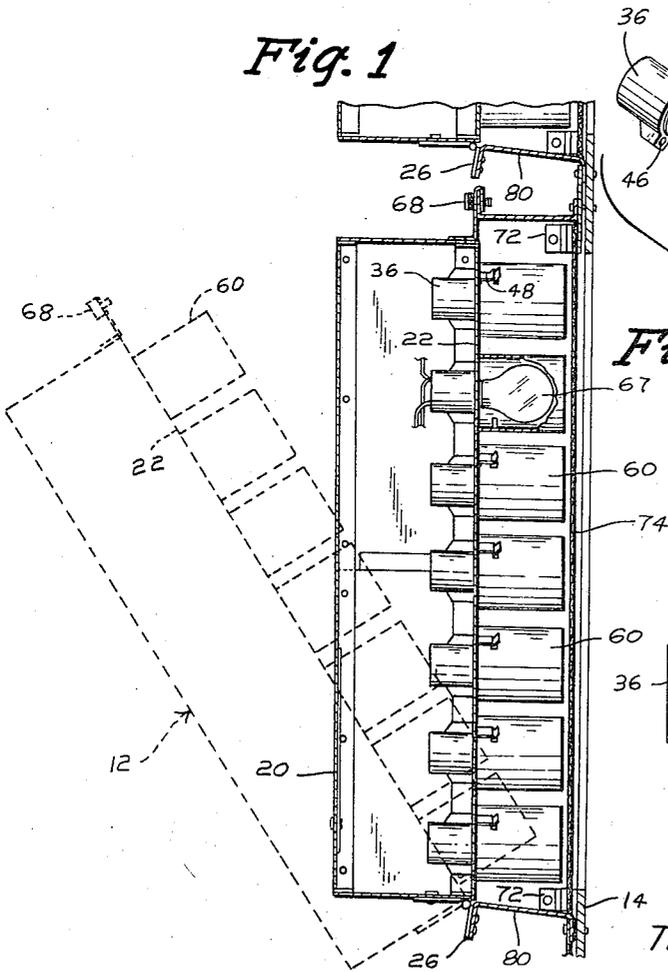


Fig. 3

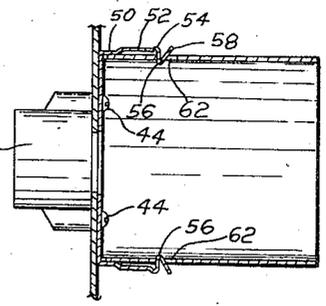


Fig. 5

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Fig. 2

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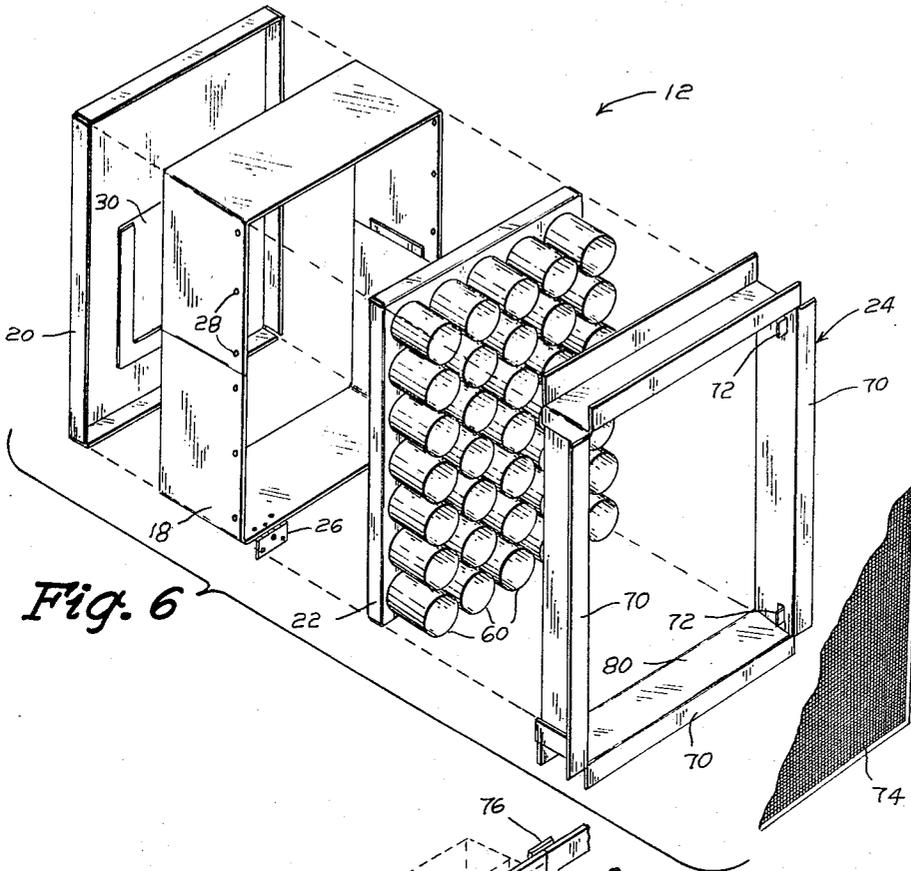


Fig. 6

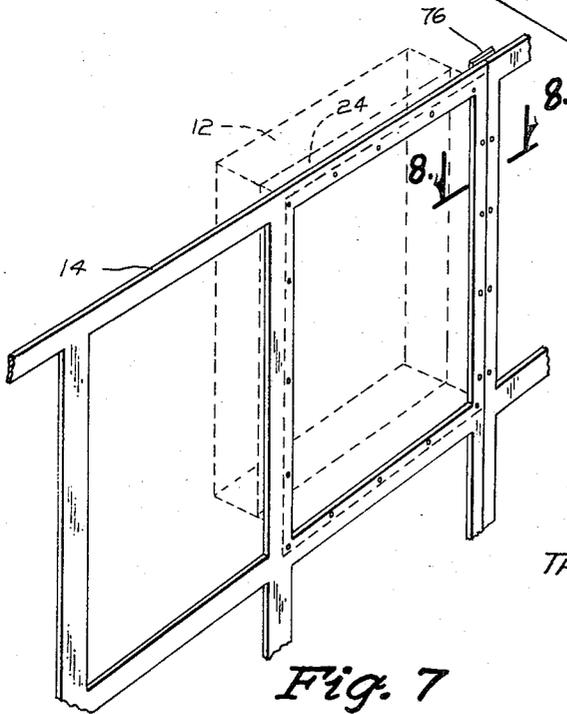


Fig. 7

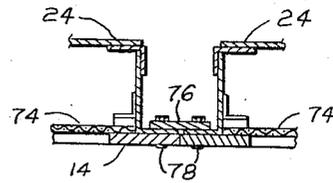


Fig. 8

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**SCORE BOARD SIGN STRUCTURE**

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8 Claims. (Cl. 240-11.2)

This invention relates to a score board sign structure and in particular to the individual light panel units and the light reflector units within each panel unit.

It is one of the primary objects of this invention to provide a score board structure which includes individual panel units which may be readily opened to provide access to the individual lighting elements contained therein.

It is a further object of this invention to provide a score board structure having individual panel units which in turn contain a plurality of individual lighting means enclosed by reflector elements which may be quickly and easily removed for replacing the lighting elements.

It is another object of this invention to provide a score board structure which may be quickly assembled and disassembled and in particular light reflector elements which may be snapped into place and by simple manual operation be removed from the panel units.

A still further object of this invention is to provide a signboard structure having a plurality of light panel units which are designed to prevent internal collection of moisture.

A further object of this invention is to provide a score board sign structure which is simple in design, economical to manufacture and refined in appearance.

This invention consists in the construction, arrangements, and combination of the various parts of the device, whereby the objects contemplated are attained as herein-after more fully set forth, specifically pointed out in the claims, and illustrated in the accompanying drawings, in which:

FIG. 1 is a perspective view of a complete and assembled score board sign structure in use;

FIG. 2 is a cross-sectional elevational view taken along line 2-2 in FIG. 1 showing in particular the components of one of the lighting panels and also the connection between adjacent lighting panels;

FIG. 3 is an exploded view of the light reflector assembly;

FIG. 4 is a top plan view of the light reflector assembly of FIG. 3;

FIG. 5 is a longitudinal cross-sectional view taken along line 5-5 in FIG. 4 of the light reflector assembly;

FIG. 6 is an exploded view of a light panel unit and the associated score board frame structure;

FIG. 7 is a front fragmentary perspective view of a portion of the score board structure showing in particular the cover plate sections or assembly and its connection to the individual light panel units and frame members; and

FIG. 8 is a cross-sectional view taken along line 8-8 in FIG. 7 showing in particular the details of the connection between adjacent channel units and frame members and their connection to the cover plate assembly.

The score board sign structure of this invention is referred to generally by the reference numeral 10 in FIG. 1 and comprises a plurality of light panel units 12 which are interconnected by a cover plate member 14 (FIG. 7). The assembled panel units 12 are supported in a conventional manner on posts 16 or the like.

Each of the individual panel units 12, as best shown in FIG. 6, comprises a housing enclosure 18 having a back plate 20 and a forward lighting panel base sheet member 22. The light panel unit 12 is then in turn pivotally connected to a frame unit 24 by the hinges 26 secured to the forward lower edge of the housing 18.

The back plate 20 is telescopically received in the rear of the housing enclosure 18 and secured by rivets, screws or the like. Similarly, the lighting panel base sheet member 22 is telescopically positioned in the forward side of the housing 18 and secured by conventional mechanical fastening means through the openings or holes 28 in the housing 18. In the back member 20, a removable plate element 30 is provided for closing an opening in the back member. By removal of the plate 30 a certain amount of maintenance work may be performed on the internal parts of the light panel unit 12 without further disassembling the unit.

On the forward side of the light panel base sheet member 22, as best seen in FIGS. 2 and 3, a plurality of holes 32 are formed and receive a shoulder portion 34 of a light socket element 36. The portion 34 when the light socket 36 is inserted into the sheet member 22 is generally flush with the forward or front face of the sheet member 22. Embracing the socket portion 34 is the base portion 38 of a clip 40 which is provided with a center opening 42 in alignment with the opening 32 in the base sheet 22. At diametrically opposite points on the base portion 38 of the clip, bolts 44 are provided which extend through openings in the sheet base 22 and are received in threaded wells 46 in the light socket 36. The clip 40 is generally U-shaped having leg elements 48 which comprise first portions 50 extending perpendicular to the plate 22 and the base portion 38. The portions 50 then jut outwardly and merge with portions 52 which are parallel to each other and also perpendicular to the base portion 38. At the outer free end of the portions 52, a convex shoulder 54 is provided which is integral with a V-shaped latch portion 56 extending horizontally inwardly parallel to the base portion 38. A free leg portion 58 of the V-shaped latch portion 56 extends outwardly to provide a finger gripping means. The entire clip 40 is made of spring material and the legs 48 are adapted to be yieldingly moved in either direction from their normal positions perpendicular to the base portion 38.

Each of the clips 40 are adapted to receive a cylindrical reflector member 60 which is provided with a pair of diametrically oppositely disposed side wall openings 62 for receiving the V-shaped latch portions 56 of the clip 40. Directly below the opening 62 in the cylindrical reflector 60, recesses 64 are provided along the lower peripheral edges diametrically opposite each other to embrace portions 66 of the base portion 38 and thereby provide a flush mating engagement between the base sheet 22 and the base peripheral edge of the reflector member 60 (FIG. 5). Also seen in FIG. 5 is that the diameter of the reflector cylinder 60 is of sufficient size to matingly engage the clip leg portions 50. It is further seen that the leg portions 52 of the clip 40 are spaced outwardly from the side walls of the reflector 60 to provide ample space for the latch portions 56 to flex into and out of engagement with the opening 62 in the reflector side walls. By simply moving the reflector tube or cylinder 60 longitudinally toward the base sheet member 22 the latch portions 56 will automatically seat in engagement with the openings 62. To remove the tube 60 it is merely necessary to place a slight pressure on the free leg portion 58 of the latch portions 56 thereby forcing the latch elements out of engagement with the opening 62.

In each of the reflector tubes 60 a light means such as an incandescent bulb 67 (FIG. 2) is provided and threadably received in the threaded light socket 36. It is thus seen that by removal of the two screws 44 the entire light reflector assembly including the light socket 36, the base sheet member 22, the clip 40 and the reflector tube 60 may be completely disassembled.

As indicated above, the light panel unit 12 is hingedly connected by hinges 26 to the associated frame member

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24. As seen in FIG. 2 by the dash lines, the light panel 12 may be readily pivoted rearwardly of the frame 24 to provide access to the light reflector assemblies. A removable head screw 68 is provided in the upper portion of the light panel unit housing 18 (FIG. 2) for locking engagement with the frame 24. Accordingly, removal of the head screw 68 will permit the light panel unit 12 to pivot rearwardly and downwardly of the frame 12.

Referring to FIG. 6, it is seen that the frame 24 is provided with outwardly extending flanges 70 along its forward side. Inwardly of the forward side, clip elements 72 are provided to support a screen sheet member 74 in closely spaced relationship to the outer open ends of the reflector tube 60 (FIG. 2). On the outside of the screen 74 the cover plate assembly 14 is secured to the frame units 24. To couple adjacent frame units 24 together, a clamp plate 76 has been provided (FIGS. 7 and 8) to bear against adjacent frame flange portions 70. Bolts or screws 78 are provided extending through the outer cover plate 14, the flanges 70 and finally the clamp plate 76 thereby holding the frames 24 and associated panel units 12 in their assembled relationship as shown in FIG. 1.

When the score board 10 is used outdoors where it is subjected to rain, snow or the like, water will possibly enter through the screen 74 and collect in the frame portions 24. Since the connections between the panel base sheet member 22 to the housing 18 are substantially sealed as well as the mountings between the light sockets 36 to the base sheet member 22, no water is likely to reach the housing 18 to interfere with the internal wiring of the light sockets 36. However, water otherwise would tend to collect in the frame units 24 except that the lower horizontal frame members 80 (FIGS. 6 and 2) are tapered forwardly and outwardly away from the housing 18 thereby permitting the water to drain quickly away from the sign structure.

Some changes may be made in the construction and arrangement of our score board sign structure without departing from the real spirit and purpose of our invention, and it is our intention to cover by our claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

We claim:

1. In a sign structure, comprising,

a vertical support frame having a plurality of openings at its forward side,

a horizontal row of light units comprised of a plurality of separate light panel units each including a housing enclosure, said light panel units being disposed along only the rearward side of said vertical frame and being independently pivotally secured to said supporting frame,

screen means on the forward side of said frame opposite to said panel units and covering said openings therein,

a plurality of light sockets in each of said housing enclosures,

said housing enclosures being pivotally secured to the rearward side of said frame to permit said housing enclosures to be selectively pivoted rearwardly with respect to said frame to permit access thereto without the removal of said screen means from said frame.

2. The device of claim 1 wherein a quick release reflector element one mounted on each of said light sockets, said reflector elements being cylindrical, elongated and operatively secured to said socket member and disposed concentrically therearound, and a light means provided in each of said socket members.

3. A score board sign structure, comprising,

a supporting frame having a forward and a rearward side, and an opening therethrough,

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a screen means secured to the forward side of said frame,

a plurality of light panel units, one edge of each of said panel units being pivotally connected to said rearward side of said frame, said panel units being adapted to be pivoted from a normally closed position adjacent said frame to an open position away from said frame,

a plurality of light sockets mounted in each of said panels,

a light means provided in each socket and facing said supporting frame,

a quick release reflector element embracing each of said light means and extending towards said frame and terminating adjacent said screen,

said reflector element being cylindrical and having a pair of small openings formed in the side wall at points diametrically opposite each other,

a U-shaped spring clip having an opening in its base, a pair of legs extending perpendicular to said base and each of said legs having latch means formed thereon for releasable engagement in said openings in said reflector element, and said light means extending through said opening in said base of said clip, and

a means for securing each of said light sockets and associated reflector elements together and to said panel.

4. A score board sign structure, comprising,

a supporting frame having a forward and a rearward side, and an opening therethrough,

a screen means secured to the forward side of said frame,

a plurality of light panel units, one edge of each of said panel units being pivotally connected to said rearward side of said frame, said panel units being adapted to be pivoted from a normally closed position adjacent said frame to an open position away from said frame,

a plurality of light sockets mounted in each of said panels,

a light means provided in each socket and facing said supporting frame,

a quick release reflector element embracing each of said light means and extending towards said frame and terminating adjacent said screen,

said reflector element being cylindrical and having a pair of small openings formed in the side wall at points diametrically opposite each other,

a U-shaped spring clip having an opening in its base, a pair of legs extending perpendicular to said base and each of said legs having latch means formed thereon for releasable engagement in said openings in said reflector element, and said light means extending through said opening in said base of said clip, said cylindrical reflector elements having a length measured perpendicular to said panel outwardly towards said frame which is in excess of the length of said light means measured along the same line outwardly from said panel.

5. A score board sign structure, comprising,

a supporting frame having a forward and a rearward side, and an opening therethrough,

a screen means secured to the forward side of said frame,

a plurality of light panel units, one edge of each of said panel units being pivotally connected to said rearward side of said frame, said panel units being adapted to be pivoted from a normally closed position adjacent said frame to an open position away from said frame,

a plurality of light sockets mounted in each of said panels,

a light means provided in each socket and facing said supporting frame,

a quick release reflector element embracing each of said light means and extending towards said frame and terminating adjacent said screen,  
 said reflector element being cylindrical and having a pair of small openings formed in the side wall at points diametrically opposite each other,  
 a U-shaped spring clip having an opening in its base, a pair of legs extending perpendicular to said base and each of said legs having latch means formed thereon for releasable engagement in said openings in said reflector element, said legs normally biasing said latch means into engagement with said openings in said cylindrical reflector, and said latch means being V-shaped with a free leg extending outwardly of said reflector manual for engagement to force said clip legs away from said cylindrical reflector to disengage said latch means from said openings and thereby remove said reflector from said socket to provide access to said light means, and  
 a means for securing each of said light sockets and associated reflector elements together and to said panel.  
 6. A score board sign structure, comprising,  
 a supporting frame having a forward and a rearward side, and an opening therethrough,  
 a screen means secured to the forward side of said frame,  
 a plurality of light panel units, one edge of each of said panel units being pivotally connected to said rearward side of said frame, said panel units being adapted to be pivoted from a normally closed position adjacent said frame to an open position away from said frame,  
 a flat base sheet member in said panel unit,  
 a plurality of light sockets mounted on the rear side of said base member, said base member having a plurality of openings and a portion of said sockets being received therein and being exposed on the front side thereof facing said screen,  
 a light means in each of said socket portions and extending towards said screen,  
 a quick release reflector element embracing each of said exposed socket portions and said light means on the front side of said base member, said reflector elements having an elongated side wall terminating adjacent said screen, each of said reflector elements being provided with a pair of spaced small openings in said side wall, and  
 a U-shaped spring clip having an opening in its base, said socket portion extending into said opening and said clip being positioned on the front side of said base member, said U-shaped clip having a pair of legs extending perpendicular to its base and closely adjacent said reflector, a latch means provided on the outer end of each leg for releasable engagement in said openings in said reflector element, said legs normally biasing said latch means into engagement with said openings in said reflector, and said latch means being substantially V-shaped with its free leg extending outwardly of said reflector for manual engagement to force said clip legs away from said reflector to disengage said latch means from said openings and thereby remove said reflector from said socket to provide access to said light means.  
 7. A score board sign structure, comprising,  
 a supporting frame having a forward and a rearward side, and an opening therethrough,  
 a screen means secured to the forward side of said frame,  
 a light panel unit having one edge pivotally connected to said rearward side of said frame, said panel unit being adapted to be pivoted from a normally closed

position adjacent said frame to an open position away from said frame,  
 a flat base sheet member in said panel unit,  
 a plurality of light sockets mounted on the rear side of said base member, said base member having a plurality of openings and a portion of said sockets being received therein and being exposed on the front side thereof facing said screen,  
 a light means in each of said socket portions and extending towards said screen,  
 a quick release reflector element embracing each of said exposed socket portions and said light means on the front side of said base member, said reflector elements having an elongated side wall terminating adjacent said screen, each of said reflector elements being provided with a pair of spaced small openings in said side wall, said wall also having a pair of notches in its inner peripheral end edge,  
 a U-shaped spring clip having an opening in its base, said socket portion extending into said opening and said clip being positioned on the front side of said base member, said U-shaped clip having a pair of legs extending perpendicular to its base and closely adjacent said reflector, the base of said clip having portions connecting the portion having the opening therethrough to the pair of legs, said pair of portions adapted to matingly engage said flat sheet base member and be received in said recesses in said reflector element, a latch means provided on the outer end of each leg for releasable engagement in said openings in said reflector element, said legs normally biasing said latch means into engagement with said openings in said reflector, and said latch means being substantially V-shaped with its free leg extending outwardly of said reflector for manual engagement to force said clip legs away from said reflector to disengage said latch means from said openings and thereby remove said reflector from said socket to provide access to said light means, and means secured to said pair of clip portions and extending through said flat base sheet member into engagement with said light socket to hold said socket, flat sheet base member and clip securely together.  
 8. In combination, a light socket and a quick release reflector element,  
 said reflector element being cylindrical and having a pair of small openings formed in the side wall at points diametrically opposite each other,  
 a U-shaped spring clip on said socket having an opening in its base, the base of said spring clip being in between said socket and said reflector element, a pair of legs extending perpendicular to said base and each of said legs having latch means formed thereon for releasable engagement in said openings in said reflector element, and said light means extending from said socket, thence through said opening in said base of said clip and into the interior of said reflector element.

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