Dec. 2, 1941. H. N. CARVER 2,264,618

SIGNALING DEVICE

Filed April 21, 1938

Fig. 1.

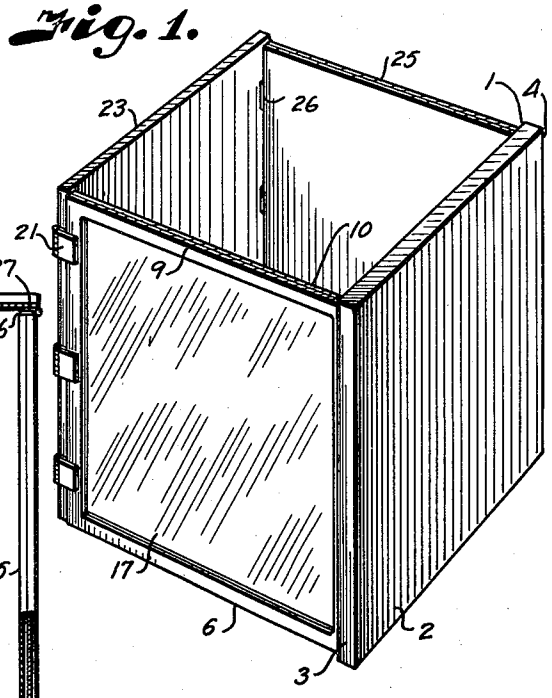


Fig. 2.

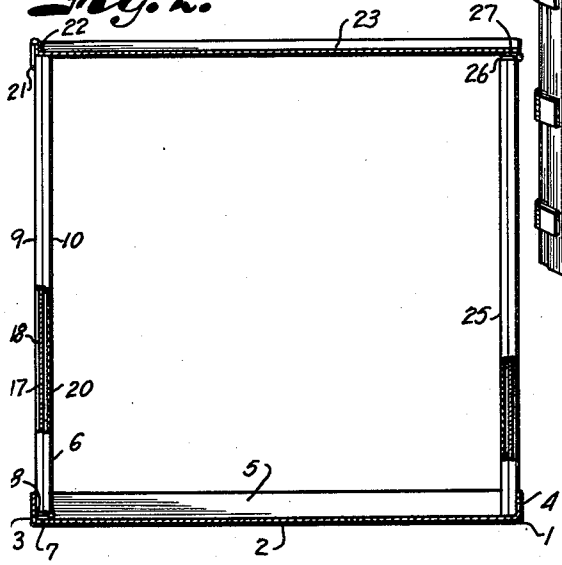


Fig. 3.

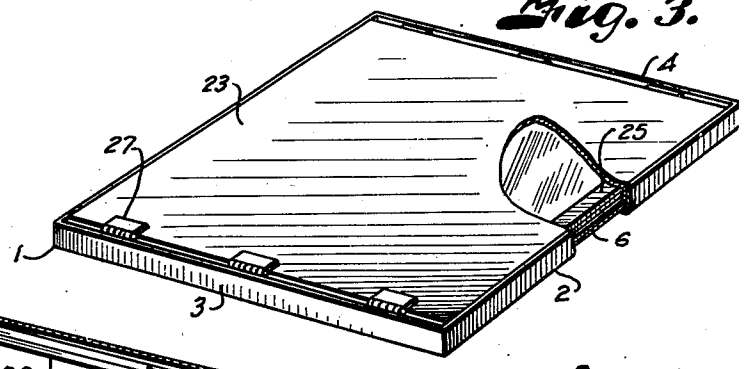


Fig. 4.

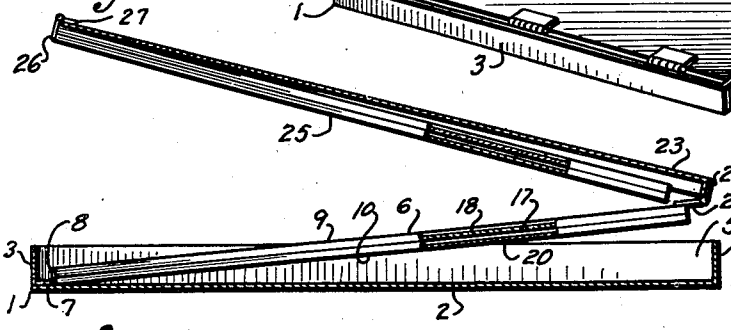


Fig. 6.

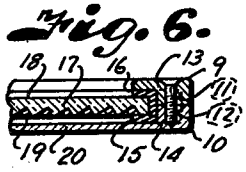
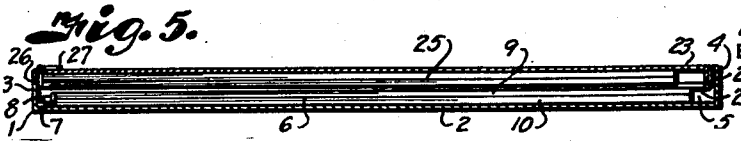


Fig. 5.



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2,264,618

SIGNALING DEVICE

Horace N. Carver, Wichita, Kans.

Application April 21, 1938, Serial No. 203,349

1 Claim. (Cl. 88—78)

This invention relates to signaling devices and more particularly to a portable signal adapted to be conveniently placed on highways and similar thoroughfares for warning motorists and the like of obstructions on a highway.

It is ordinarily difficult for operators of vehicles such as loaded trucks to pull off the road when it becomes necessary to make repairs on the vehicles under their control. Should the motor of a truck fail or the tires need changing, the stalled or otherwise stationary vehicle creates a hazard on the road, not only to approaching motorists, but also to the truck operators and the property under their control.

It is the principal object of the present invention to provide a signal of the character commonly known as a "road flare" which is capable of reflecting and/or refracting light rays generated by the lights of approaching vehicles, back approximate their source to warn the occupants of those vehicles of the presence of obstructions on roads.

Other important objects of the present invention are to provide a collapsible light reflecting and/or refracting signal of sturdy and durable construction capable of withstanding shocks and jars without damage to the signal; to so design the signal that it is difficult to tip over accidentally; to provide a housing for the light reflector or refracting element of the signal which also acts as a supporting standard therefor; to provide a compact and easily operable signal having a high degree of efficiency; to provide a protective mounting for the reflector or light refracting element of the signal; to provide a plurality of oppositely arranged signaling elements for carrying out the purpose of the invention; to provide a plurality of housing elements for supporting and covering the signaling elements; to arrange the housing members and signaling elements in foldable relation; to facilitate erection and collapse of the signaling elements to operative and inoperative condition respectively; and to provide improved parts and arrangements of parts making up a signaling device in accordance with the present invention.

In accomplishing these and other objects of the invention I have provided improved details of structure, the preferred form of which is illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view of a signaling device embodying the features of the present invention, the device being illustrated in operative condition.

Fig. 2 is a plan view of a signaling device in erected operative condition, parts of the base, cover and signaling elements being shown in horizontal cross-section to illustrate the arrangement thereof relative to each other.

Fig. 3 is a perspective view of the signaling device in collapsed condition adapted for storage, parts of the cover and base members being broken away to illustrate the arrangement of the signaling elements therebetween.

Fig. 4 is a longitudinal cross-section through the signaling device in semi-collapsed condition, parts thereof being broken away to better illustrate the construction of the device.

Fig. 5 is a longitudinal cross-section through the base and cover members illustrating the relation between the members and signaling element when in collapsed and housed condition.

Fig. 6 is a fragmentary detail longitudinal cross-section through a portion of one of the signaling elements illustrating a suitable form of reflector plate for the signaling element.

Referring more in detail to the drawing:

The invention includes a base member 1, which also serves as a main housing element; in the present instance, the base member being shown as of substantially rectangular shape having a bottom wall 2 and side walls 3 and 4 forming a recess 5 therebetween.

A signaling element 6 of a size and shape adapted to fit within the recess 5 of the base or housing member 1 is hingedly mounted in the base member as by a hinge leaf 7 fixed to the bottom wall 2 at one end of the base member and by a cooperating hinge leaf 8 fixed to one end of the signaling element 6, as particularly illustrated in Figs. 4 and 5.

The signaling element 6 preferably comprises a frame composed of mating rim members 9 and 10, Fig. 6, having recessed interiors indicated by dotted lines 11 and 12 and spaced bosses, a cross-section through which is indicated at 13 and 14. A suitable gasket 15 of sponge rubber or like material and of generally U-shape has its base mounted on the bosses 13 and 14 and the outer faces of its edges engaged with the inner edges 16 of the frame members 9 and 10.

A plate 17 of a character adapted for passing light rays therethrough and reflecting and refracting such light rays back approximate their source of incidence is mounted at its peripheral edge in the gasket 15. The plate 17 has a suitable outer face 18 and is preferably provided with a prismatic rear face 19, the plate being made of rolled colored glass or the like.

The frame member 10 adjacent the rear or prismatic face of the plate 17 preferably extends as indicated at 20 throughout the area of

the plate 17 for backing and protecting the same against injury through contact with the bottom wall 2 of the base or housing member 1. This portion of the frame member may also be formed of a material adapted for having a high polish imparted thereto to form an additional reflecting element to enhance the reflecting and refracting action of the plate 17 on light rays impinging thereagainst.

The end of the signaling element 6 opposite its connection with the base member 1 has mounted thereon a hinge leaf 21 which cooperates with a hinge leaf 22 fixed to a cover 23.

The cover member 23 is of a shape substantially similar to the base 1 and of a size sufficient to permit the peripheral side walls thereof to overlie the periphery of the signaling element 6. It is preferable that the size of the base or cover member 23 be less than the base or housing member 1 to the end that the cover member 23 may telescope within the side walls 3 and 4 of the base or housing member.

A signaling element 25 similar to the signaling element 6, previously described, has one end provided with a hinge leaf 26 cooperative with a hinge leaf 27 fixed to the end of the cover member 23 opposite its connection with the signaling element 6, the hinges being arranged relative to the signaling elements 25 and 6 and the cover and housing members 23 and 1 in such a manner as to adapt the elements and members for folding interengagement relative to each other.

As a matter of practice, the signaling elements are of different length to provide for accommodating the hinge leaves between the ends thereof and the adjacent ends of the base or cover members, as particularly illustrated in Fig. 5, for more completely compacting the device when not in use.

The operation of a signaling device constructed as described is as follows:

Assuming the device to be in collapsed condition, as shown in Figs. 3 and 5, the housing member may merely be inverted to permit the cover member and both signaling elements to hinge outwardly therefrom on the hinge 7—8 to position the signaling element 6 at substantially right angles to the bottom wall 2 of the housing member, as shown in Figs. 1 and 2. The cover member 23 is then turned on the hinge 21—22 in the opposite direction in such a manner that it is oppositely disposed relative to the housing member 1. The signaling element 25 is then folded outwardly to a position approximately 270° removed from the position shown in Fig. 4 in such a manner that it is oppositely disposed relative to the signaling element 6. The outer free end of the signaling element 25 may then be fitted within the end wall of the housing member opposite its hinge in such a manner as to anchor the signaling device in erected condition, as shown in Figs. 1 and 2.

To collapse the signaling device, the operation just described is reversed, it being apparent that the signaling element 6 seats on the bottom wall 2 of the housing, that the signaling element 25 seats on the signaling element 6 in overlapping relation thereto, and that the cover member 23 overlies the signaling element 25, the end walls of the cover telescoping within the side walls of the housing or base member 1 to compactly collapse the signaling device in such a manner that a minimum amount of storage space is required for the device when not in use.

It is apparent that the present device may be placed either in front of, behind, or at the side of a vehicle on a road and that either of the signal plates may be faced toward either direction of approaching traffic on a highway to warn occupants of the vehicle of the presence of an obstruction on the highway.

It is also believed apparent that a strong, rigid, durable, economical, and highly efficient signaling device is provided, a further economy being apparent in the fact that should one of the signaling elements be broken, not only is the other signaling element still effective to warn approaching motorists of the presence of obstructions on the road from at least one direction, but the backing member of a broken plate is effective in reflecting light rays impinging thereagainst.

What I claim and desire to secure by Letters Patent is:

A collapsible and expansible substantially rectangular road signal composed of four upright members and adapted to be placed on a road to warn motorists of obstructions and consisting of two substantially parallel spaced signaling members arranged opposite each other and facing opposite directions when the road signal is arranged for use and a pair of housing members extending across the space between the signaling members and provided with narrow marginal telescoping walls forming a shallow receptacle for the reception of the signaling members when the road signal is collapsed, means for hinging one of the signaling members to one of the housing members and for permitting said signaling member to swing into and out of said housing member and to be arranged at right angles thereto, means for hinging said signaling member to the other housing member at one end thereof and for permitting said housing member to swing around the end of said signaling member to arrange the last named housing member at right angles to said signaling member and also to permit said last named housing member to fold in collapsing the road signal and means for hinging the other signaling member to the free end of the last named housing member and for permitting the same to swing into and out of such housing member and also to swing around said free end of said housing member and to be arranged at right angles thereto when arranging the road signal for use.

HORACE N. CARVER.