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C. M. BOLSER
REFLECTOR SIGNAL

2,679,370

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2 Sheets-Sheet 1

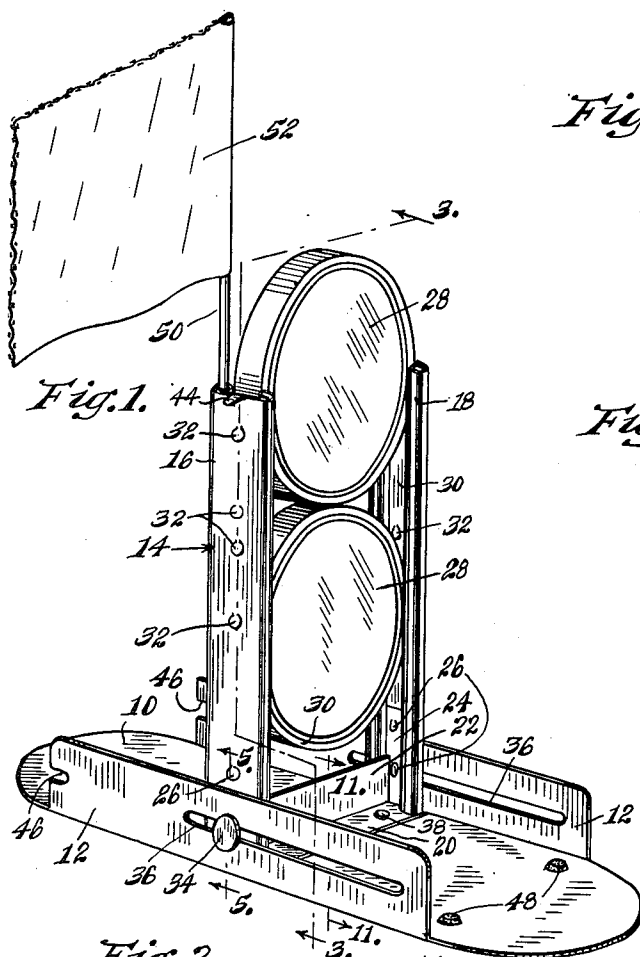


Fig. 1.

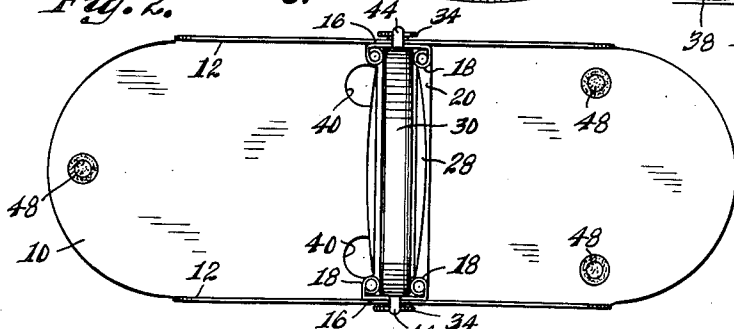


Fig. 2.

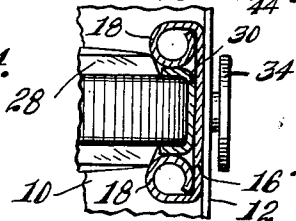


Fig. 3.

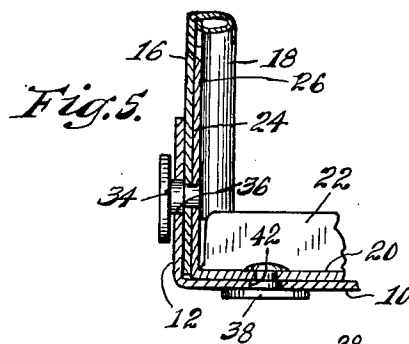


Fig. 4.

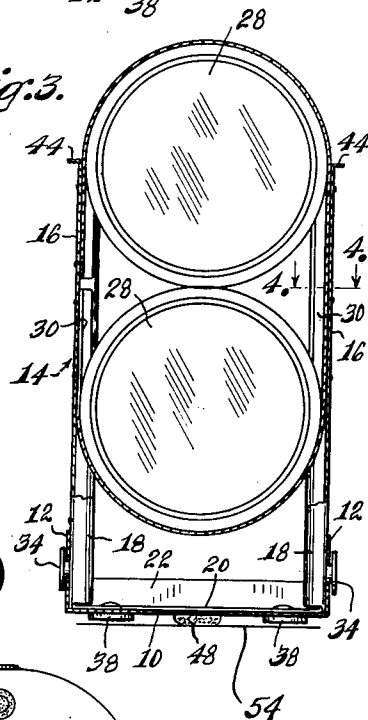


Fig. 5.

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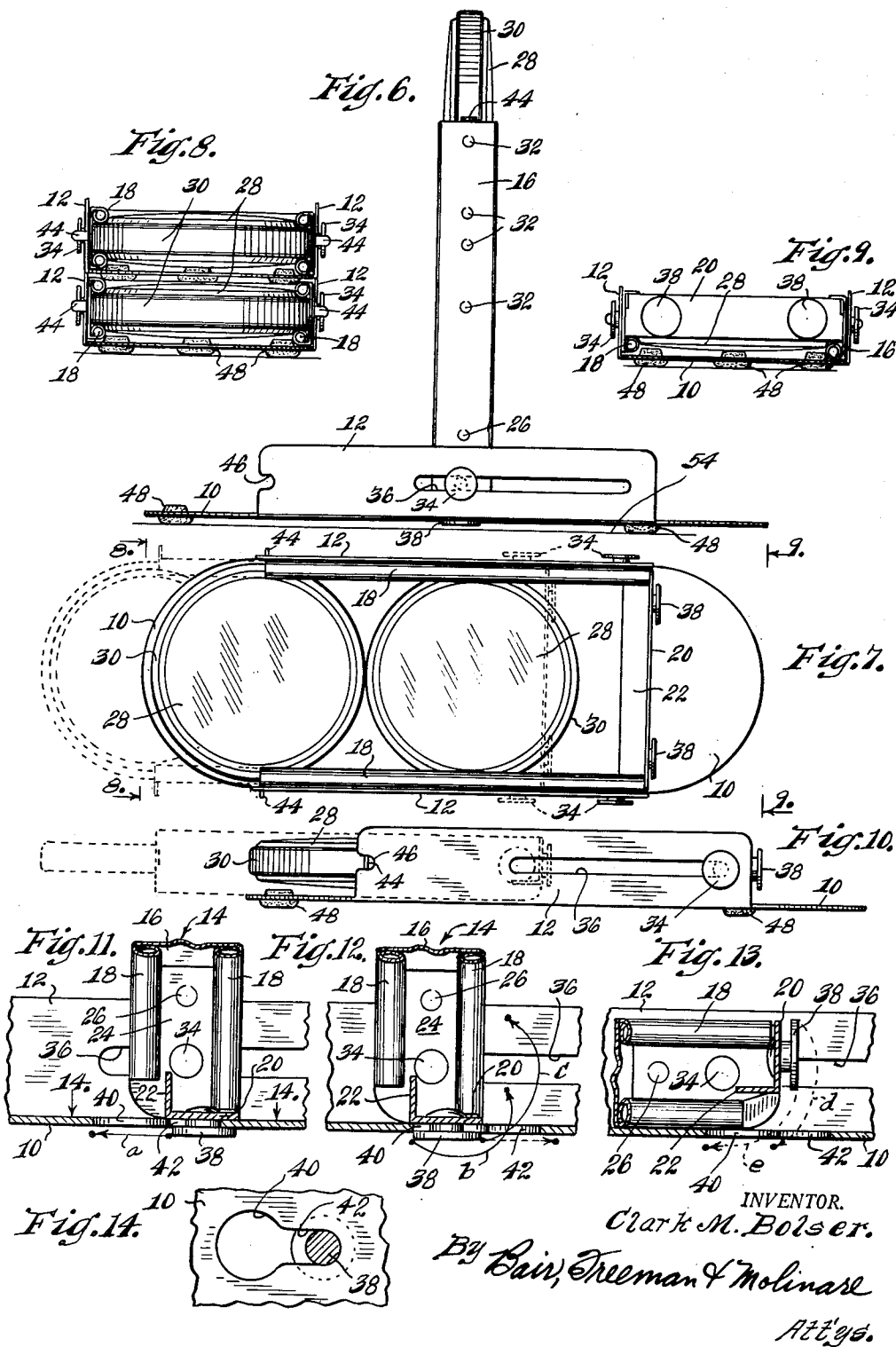
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,679,370

REFLECTOR SIGNAL

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5 Claims. (Cl. 248—33)

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This invention relates to a reflector signal used by truckers and tourists for signalling approaching cars in case of a breakdown or other trouble on a highway.

One object of the invention is to provide a reflector signal which is simple and inexpensive to manufacture yet very effective in use.

Another object is to provide a reflector signal which is collapsible so that three of them can be contained compactly in a kit to comply with the requirements in many States calling for the use of three signals, one at the truck or automobile, another a specified number of feet ahead of it, and a third one a specified number of feet behind it.

Still another object is to provide a collapsible reflector signal which can be easily and quickly unfolded to a position where the reflector is upstanding at right angles to the surface of the highway and is supported rigidly in that position even though high winds act on the signal to tip it over.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my reflector signal, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view of a reflector signal embodying my present invention and shows it in the unfolded position ready for use.

Figure 2 is a plan view thereof.

Figure 3 is a sectional view on the line 3—3 of Figure 1.

Figure 4 is an enlarged sectional view on the line 4—4 of Figure 3.

Figure 5 is an enlarged sectional view on the line 5—5 of Figure 1.

Figure 6 is a side elevation of the signal.

Figure 7 is a plan view thereof with the signal folded.

Figures 8 and 9 are end views of Figure 7 on the indicated lines 8—8 and 9—9 thereof.

Figure 10 is a side elevation of Figure 7.

Figures 11, 12 and 13 are enlarged cross sectional views on the line 11—11 of Figure 1 showing the parts in different positions during the collapsing or erecting operation; and

Figure 14 is a detail sectional view on the line 14—14 of Figure 11.

On the accompanying drawings I have used the reference numeral 10 to indicate a base plate and 12 side flanges formed thereon, the plates and the flanges being preferably formed of one

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piece of sheet metal. Associated with the base plate 10 is an upright indicated generally at 14 and comprising upright elements 16 of channel shape as shown in Figure 4 and their flanges curled into tubular formation as indicated at 18. The upright elements 16 are secured together at their lower ends by a cross member 20 of sheet metal having an upstanding flange 22 and a pair of upstanding flanges 24 at its ends. These flanges 24 are spot welded to the upright element 16 as indicated at 26.

A pair of reflectors 28 are provided which are usually colored red to indicate "danger." The reflectors 28 are assembled in a channel shaped frame 30 which, as shown in Figure 3, extends around both of them and is located between the upright elements 16 and their tubular flanges 18. The frame 30 is spot welded to the upright element 16 as indicated at 32.

The manner of association of the upright 14 with the base plate 10 consists of headed rivets 34 carried by the upright elements 16 as illustrated in Figure 5 and passing through slots 36 in the flanges 12. This permits longitudinal movement of the rivets 34 along the base 10 for a purpose which will hereinafter appear.

Also shown in Figure 5 are headed rivets 38 mounted in the cross member 20 and adapted to enter keyhole slots of the base plate 10 which slots are best shown in Figures 14 at 40—42. The upright elements 16 are provided with tongues 44 at their upper ends and the flanges 12 are provided with notches 46 adapted at times to receive the tongues as will hereinafter appear. The base plate 10 is provided with three feet 48 of rubber or the like to prevent slipping of the reflector signal along a smooth pavement when a high wind is blowing. One of the tubular flanges 18 of the upright elements 16 is adapted to receive a flagstaff 50 as shown in Figure 1 having a red flag 52 thereon for further aid in presenting a larger signal than the reflector 28 during the daytime. The reflectors as such of course are most effective at night when reflecting the lights from an oncoming vehicle.

Practical operation

My reflector signal is adapted to be set up as shown in Figure 1 for signalling purposes. When so set up, the upright 14 is rigid relative to the base 10 and winds as high as forty miles per hour are ineffective to cause any slippage of the reflector with relation to a smooth pavement surface (54 in Figures 3 and 6). The rigidity of the upright 14 at right angles to the base 10

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likewise places the reflectors 28 at right angles to the highway surface 54 for best reflecting characteristics in relation to the headlights of an oncoming car and for maximum warning distance. During the daytime the flag 50 mounted on the reflector signal increases its effectiveness for day time use at which time, of course, the reflectors are relatively ineffective except to reflect possible sunlight at certain angles.

Referring to Figures 11, 12 and 13, the reflector signal may be collapsed for compactness by first moving the upright 14 to the left which moves the headed rivets 38 from the position shown to a position in alignment with the enlarged portions 40 of the keyhole slots of Figure 14, the arrow *a* in Figure 11 indicating the movement of one corner of the head of a rivet 38. When so moved, the Figure 12 position is then assumed.

The upright 14 may now be swung a quarter turn to the left which causes two corners of the rivet to swing as indicated by the arrows *b* and *c* to assume the position shown in Figure 13. This moves the upright from the position of Figure 6 to the dotted position of Figure 10. The upright may then be pushed toward the left in Figure 10 to bring the upright and its reflectors entirely within the outline of the base 10, thus condensing the overall length of the reflector signal when folded. Three of the signals may then be stacked in a relatively small container to be kept in the tool box or trunk of a truck or automobile.

The width of the flanges 12 is such that the surfaces of the reflectors 28 are held from contact with each other and possible scratching during the time the reflector signals are stacked in a carrying case. This is illustrated in Figure 8 wherein there are two of the reflector signals stacked together.

In order to set up the signal the operations just described are reversed, that is, first of all the upright is moved from the full-line position of Figure 10 to the dotted line position and then swung as indicated by the arrows *d* and *e* in Figure 13 to the position of Figure 12 again, the upright finally being pushed to the position of Figure 11 with the rivets 38 in the small portions 42 of the keyhole slots as shown in section in Figure 14. The rivets 34 serve as guides to keep the parts together during collapsing and set-up, and the rivets 38 are suitably proportioned so that they tightly engage in the keyhole slot portions 42 in the set-up position of the parts thus mounting the upright rigidly with respect to the base.

When the upright 14 is in the position of Figure 10, it will be noted that the ears 44 enter the notches 46. This serves to keep the upright centered in relation to the flanges 12 so as to avoid any possible contact of the reflectors 28 with each other when the reflector signals are stacked as in Figure 8.

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

I claim as my invention:

1. In a collapsible reflector signal of the character disclosed, a channel shaped base, the

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flanges thereof being slotted longitudinally, an upright having headed rivets slidable and rotatable in said slots and having a headed projection from its lower end, said base having a keyhole slot to receive said headed projection in the enlarged part thereof with said headed projection holding the lower end of the upright against the base when moved into the small portion of the keyhole slot, said base having friction elements to prevent slippage of said base along a highway surface under the impact of wind against the upright, said upright having ears and said flanges having notches receiving said ears when the signal is in collapsed position.

2. In a reflector signal, a channel shaped base, the flanges thereof being longitudinally slotted and the web thereof being provided with a keyhole slot, an upright, a cross piece on said upright provided with a headed projection engaging said keyhole slot and mount the upright rigidly at right angles to said base, and the arms of said upright adjacent their lower ends having projections slidable and pivotal in said slots of said flanges, the upper ends of said uprights and one end of each of said flanges having finger and notch means to center said upright with respect to said flanges in the collapsed position of the reflector signal.

3. In a reflector signal, a channel shaped base, the flanges thereof being longitudinally slotted and the web thereof being provided with a keyhole slot, a cross piece on said upright provided with a headed projection engaging said keyhole slot and mount the upright rigidly at right angles to said base, and the arms of said upright adjacent their lower ends having projections slidable and pivotal in said slots of said flanges.

4. In a collapsible reflector signal of the character disclosed, a channel shaped base, the flanges thereof being slotted longitudinally, an upright having headed rivets slidable and rotatable in said slots and having a headed projection at its lower end, said base having a keyhole slot receiving said headed projection in the enlarged part thereof with said headed projection holding the lower end of the upright against the base when moved into the small portion of the keyhole slot, said upright having ears and said flanges having notches receiving said ears when the signal is in collapsed position.

5. In a reflector signal, a base and an upright, said upright comprising an inverted U-shaped element, a pair of reflector elements arranged edge-to-edge, a channel-shaped band around both of said reflector elements to retain them in assembled relation to each other, said band and reflector elements being mounted between the arms of said U-shaped upright, said arms being channel shaped to receive said band and reflector elements, and means to retain said band and reflector elements therein.

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