

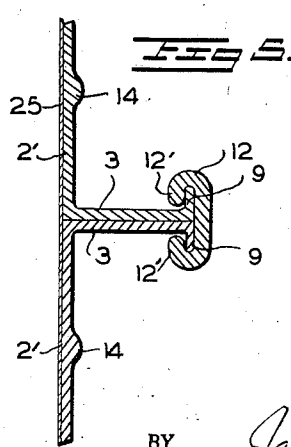
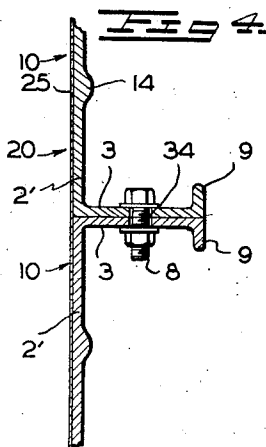
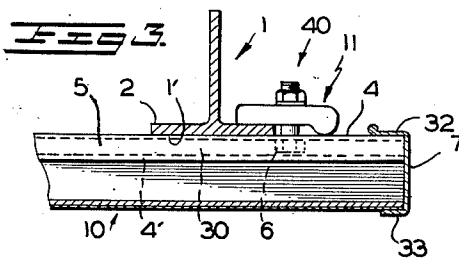
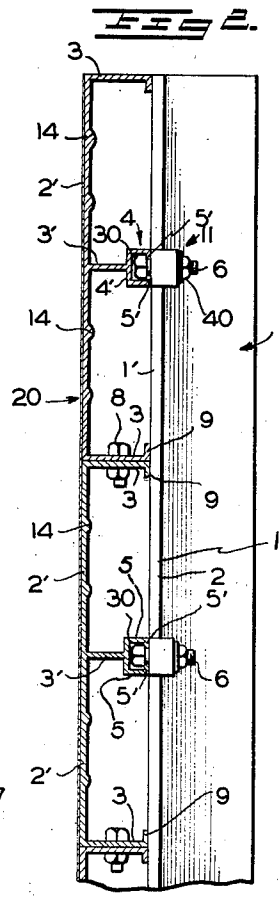
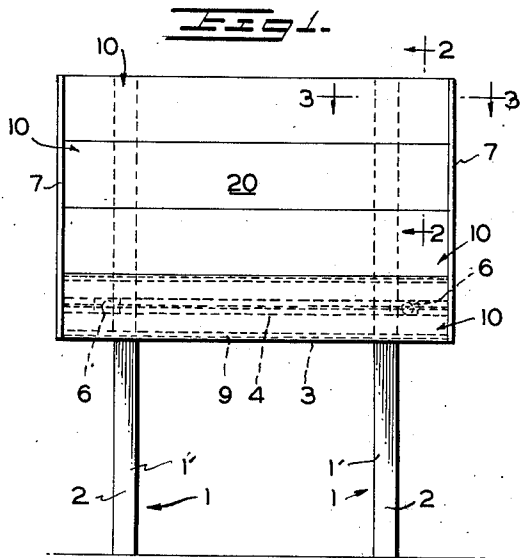
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ROAD DISPLAY DEVICE

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2,806,308

ROAD DISPLAY DEVICE

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This invention relates to display devices. More specifically, this invention relates to highway signs, such as highway warning and directional signs, wherein the sign includes one or more flat surfaces adapted to receive various types and combinations of indicia forming compositions, elements, paints, fluorescent materials, and the like.

With the advent of modern super highways and the attendant increase in speed of the vehicles which traverse the same, the problem of providing such highways with adequate warning and/or directional signs as well as display devices of the advertising variety has become exceedingly important. It will be appreciated that the speed of the vehicles is such that those riding in the vehicles get only a more or less fleeting glance at the highway signs. Consequently, a large surface area must be presented to the view of the person relying on such signs for information or advice as to road conditions and road direction as well as advertising information.

Of equal importance is the fact that such display devices or signs be so constructed as to effect a pleasing appearance and exceptional resistance to deterioration caused, for example, by the corrosive action of exhaust fumes and exposure to the elements.

Further, the signs as heretofore known have been extremely expensive to erect as well as maintain and have involved the use of materials such as steel, iron, wood and the like, all of which are particularly susceptible to the corrosive or deleterious action of the weather as well as exhaust fumes, and additionally, to attack by insects.

Many of the display devices used heretofore are unsightly in that they involve a considerable amount of structural support and bracing, all of which detracted from their appearance. In addition, considerable effort as well as expense was involved in changing or modifying any indicia that might be placed on the display surface exposed to the public view.

All of the above, as well as other deficiencies in present day highway signs are obviated by use of the novel highway sign of the instant invention.

Accordingly, it is a primary object of the instant invention to provide a novel display device wherein the elements making up the structural components thereof can be readily fabricated for ready assembly and installation. In addition, these structural components are such that they are not subject to the ordinary deleterious effects to which such devices are generally exposed.

Another object of the instant invention is to produce a novel display device wherein an indicia bearing surface thereof may be changed, modified or rearranged with a minimum amount of time and effort, and wherein the required action may be accomplished by one person without the use or necessity of special tools, paints and the like.

A further object of this invention is to provide a novel knockdown display device made up of novel interfitting and readily assembled parts, which parts can

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be readily stored and transported in a minimum amount of space.

An additional object of the invention is to produce a display device wherein a single planar continuous face for indicia receiving purposes is presented to the public view and wherein the display face may be made up of a group or groups of light, readily handled sections which may be added or removed to the display structure with facility and ease.

Still another object of the invention is to produce a novel display device wherein the material forming the receptive surface for the indicia forming elements is such as to be readily adaptable as a base for a variety of materials ranging from attached papers and metallic foils to luminescent and/or fluorescent paints, tapes, regular paints and the like.

Another object of the instant invention is to provide a novel highway sign which is fabricated of readily available elements and which is of sufficient strength and durability to provide resistance to wind damage and the necessary lasting qualities not heretofor furnished by the prior art devices.

These and other objects of the invention will become more readily apparent from an inspection of the appended drawings when considered in the light of the following detailed description wherein:

Fig. 1 is a front elevational view of a display device, such as a highway sign, constructed according to the instant invention, with certain parts thereof being shown in dotted lines for the sake of clarity;

Fig. 2 is a partial and enlarged side elevational section of the display device shown in Fig. 1 when taken along the line II—II thereof;

Fig. 3 is a partial and enlarged top view taken along the line III—III of Fig. 1;

Fig. 4 is a partial and enlarged sectional view taken through the joint between certain adjacent extruded sections making up the display device and discloses the fastening means used in one embodiment of the instant invention for securing the sections together; and

Fig. 5 is a view similar to Fig. 4 in showing an alternative form of fastening means for use in clamping adjacent sections of the display device together.

Considering in particular Figs. 1 and 2, it may be seen that the instant display device may be generally comprised of a pair of horizontally spaced vertical support members 1. These support members may be in the form of a T-shaped metallic section, or alternatively, an I-beam section such that it is provided with a flange 2 which has an outside face 1' disposed in a vertical plane normal to the plane of greatest magnitude of the support. The supports 1 are so arranged that their flat facing surfaces 1' are disposed in the same vertical plane. Though not specifically shown in the drawings, it is apparent that a series of crossed bracing elements or any such bracing arrangement such as is conventional in the structural design arts may be used to rigidify the vertical members 1 should such rigidification be necessary. It will be recognized, however, that depending on the type or cross-sectional configuration that may be applied to the support, the members may be sufficiently rigid without additional bracing as has been described.

The overall display surface is formed from a series of metallic extruded sections 10, preferably formed from aluminum, of a suitable thickness and alloy. These sections are stacked or superposed one upon the other so that they are in substantial vertical alignment with each other. When these sections are thus arranged they present a common planar indicia bearing surface designated in the drawings as 20. Specific reference is made to Fig. 2 wherein it may be seen that each of the sections 10 is generally channel-shaped in cross-section. The cross-

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sectional shape would thus include a web member 2' having spaced marginal flanges 3, 3 which are disposed at an angle normal to the web portion. Flanges 3 include, at their rearmost terminal edges, inwardly turned marginal feet designated as 9. Reference is made in particular to Fig. 4, wherein it may be seen that the plane of disposition of the inwardly turned marginal feet 9 is spaced from, but parallel to the plane in which the face of the web portion 2' of the extruded section is disposed.

Disposed intermediate of and in symmetrical relation with respect to the marginal flanges 3, 3 is a slotted fastening member 4 generally C-shaped in cross-section and anchored by means of the horizontally disposed and longitudinally extending stem element 3' as indicated clearly in Fig. 2, to the web member 2' and preferably formed integrally therewith.

Each C-shaped fastening member 4 is defined by a pair of spaced walls 5 interconnected in a vertical plane as viewed in Fig. 2 by a further expanse of material identified clearly by the reference numeral 4'. The walls 5 terminate in inwardly turned lip elements 5' which face each other. Lip elements 5' are spaced from each other in a direction paralleling the expanse of metal 4' to define an elongated slot 30. Thus, it may be seen that when a suitable fastener element, such as a bolt member 6, is inserted within the slot 30, the head thereof will bear against the inwardly turned lip portions 5' of the side walls 5. At the same time, the entire fastener element may be slid longitudinally of the greatest extent of the extruded section in such a manner as to be positioned in any desired position with respect to the slot 30. The fastening element may be tightened with ease due to the fact that the dimensional selection of the space between the respective wall members 5, 5 is such that the head of the fastener may be inserted therein with at least two of the usual square or hexagon-like surfaces abutting the walls 5, 5. Thus, it may be seen that the fastener element 6 will project rearwardly of the extruded section 10 to an extent sufficient to permit the insertion of the bolt in a clamping member 11.

As may be seen from an inspection of Fig. 3, the actual clamping member 11 may comprise a generally L-shaped extrusion being suitably apertured to be passed over the fastener means 6. The extruded clamping elements 11 are fixed with respect to the vertical standards in such a manner that each has one leg of the L in bearing engagement with the rear surface of the flange 2. The other leg of clamping member 11 is in bearing engagement with the inwardly turned lip portions 5' of the box-shaped section 4 carried by the members 10. Suitable washer and nut means 40 may be then applied to the bolts 6 in the usual manner and be effective to cause the head of each of the bolt elements 6 to be drawn against the inwardly turned lip portions 5' and in turn against the flat surface 1' of the support 1, thereby clamping the sections 10 and standards 1 in fixed relation with respect to each other. Location of the fastening means for securing the sections 10 to the supports 1 behind the exposed surfaces of the sections makes available the greatest amount of display area possible in signs of this type.

By use of the fastening means 6 and 11, provision is made for adjustability of the extruded sections 10 with respect to the supports 1 in either a vertical or horizontal position, or both, or at angles greater or less than 90°. Thus, the sections 10 may be adjusted individually in such a manner that in all instances the sections 10 can be disposed in a horizontal plane regardless of any position that might of necessity be imposed on the support members 1. The size of the overall sign can also be readily increased or decreased merely by adding or subtracting one or more sections 10.

It is also to be noted that the edges of the indicia bearing surface 20 may be provided with a suitable snap-on end molding 7 which is preferably of sheet material having a certain amount of inherent resilience. As indicated

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particularly in Fig. 3, when the sections 10 have been properly positioned with respect to the supports 1 and to each other, the marginal side edges of the sections 10 will in most instances be in vertical alignment. The molding strip 7 may then be snapped over these marginal edges of the extruded sections 10. Because of the particular channel-shaped configuration of the molding strip 7, the separate flanges 32 and 33 thereof will be distorted to a certain extent from their normal planes to allow the edges of the extruded sections forming the indicia bearing face 20 to be confined within and frictionally engaged by the molding strip 7. The arrangement is effected to produce a pleasing appearance of the marginal edges of the display device.

In such cases wherein the angle of the posts 1 would not be truly vertical and wherein of necessity the edges of the extruded sections 10 would be stepped to a certain extent, such edges may be trimmed to produce a true vertical edge and the finishing or molding strip positioned thereon as has been previously described.

In an advantageous embodiment of the invention, additional fastening means may be provided to reinforce and properly position the various extruded sections 10 with respect to each other on supports 1.

As seen in Fig. 4 the flange portions 3 of the channel-shaped sections 10 may be provided with apertures 34 so as to receive bolt means 8 which would secure the juxtaposed flanges 3 of any two adjacent sections 10 in rigid relation with respect to each other. These apertures may be provided in each extruded shape 10 prior to the time of its installation or they may be drilled therein by the usual practices, upon assemblage of the sign sections on supports 1.

In a further advantageous embodiment of the invention, a quick fastening means may be employed in lieu of the bolt means 8 for drawing the opposed flanges 3 of adjacent sections together. This quick connecting device may take the form of a shallow C-shaped extruded section 12 wherein the space between the oppositely facing free ends 12' of the C-shaped element 12 are so designed as to be narrower than the total width of two of the marginal flange or leg portions 9 of the extruded sections 10. Thus, as may be seen in Fig. 5, a single longitudinal member may be applied to any two adjacent sections by simply sliding the element 12 onto the flanges 9 to effect thereby either a continuous longitudinally extending joint forming means, or a series of shorter individual clips connecting the adjacent flanges 9 of any two extruded sections. In those instances where the C-shaped member 12 is brought into engagement with the flange 2 of a support member, any tightening of the bolt means 6 will in turn draw the C-shaped member 12 tighter against the support as well as against the leg portions 9 of the sections 10.

With respect to the indicia bearing members 10 it is to be noted that, while not essential, it is preferable that certain portions thereof be enlarged in cross-sectional area on that face of the web portion facing in a direction opposite to that of the indicia bearing surface. The reinforcement may take the form of parallel ribs 14 extending longitudinally of the greatest longitudinal extent of the extruded sections 10. Such ribs 14 provide additional reinforcing, aiding to prevent fracture of the extruded sections due to wind or other loads which normally would tend to twist or flex the sections. Such reinforcement is critical where the indicia bearing surfaces are provided with material, such as "Scotchlite," a reflective material manufactured by the Minnesota Mining and Manufacturing Corporation. This material is reflective in nature and it also requires a rigid base upon which it may be applied. Any flexure of the base member or material causes separation of the reflective "Scotchlite" from the base structure, thus contributing to rapid deterioration of the indicia forming material, a highly undesirable effect. Although "Scotchlite" has been mentioned as a suitable

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indicia material 25 for covering the exposed surfaces of sections 10, other materials may also be employed such as plain or suitably embossed, or creped aluminum foil adhesively secured to the sections 10, or luminescent paints, etc.

Considering the finished device, it may be seen that rearrangement of the various extruded sections may be quickly and easily effected. All that is required is the loosening of fastening means 6, removal of fastening means means 8 and the individual section may be slipped laterally out of engagement with the supports 1 and any adjacent sections.

As has been stated, the extruded sections 10 are comprised of suitable aluminum or aluminum alloys and it is preferable that all of the components be comprised of such material to enhance not only the appearance of the finished display device, but also the resistance of the entire assembly to corrosion by any of the factors and conditions previously mentioned. The ease of assembly and disassembly of the various components of the highway sign of the instant invention provides for ready installation or removal of the sign at any time.

Having thus described the specific embodiments of the invention, it will be apparent that various changes and modifications may be effected without departing from the spirit of the invention, the scope of which is expressed in the following claims, wherein what is claimed is:

1. A highway sign or the like comprising support members, a plurality of vertically arranged, extruded metallic sections adjustably fixed to said support members, each of said sections being generally channel-shaped in cross-section so as to include a web and spaced parallel marginal flanges, said section further including a fastener receiving element disposed intermediate the respective flanges of said section, and said fastener receiving element being substantially coextensive with said marginal flanges, and fastening means engaging said fastener receiving element and a support member.

2. A highway sign as defined in claim 1 including further means fastening the marginal edges of adjacent sections together independently of said first mentioned fastening means.

3. In a highway sign and the like including support means, an indicia carrying element and means fastening said element to said support means, the improvement comprising a series of metallic sections forming said indicia carrying element, each of said sections being generally channel-shaped in cross-section so as to be provided with a web and spaced marginal flanges, one side of said web being unobstructed to present a flat surface, the opposite side of said web being provided with an outwardly directed member terminating in a generally box-shaped

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fastener receiving element, and fastening means engaging said fastener receiving means and the support means.

4. In a display device including support means, an indicia carrying element and means fastening said element to said support means as defined in claim 3, wherein each of said sections is comprised of an aluminum extrusion.

5. In the display device including support means, an indicia carrying element and means fastening said element to said support means as defined in claim 3, wherein said outwardly directed element is positioned intermediate and parallel to and is coextensive with said spaced marginal flanges.

6. In a knock-down highway sign or the like, the combination of a plurality of horizontally spaced, vertically extending supports, said supports including flat surfaces disposed in a common vertical plane, at least one elongated indicia carrying member fixed crosswise to said supports and extending horizontally a distance at least equal to the horizontal spacing between said spaced vertical supports, said indicia carrying member comprising an extruded metallic section generally channel-shaped in cross-section, said section including a vertically disposed web portion provided with a flat indicia bearing surface on one side thereof and an outwardly projecting marginal flange at each end of the web, an outwardly directed fastener receiving element positioned intermediate said marginal flanges and coextensive therewith, said fastener receiving element also being formed integrally with said web, and fastening means engageable with a support and said fastener receiving element.

7. A device as defined in claim 6 wherein said fastener receiving element is provided with inturned lip elements in bearing engagement with a support.

8. A highway sign as defined in claim 6, wherein the elongated indicia carrying member is fixed in horizontal and vertical adjustable relation with respect to said vertically extending supports.

9. A device as defined in claim 6, including vertically disposed, channel-shaped, resilient moldings snapped about the vertical marginal edges of the sign as defined by the aligned side marginal edges of adjacent sections.

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