

[54] **PORTABLE FOLDING WARNING SIGN STANDARD**

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[22] Filed: **Dec. 15, 1970**

[21] Appl. No.: **98,307**

[52] U.S. Cl. **248/448, 40/125 H, 248/413,**

248/166

[51] Int. Cl. **G09f 19/00**

[58] Field of Search **248/166, 173, 448, 449, 460,**
248/461, 121, 170, 171; 40/125 H

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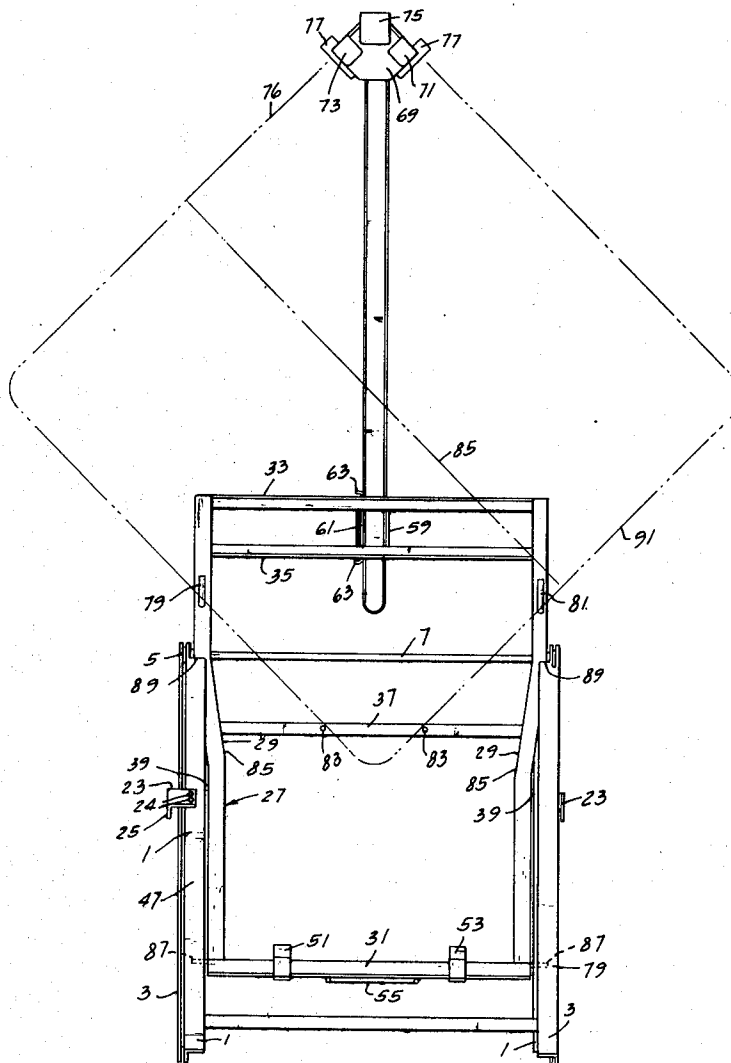
Primary Examiner—William H. Schultz

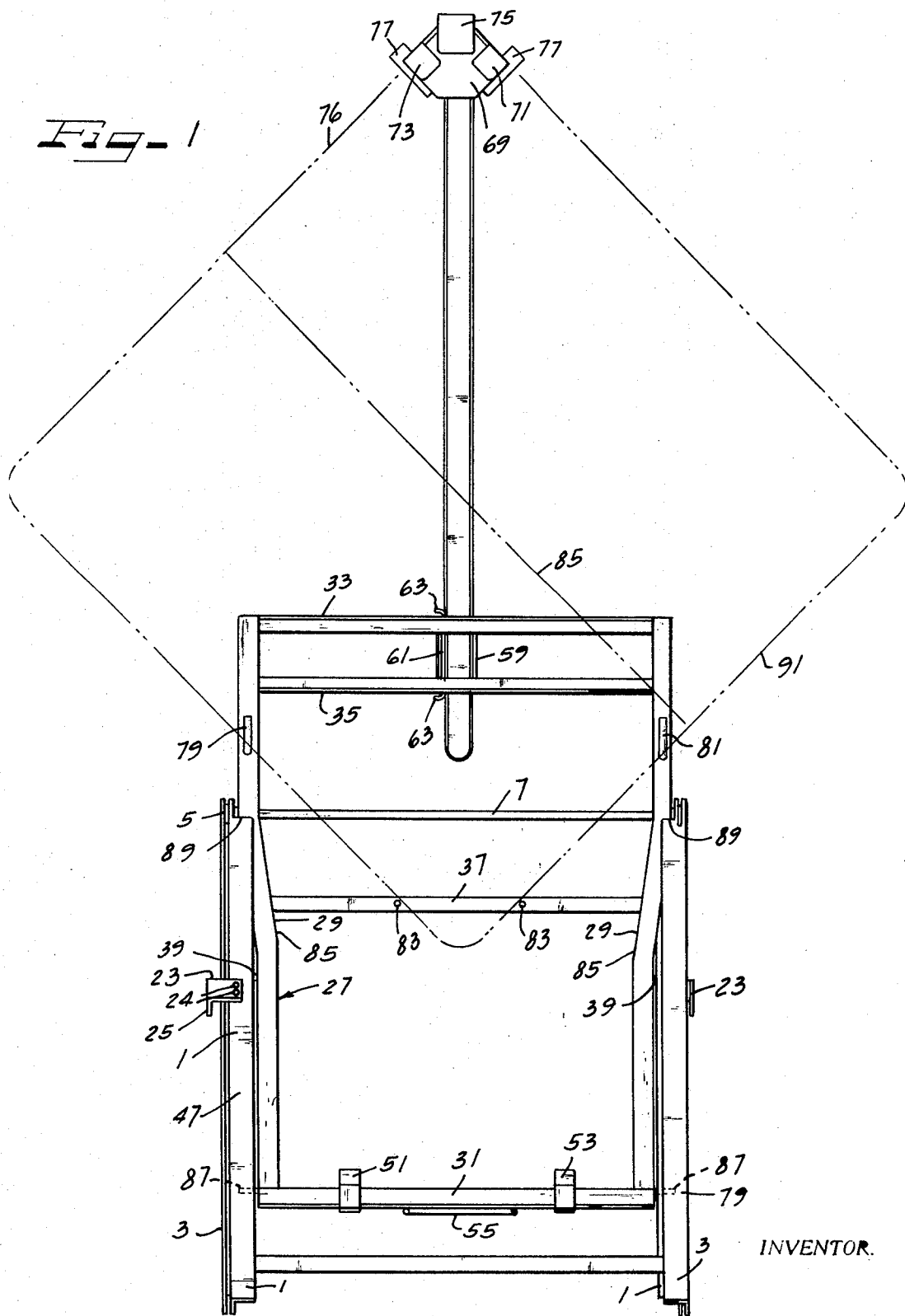
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[57] **ABSTRACT**

A portable folding standard for supporting a sign has an A-frame pivoted at the top so that the legs can be collapsed into a folded position, bracing links pivoted to the A-frame which can be locked when the frame is in open position and folded alongside the frame when the frame is in closed position, a swinging frame pivoted to the top of the A-frame, balancing springs connected between the swinging frame and the A-frame, and a vertical mast, adaptable for elevation, carried on the swinging frame. The frame and mast are provided with means for exhibiting a sign when the standard is in open position and for storing the sign when the standard is in folded or closed position.

13 Claims, 4 Drawing Figures





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Fig- 2

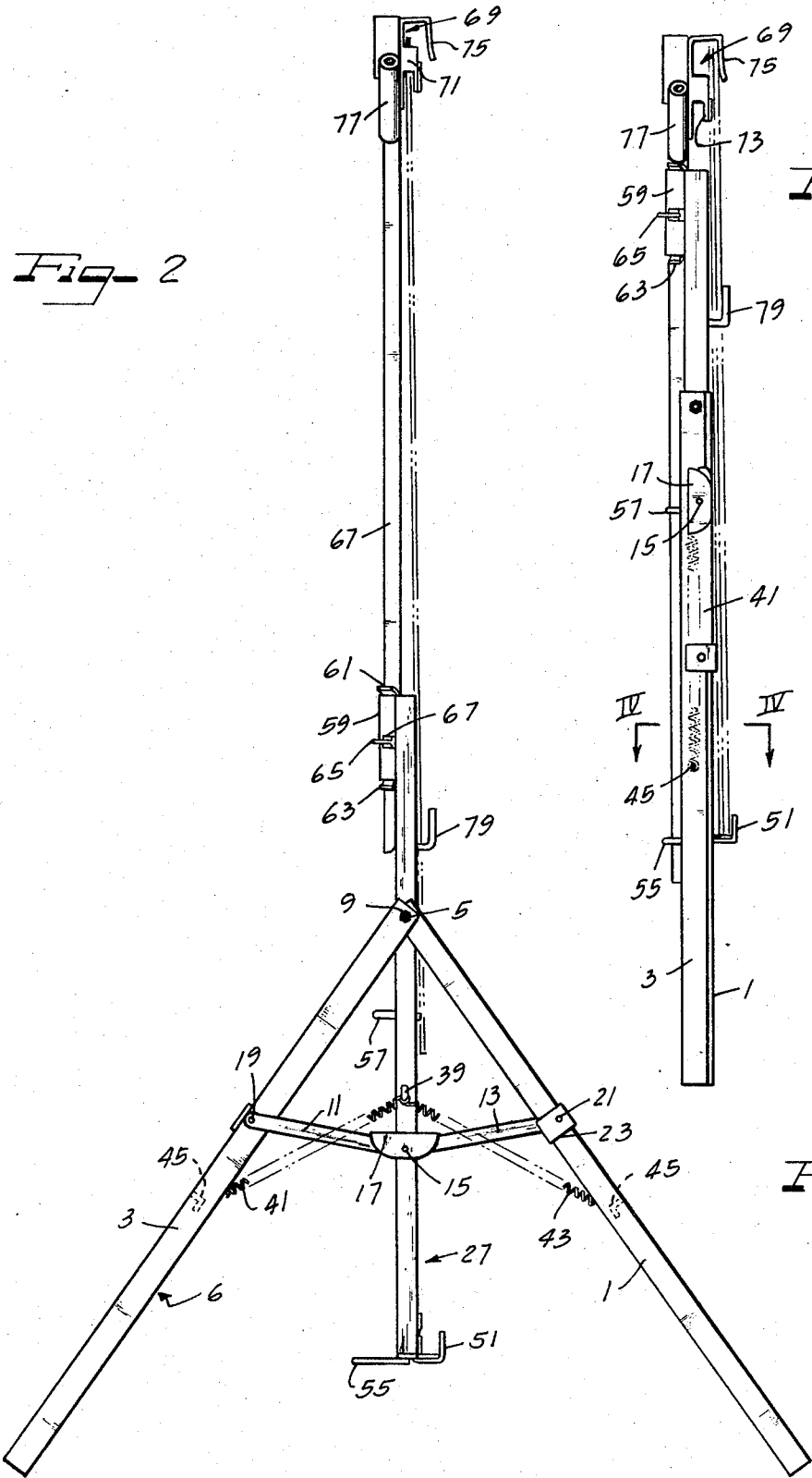


Fig- 3

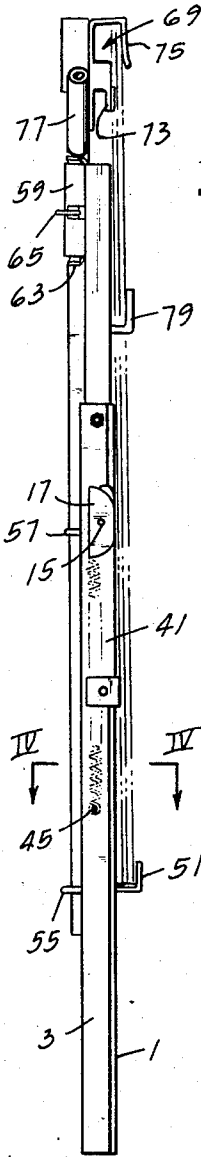
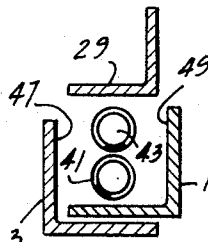


Fig- 4



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PORTABLE FOLDING WARNING SIGN STANDARD

BRIEF SUMMARY OF THE INVENTION

The object of this invention is to provide a compact, portable, foldable standard for exhibiting warning road signs.

Another object of the invention is to provide a standard which is adjustable to receive signs of different sizes.

A still further object of the invention is to provide a standard having means for storing a sign when the standard is in closed or folded position.

A still further object of the invention is to provide a portable, foldable, sign standard which is capable of standing erect and resist being blown over when subjected to gusts of wind.

Another object of the invention is to provide a standard in which spring means for balancing a swingable frame are enclosed and protected in an undistorted position when the standard is folded.

SHORT DESCRIPTION OF THE DRAWING

FIG. 1 of the drawing is a front vertical diagrammatic view of the sign standard in accordance with the invention; FIG. 2 is a side vertical diagrammatic view of the standard shown in FIG. 1 in the open position; FIG. 3 is a side elevational view of the sign standard shown in FIG. 1 in the closed position with the mast lowered; and FIG. 4 is a cross-sectional view along the line 4—4 of FIG. 3.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawing, the numerals 1 and 3 represent a pair of L-shaped angle bars pivoted together at their upper ends 5. It will be apparent from FIG. 1 and 3 that the angle bars 1 and 3 are mounted in position so that the bar or leg 1 will fit inside of leg 3 when the legs are folded. There are two pairs of legs, one on each side of the A-frame, the two pairs of legs being pivoted on the round bar 7 and retained thereon by suitable nuts 9 screwed onto the threaded ends of the bar. A pair of bracing links 11 and 13 are pivoted at 15 to a locking plate 17. Plate 17 is a two-sided plate closed at the top and open at the bottom. The ends of links 11 and 13 are located between the two sides of the plate. The link 11 is pivoted at the opposite end 19 to leg 3 and link 13 is pivoted at its opposite end 21 to an L-shaped bracket 23 which, in turn is rivetted or otherwise fastened to leg 1, as shown at 24. Arm 25 of bracket 23 to which the link 13 is fastened is spaced outwardly from leg 1 in order to provide room between the arm and the leg 3 for the links 11 and 13 when in folded position. When in fully opened position, the pivot 15 is a short distance below pivots 19 and 21 and is maintained in this position by the lock plate 17 which abuts against the upper edges of the links. By placing the pivot point 15 below the pivots 19 and 21, the possibility of the standard inadvertently folding by upward movement of the pivot point 15 is avoided. There is a similar linkage between the other two legs of the A-frame.

Pivotaly mounted on the pivot rod 7 between the pairs of legs of the A-frame is a swingable frame 27. Frame 27 is formed of two vertical L-shaped angle bars 29 tied together by horizontal L-shaped cross bar 31 at the bottom, L-shaped cross bar 33 at the top, and L-shaped cross bar 35 spaced a short distance below bar 33. A bar 37 which may be L-shaped or a plain bar extends across the frame at a short distance below the pivot rod 7. Extending outwardly from the sides 29 of the frame are spring retainers 39 to which one end of each of the springs 41 and 43 is fastened on each side of the frame. The other ends of the springs are similarly attached to spring retainers 45 on the inside of the L-shaped legs 1 and 3. The spring retainers 39 are located above the pivot points 19 and 21, and the spring retainers 45 are located below the pivot points 19 and 21. The distance between the retainers 45 and 39 when the standard is in folded position is substantially equal to the length of the springs 41 and 43 when not distended, thereby enabling them to be stored without distortion, as shown in FIGS. 3 and 4. Because the ends of the springs are fastened to retainers 39 on the outer side edges of

the frame and to spring retainers 45 positioned on the inner surface 47 of L-shaped leg 1 and inner surface 49 of L-shaped leg 3, the springs will lie side-by-side when in folded position and are enclosed between legs 1 and 3 and arm 29 of the swingable frame so that they are fully protected from becoming entangled with tools or instruments when loaded on a truck or stored.

Mounted on the cross bar 31 at the bottom of the swingable frame are panel storage clips 51 and 53. Also mounted on the cross bar 31 is a mast guide 55 which may be formed of a bent iron rod welded to the center portion of the bar. A second mast guide 57 is welded to the cross bar 37 at the center thereof. A third mast guide 59 is welded between cross bars 33 and 35 at the center thereof. The mast guide 59 is preferably a channel of sufficient length to act as a support for the mast in fully elevated position. A pressure plate 61 is located within the mast guide 59. The plate 61 has its ends 63 turned outwardly in order to help retain it within the guide. A thumb screw 65 is threaded through a threaded hole in the guide 59 in order to exert pressure against the pressure plate 61 which, in turn, maintains the mast 67 at the desired elevation by friction.

The mast 67 is adapted to slide vertically in the guide 59 and to pass through guides 57 and 55 when in lowered position. The mast 67 may be made of L-shaped angle or square bar to prevent turning. Mounted on the upper end of the mast 67 by welding or other suitable means is a panel retaining yoke 69 formed with panel retainers 71 and 73 and storage clip 75. The retainers 71 and 73 are adapted to retain the upper end of a sign 76 when the standard is in open position. The clip 75 is adapted to retain the upper end of the sign when the sign is stored in the standard in folded position, as shown in FIG. 3. Also mounted at the upper end of the mast are a pair of flag sockets 77. Mounted on the side arms 29 of the swingable frame, adjacent the upper end thereof, there are panel retainers or support hooks 79 and 81 which are adapted to cooperate with the retainers 71 and 73 to hold a sign when the standard is in open position. Support hooks 79 and 81 may be coated with plastic or an elastomer to avoid scratching of the sign. Short, spaced metal projections 83 extend outwardly from bar 37 to assist in centering the sign or panel 76.

The side arms 29 of the swingable frame 27 are bent inwardly at 85 sufficiently to clear the legs 1 and 3 and to accommodate the spring retainers 39 between the legs 1 and 3 when the standard is folded. The bottom ends of arms 29 are bent outwardly at 87 to lie between legs 1 and 3 when folded, to serve the function of preventing the frame 27 from swinging when the sign is folded and to limit the swinging arc of frame 27 when the standard is in open position.

The upper ends of the legs 1 and 3 are cut out at 89 to accommodate the frame 27 and to permit it to swing in the direction of either arm. These cutouts should be of sufficient depth so that the bottom end of the frame can swing as far as either leg when the frame is in open position.

It will be apparent that signs of different sizes can be accommodated on the standard by raising or lowering the mast 67.

When it is desired to remove the sign it is only necessary to raise the mast sufficiently to raise the retainers 71 and 73 clear of the sign and remove the sign from the standard. Ordinarily, the sign will be made in two halves, with suitable hinges so that the sign can be folded along the line 85. After removal of the sign, the standard is collapsed by pushing upwardly on the lock plates 17 and bringing the legs 1 inside the legs 3. The sign is then placed with its edge 91 on the panel storage clips 51 and 53 and the mast is lowered until the panel storage clip 75 fits over the top edge of the folded sign, as shown in FIG. 3.

It will be apparent from the aforesaid description that the standard holds rigid or semi-rigid sign plates in both open and folded position without the necessity of fastening the sign to the frame by screws or other fastening means. This is made possible by the adjustable mast and the cooperating sign retainers and storage clips between which the sign fits and is held firmly in place.

It will be seen, therefore, that I have provided a road sign standard which is adapted to retain its position even in the face of high winds by virtue of the fact that the swingable frame will swing in the direction of the wind and relieve the pressure against the A-frame. It will also be apparent from the foregoing description that the standard is constructed in a manner to prevent accidental collapse and to allow folding thereof into a compact structure with the balancing springs protected during storage between the legs of the frame. Another important feature of the standard is that it is so constructed that when in collapsed position the swingable frame is prevented from swinging and the mast can be lowered to reduce the overall size of the support.

I claim as my invention:

1. A portable folding sign standard having a swingable frame pivotally mounted on a horizontal pivot intermediate its top and bottom, on a foldable support having two pairs of legs diverging from the pivot to the lower ends thereof, coil springs means between said frame and said legs to limit the swinging motion of said frame, brace links pivoted to oppositely diverging legs intermediate the ends thereof and adapted to be locked together in horizontal position to maintain said legs in fixed spread-apart position, characterized in that said springs are fastened to said frame at a position intermediate the top and bottom thereof at a point spaced from the point of attachment thereof to said legs when the standard is in closed position substantially equal to the length of the spring when not distended, said frame has a vertically adjustable mast mounted thereon, and means are provided on the upper end of said mast cooperating with means on said frame for positioning a sign plate and removably holding it in a vertical position.

2. A portable folding sign standard in accordance with claim 1 in which the means on the upper end of the mast is a yoke and the means on the frame cooperating with the yoke for positioning and holding a sign plate are retainers at opposite sides of the frame at the same horizontal level.

3. A portable folding sign standard in accordance with claim 2 in which the mast is located centrally of the frame.

4. A portable folding sign standard in accordance with claim 3 in which the frame has one or more supporting clips fastened to the bottom portion thereof and a clip fastened to the upper end of said mast, said clips being placed so as to support a sign plate when the standard is in folded position.

5. A portable folding sign standard in accordance with claim 1 in which the said frame has a plurality of horizontal, vertically spaced crossbars with guides fastened thereto to maintain said mast in vertical position.

6. A portable folding sign standard in accordance with claim 5 in which at least one of said guides has means for maintaining said mast at a selected elevation.

7. A portable folding sign standard in accordance with claim 6 in which said means for maintaining said mast at a selected elevation are a pressure plate positioned within said guide means and a thumb screw threaded through said guide means

against said pressure plate.

8. A portable folding sign standard in accordance with claim 1 including means extending laterally outward from the lower portion of said frame to a distance in line with a pair of said legs.

9. A portable folding sign standard in accordance with claim 1 in which said legs are fabricated from L-shaped angles and said springs are fastened to said legs in such manner that when the standard is folded the springs will lie between each pair of legs in protected, undistorted position.

10. A portable folding sign standard in accordance with claim 8 in which said legs are fabricated from L-shaped angles and said springs are fastened to said legs in such manner that when the standard is folded the springs will lie between each pair of legs in protected, undistorted condition.

11. A portable folding sign standard having foldable legs with a sign supporting frame pivotally mounted on said legs characterized by a vertically adjustable member mounted on said frame, means on said frame adapted to loosely support the lower edges of a substantially square, rigid sign or panel in a diagonal position, separate means on said frame for loosely supporting the bottom edge of said sign or panel when placed with two opposite edges in a horizontal position, means on said vertically adjustable member for retaining the upper edges of said sign or panel when placed in a diagonal position on said standard, and separate means for retaining the upper edge of said sign or panel when placed on said standard with two opposite sides in a horizontal position, said supporting and retaining means being such as to release said sign or panel from the frame upon vertical movement of said adjustable member.

12. A portable folding sign standard comprising two pairs of legs having an L-shaped cross-section, each pair having a pivotal connection, a swingable frame pivotally mounted between said pairs of legs by said pivotal connections, said frame having side members a portion at least of which is spaced inwardly of but adjacent to said legs, a coil spring extending between said frame and each leg of a pair, said springs being attached to said legs and said frame at locations spaced apart a distance when the standard is folded, substantially equal to the undistended length of said springs, and the springs being fastened to said frame and said legs in such manner as to nest between said pair of legs and said portion of said side members.

13. A portable folding sign standard in accordance with claim 12 including a pair of bracing links each being pivotally connected at one end to one of a pair of legs and to each other at their other end, said links being of such length as to permit the pivot connection therebetween to assume a position a short distance below the pivot connections between the legs and links when the standard is in upright fully opened position, and a locking means to retain said pivot connection between said links in said position.

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