June 23, 1936. F. A. AUSTIN 2,045,378

SIGN

Filed Jan. 27, 1936

Fig. 1

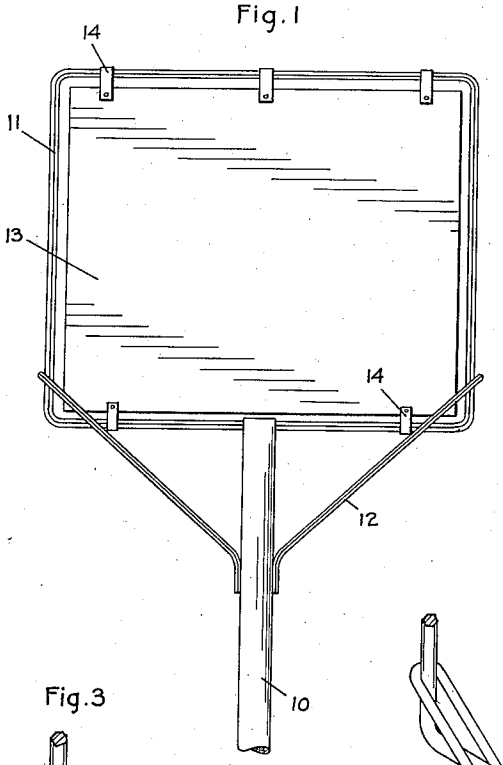


Fig. 2

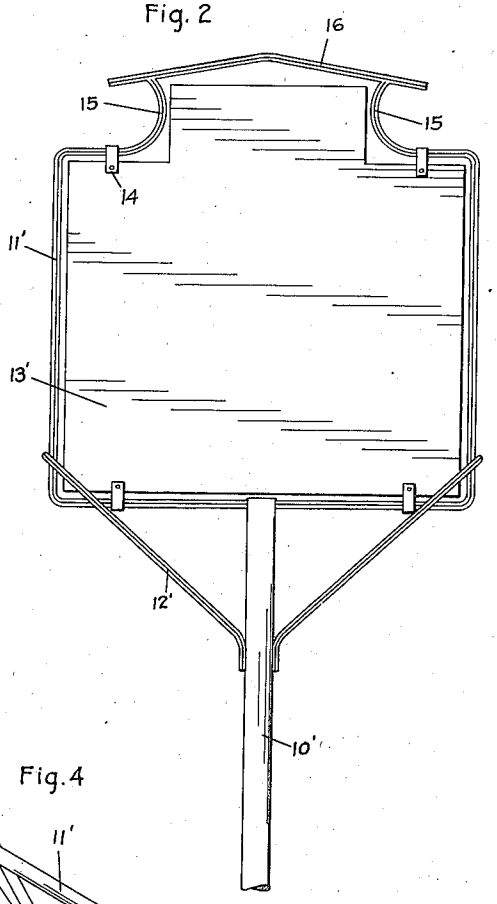


Fig. 3

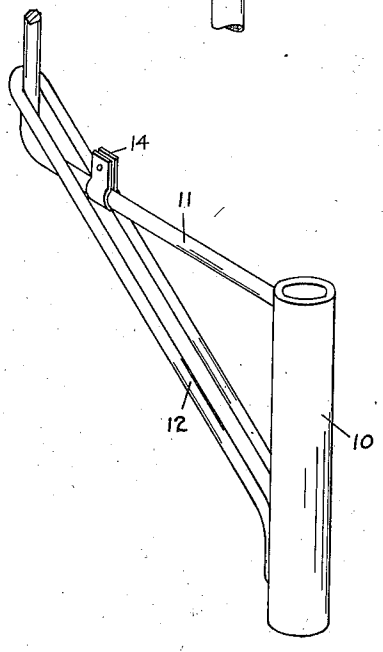
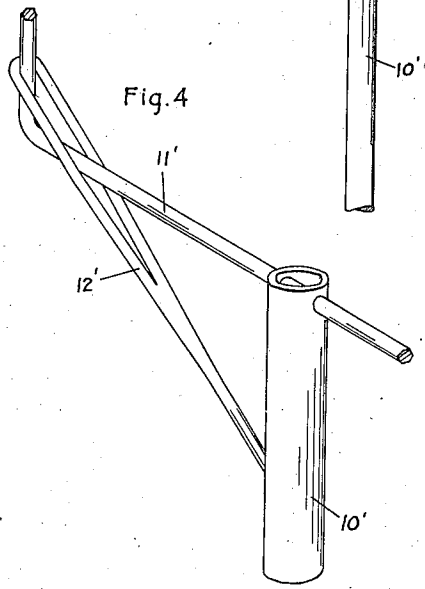


Fig. 4



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2,045,378

SIGN

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5 Claims. (Cl. 40—145)

My invention relates to signs and particularly to signs of the kind used along roads and highways for advertising or other purposes, the sign being visible to both drivers and pedestrians.

The primary object of the invention is the provision of a sign frame of low construction cost and constructed to resist all of the stresses normally encountered by signs of this kind.

Another object of the invention is the provision of a rectangular sign frame which is braced to stabilize the rectangular form without detracting from the appearance of the sign and without the application of the brace in a manner such as to obscure a portion of the sign.

Another object of the invention is the provision of a looped or U-shaped brace for the rectangular sign frame and so arranged as to provide a pocket for the sign panel at each of the lower corners of the sign frame.

Having in view these objects and others which will be pointed out in the following description, I will now refer to the drawing, in which

Figure 1 is a view in front elevation of one form of my sign.

Figure 2 is a front elevational view of a similar sign but showing two slight modifications.

Figure 3 is an isometric view of a fragment of the sign shown in Figure 1.

Figure 4 is an isometric view of a fragment of the sign shown in Figure 2.

The sign post 10 is shown as cylindrical and this post may be either tubular as shown or solid. Secured to the top of this post 10 is a rectangular sign frame 11 which may be formed from a rod of suitable length, the rod being either cylindrical or angular. In the Figure 1 construction the rod 11 is bent into rectangular form with the ends of the rod so spaced as to engage the post 10 on opposite sides thereof. In other words, the bottom side of the frame 11 plus the diameter of the post 10 is equal in length to the top side of the frame 11. The end portions of the frame 11 contacting with the post 10 are secured thereto in any suitable manner as by welding. If desired, the post 10 may be provided with sockets or notches for receiving the ends of the frame 11 which may then be welded to form an integral construction with the post 10.

The frame is quadilateral but it is a well known fact that the quadrilateral form is very unstable as compared with the triangular form in which there are three fixed points which cannot move relatively to each other as is the case in the quadrilateral form. Any oblique thrust on the quadrilateral and in the plane of the quadrilateral will cause distortion by moving two of the contiguous corners relative to the other two corners. Since this is one of the stresses which is very frequently encountered by some signs, it is important that the quadrilateral be so braced as to resist such stresses.

The brace 12 is in hairpin form to engage the frame 11 at one of the lower corners of the frame. This brace 12 is designed to straddle the bottom rail and a vertical rail of the frame 11. The two ends of the brace 12 are brought into intimate contact with the post 10 to which they are welded. It is very important also that the brace 12 be welded at its intersections with the bottom and side rail of the quadrilateral frame 11. This results in a rigid triangle at the lower corner of the sign frame and it stabilizes the two angles at the bottom corners of the frame. With these two angles stabilized it is impossible to distort the quadrilateral frame in the plane of the frame. The importance of this feature is that it resists stresses due to the fact that boys climb the road signs so that their weight exerts a vertical downward thrust which is continuously being shifted from side to side. Frames which are not braced to make them "boy-proof" very soon become distorted so that they must be replaced by new frames. My frame being thus braced will support the shifting weight of a heavy man without distortion.

Since the brace 12 is in hairpin form, it provides pockets for receiving the lower corners of the sign panel 13. The panel 13 is secured within the space enclosed by the frame 11. My preferred securing device is the U-shaped clip 14 which is provided with apertures. These clips embrace the frame 11 and overlap the edges of the sign panel to which they may be secured by any suitable fastening means passing through the apertures of the clips 14.

The construction shown in Figures 1 and 3 may be modified in a number of different ways. Two of these modifications are shown in Figures 2 and 4. The frame 11' is of general rectangular form but the bar is bent with its upper ends in curved form as shown at 15. A bar 16 is secured to the ends of the curved portions 15. This construction provides not only an ornamental appearance but it also provides additional space for advertising or other purposes between the two curved portions 15. In the assemblage of the Figure 2 form, the post 10' is provided with an aperture through which the rod 11' is passed to be welded to the post 10'. The braces 12' may also be modified with a loop for straddling the bottom and vertical rail

of the sign frame to be welded together at the intersections. In this case also the lower angles of the sign frame are stabilized in fixed rectangular form so as to reduce all stresses in the plane of the sign.

It is obvious that the two modifications above described are not interdependent. Either of them may be applied to the Figure 1 construction alone and regardless of the other. I therefore wish it to be understood that the two modifications may be applied individually to the Figure 1 construction or to any other construction involving similar sign frames.

To be durable, street and road signs must be designed to resist wind pressures which are the stresses most commonly occurring in connection with such signs. In most signs of this type the frame is secured to the posts at the bottom of the frame because of the undesirability of securing the post to both the bottom and top rails of the frame. While this would reenforce the sign frame, the upper portion of the post would occupy the sign space of the sign frame and it would materially detract from the appearance of the sign as a whole. The cost would be increased and even with this construction the wind pressure would result in a torque about the post as an axis. For these reasons the sign should be entirely above the sign post but this introduces complications due to the fact that the wind pressures tend to turn the sign over about a horizontal axis passing through the upper end of the sign post. The weakest portions of the frame are at the bends and the greatest stresses therefore occur at the weakest portions of the frame.

Prior constructions contemplate the use of braces extending from the post to the outer lower corners of the frame, these braces being sometimes extended upwardly from the corners to reenforce the side rails. The bends in the braces are thus contiguous to the bends in the frame and in the axis of bending due to wind pressure. Such construction merely adds a slight reenforcement to the side rails of the sign frame but it does not materially strengthen the sign frame against wind pressure. It is only by crossing the sign frame at its lower corners with a brace which is firmly secured to both the bottom and a side rail that a firm structure will be provided for effectively resisting wind pressures. The double construction of my brace is very effective regardless of the direction of the wind. If the brace 12 were single and on one side only, it would be more effective in one direction of the wind than it would be in the opposite wind direction.

In my drawing I have shown the post as being formed from tubular steel. This possesses certain advantages among which is the fact that used tubing may be obtained at a low cost. It is obvious, however, that any kind of a post such as a post made of angle steel or T-steel would serve the purpose provided it has sufficient strength to hold the sign under outdoor conditions. In fact, the tubular post may be modified in various ways depending somewhat on the form of the pipe available. If the pipe is sheared into pole sections the ends of the pipe are naturally crushed together and in such cases it is desirable to open the crushed end by means of a wedge which may be driven into the pipe to become a permanent closure for the opening to thus prevent the entrance of moisture.

My brace 12 or 12' thus has three functions: It braces the sign frame against the sign post; it braces the vertical rail against the bottom rail of the sign frame to prevent distortion in the plane of the sign; and it provides pockets for seating the sign panel at its lower corners.

Having thus described my invention in such full, clear, and exact terms that its construction and operation will be readily understood by others skilled in the art to which it pertains, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A sign including a polygonal open frame for the reception of a sign panel in the open space in said frame, a vertical sign post secured at its upper extremity to the bottom of said frame, and a U-shaped brace for stabilizing the polygonal form of said frame, said brace straddling a pair of contiguous rails of said frame at a point remote from the vertex thereof and being rigidly secured to both rails at the points of intersection and having a projection extending beyond said frame and into rigid contact with said post.

2. A sign including a polygonal open frame for the reception of a polygonal sign panel in the open space in said frame, a vertical post secured at its upper extremity to the bottom of said frame, and a brace for both stabilizing the form of said frame and for stabilizing said frame relative to said post, said brace having an extremity rigidly secured to said post and intersecting two of the contiguous side members of said frame at points remote from the vertex thereof and being rigidly secured to the side members of said frame at the points of intersection therewith.

3. A sign including a vertical sign post and a sign frame, said sign frame having a bottom rail secured in substantially horizontal position to said sign post at the upper extremity thereof, side rails projecting upwardly from the extremities of said bottom rail, an upwardly and outwardly inclined brace intersecting said bottom rail and embracing one of said side rails and having the lower end portion rigidly secured to said sign post, and rigid connections between said brace and said side and bottom rails at the points of intersection thereof.

4. A sign including a vertical sign post, a bottom rail secured to said sign post at the upper extremity of said post and transversely thereof, side rails projecting angularly from said bottom rail, and a pair of braces each extending from one of said side rails to said post at a point beneath said bottom rail and crossing said bottom rail and having a rigid connection with the bottom and side rails and with said post and functioning to maintain the rigid angular relation between said bottom and said side rails with respect to each other and with respect to said post.

5. In combination, a sign post and a sign frame, said frame including a bottom horizontal member secured to the upper end portion of said sign post and a pair of vertical side members projecting upwardly from the extremities of said bottom member, a pair of braces for said sign frame, each of said braces being in U-form for embracing said bottom member and one of said side members at points remote from the vertices of the angles between the said bottom member and the said side members, said braces being rigidly secured to said bottom and side members at the points of intersection for stabilizing the corners of said frame against distortion from wind and other stresses, and rigid connections between said braces and said post.

FULLER ARNOLD AUSTIN.