Oct. 2, 1962 H. J. MALACHOWSKI 3,056,495

SAFETY REFLECTOR ASSEMBLY

Filed May 16, 1960 2 Sheets-Sheet 1

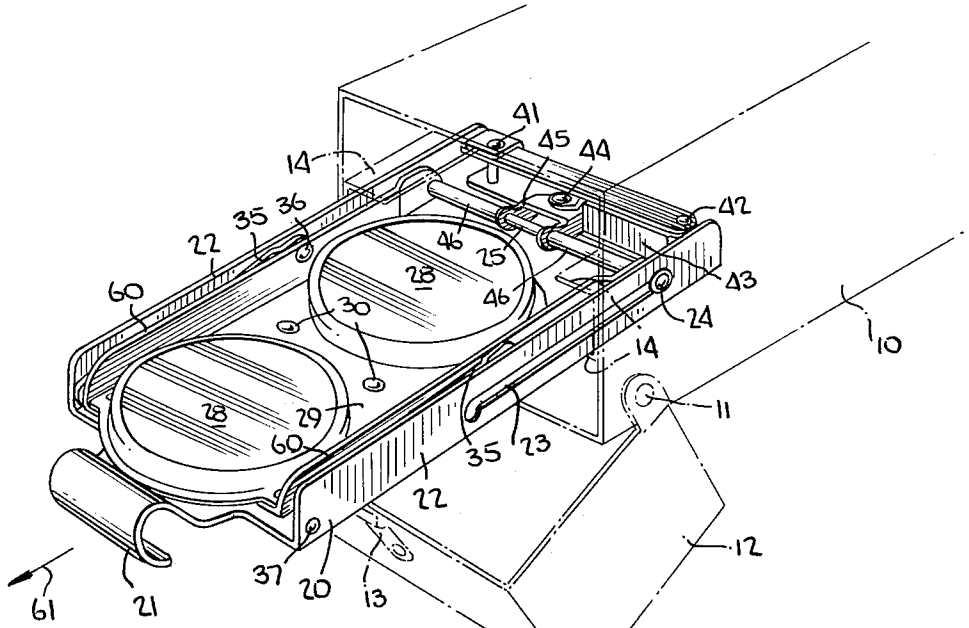


Fig. 1.

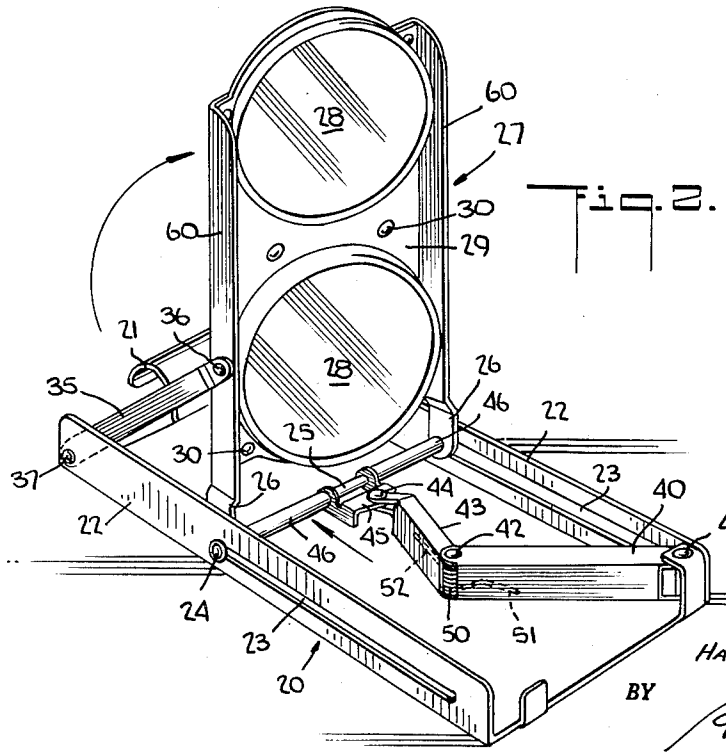


Fig. 2.

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Oct. 2, 1962 H. J. MALACHOWSKI 3,056,495

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Filed May 16, 1960 2 Sheets-Sheet 2

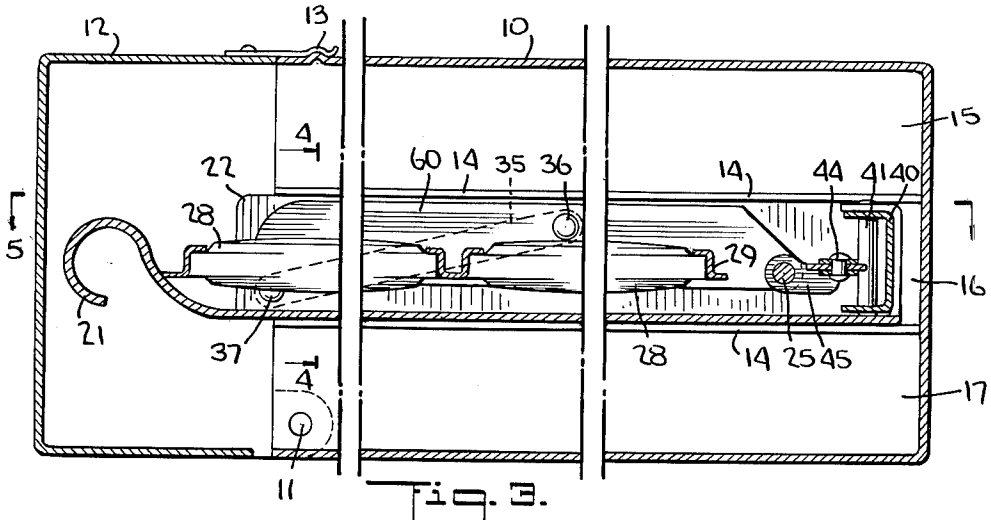


Fig. 3.

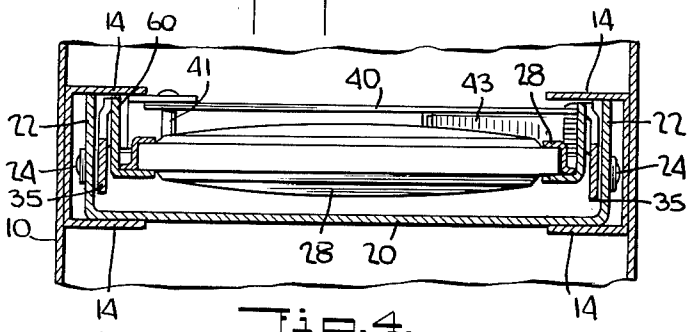


Fig. 4.

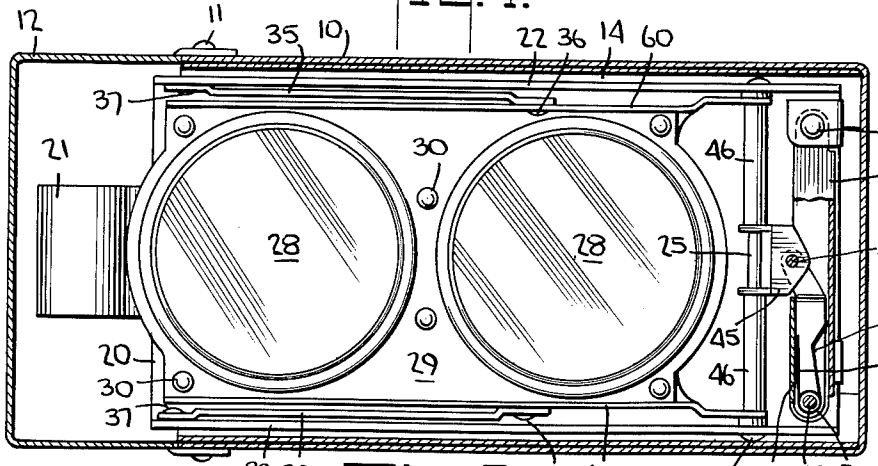


Fig. 5.

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United States Patent Office 3,056,495 Patented Oct. 2, 1962

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SAFETY REFLECTOR ASSEMBLY

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Filed May 16, 1960, Ser. No. 29,327
5 Claims. (Cl. 206—65)

This invention relates to a reflector assembly of the type used by commercial vehicles to warn oncoming traffic in the event of an accident or other emergency. These assemblies are called reflector flares because they are used instead of flame flares, and generally a vehicle will be equipped with a metal box in which will be deposited three reflector flare assemblies. In the event of an accident or other emergency the driver opens the metal box, takes out the reflector flares and places one in front of the vehicle, one to the rear of the vehicle and generally also one to one side of the vehicle, although in some instances, he may place the flares in some other manner, depending upon road conditions.

Those skilled in the art know that reflector flare assemblies must be adapted for quick removal from a container and quick placement, since an accident may easily be caused by a dark truck positioned on an open road on a dark night. Those reflector flare assemblies of the prior art with which I am familiar are not adapted for quick and easy removal from the container in which they are mounted. Further, they are not adapted for quick and easy manipulation into a display position for placing on the roadway. In cold and snowy weather, these difficulties are further aggravated.

I believe that through my invention I contribute reflector flares that have many advantages over those of the prior art. As one feature of my invention, I utilize a reflector flare and container combination that is extremely novel in that each of several flare assemblies is slidable into and out of a container while held out of contact with the other reflector flare assemblies, and with the reflector lenses completely protected.

As a further feature of the invention each reflector flare assembly comprises a base member on which is movably mounted a holder carrying reflector lenses, the reflector lens holder being held in juxtaposed relation to the base member, preferably by the very means that mount each reflector assembly for sliding movement in the casing. As a still further feature of the invention, the holder carrying the reflecting lenses of each assembly is adapted to be moved by spring means into display position, and is held against this movement until the entire reflector flare assembly is removed from the container. As a more particular feature of this part of the invention, the means that maintain each holder against its base member, are those parts of the container relatively to which the reflector flare assemblies slide.

I have thus outlined rather broadly the more important features of my invention in order that the detailed description thereof that follows may be better understood, and in order that my contribution to the art may be better appreciated. There are, of course, additional features of my invention that will be described hereinafter and which will form the subject of the claims appended hereto. Those skilled in the art will appreciate that the conception on which my disclosure is based may readily be utilized as a basis for the designing of other structures for carrying out the several purposes of my invention. It is important, therefore, that the claims be regarded as including such equivalent constructions as do not depart from the spirit and scope of my invention, in order to prevent the appropriation of my invention by those skilled in the art.

Referring now to the drawings,

FIG. 1 is a perspective view of a reflector flare assembly moving outwardly of a container;

FIG. 2 is a perspective view showing the reflector lens holder moved out of nesting or juxtaposed relation to the holder and into display position;

FIG. 3 is a partial vertical section through the container showing one of the reflector flare assemblies in position;

FIG. 4 is a partial vertical section along the line 4—4 of FIG. 3;

FIG. 5 is a partial horizontal section taken along line 5—5 of FIG. 3.

Referring now more particularly to the drawings, reference numeral 10 indicates the container of my invention. This container will be formed preferably from sheet steel and will be of rectangular section longitudinally and transversely. At 11, at each side of the casing 10, there is pivoted a lid or cover 12 that may be held yieldingly in closed position by a simple spring catch 13 as best shown in FIG. 3. Within the container there will be welded shelf-like flanges 14, forming in effect three separate chambers 15, 16 and 17, into each of which may be positioned a reflector flare assembly of the type shown in FIGS. 1 and 2. In FIG. 3, one assembly is shown in position between the flanges 14, 14 within the chamber portion 16. It is obvious that a second flare assembly may likewise be mounted in the chamber 15 and a third assembly in the chamber 17. Each of the assemblies will slide freely of the others because of the particular arrangement of the flanges 14, 14.

I shall now describe one particular flare assembly that I have conceived for use in combination with the particular container 10 that I have just described. This flare assembly utilizes a base member 20 fabricated from sheet steel and having an integral finger piece 21 through which it may be pulled outwardly of the container 10 and then handled for placing on the roadway and for carrying between the roadway and the container. The base 20 has opposed upstanding vertical flanges 22 slotted at 23. Moving in the opposed slots 23 are the opposed ends 24 of a shaft 25. The ends of the shaft may be suitably riveted or headed so as to be retained within the slots 23 as those skilled in the art will readily appreciate. Pivoted on the shaft 25 are a pair of spaced legs 26 of a lens holder designated generally by reference numeral 27. This lens holder 27 may be fabricated in any desired manner, but I prefer to form it of sheet metal bent as illustrated in the drawings and having two openings into each of which may be inserted a lens 28. A retainer plate 29 is riveted at several points 30 to the holder 27 and holds both lenses 28 in position.

A pair of opposed guide links 35 are utilized, each guide link being pivoted at one end 36 to the lens holder 27 and at the other end 37 to a vertical flange 22 of base member 21. It is quite obvious now that the holder may swing and slide relatively to the base member 20, the sliding action being guided by the shaft 25 in opposed slots 23, and the swinging action by the links 35. One extreme position of the lens holder relatively to the base 20 is illustrated in FIG. 1 where the holder has moved into nested juxtaposed relation to the base 20, and the other extreme position is illustrated in FIG. 2 where the holder has moved into a vertical display position in which the two lenses 28 are adapted to reflect any light from a moving vehicle.

I prefer that the movement of the lens holder to display position be accomplished automatically upon the removal of the reflector flare assembly from the container 10. This action I obtain through the utilization of a toggle mechanism, as is well illustrated in the drawings, and particularly FIG. 2. The toggle mechanism comprises a link 40 pivoted at 41 to the base 20 at one end

thereof. The other end of link 40 is pivoted at 42 to a relatively shorter nesting link 43. This shorter nesting link 43 is in turn pivoted at 44 to a strap 45 hinged to the shaft 25. The strap 45 is further held in particular relation to the shaft 25 by spacer sleeves 46. As probably best shown in FIGS. 2 and 5, a torsion spring 50 is wound about the pin 42 constituting the pivot between links 40 and 43. One leg of the spring 50 is designated by reference numeral 51 and presses against the side wall of the link 40. The other leg, designated by reference numeral 52 presses against link 43. It is obvious from the drawings that the purpose of the spring 50 is to press the links 40, 43, into their extended position illustrated in FIG. 2 and that some effort is required to move the links 40, 43 into their nested relation illustrated in FIGS. 1 and 5.

Because of the particular arrangement, when the lens holder 27 is nested relatively to base 20, the spring 50 is constantly urging holder 27 out of this nested position into the display position of FIG. 2. It is the function of the flanges 14 of the container, or other guide surfaces of the container, to cooperate with the side flanges 60 of lens holder 27, to hold the lens holder against movement relatively to the base 20 until after the entire flare assembly has been moved outwardly of the container in the direction of the arrow 61 in FIG. 1. It will also be further appreciated that through the utilization of the flanges 60 on the holder 27, the lenses 28 are fully protected at all times from contact with any portion of another reflector flare assembly or with the casing, so that they will not be damaged. To replace the flare assemblies in the casing, each holder is first nested into its base 20 against the pressure of spring 50. Each flare assembly then is pushed into place in one of the three chambers of the container with the flanges 14 or other surfaces within the container holding the flare assemblies as illustrated in the drawings.

I believe that those skilled in the art will now fully appreciate that through my invention I am able to mount a series of reflector assemblies within a casing, and with each reflector flare assembly protected from the other assemblies within the casing so as to be readily removable from the casing without the application of force and without requiring manipulation and difficult handling. Further, the several assemblies are so held in position that no damage can be done to the lenses. Upon removal of any assembly from the casing, its spring 50 will immediately project the lens holder 26 into the display position illustrated in FIG. 2. Since this movement is automatic, it is obvious that a truck driver can with much ease and with considerable speed place a series of reflector flare assemblies in position on the roadway. I believe that those skilled in the art will fully appreciate and understand the considerable contribution that I have made to the art.

I now claim:

1. In a combination of the class described, a container, a plurality of base members, means slidably mounting said base members in said container, a reflector displaying holder for each base member, means movably mounting one holder on each of said base members for movement between a reflector display position and a position juxtaposed to said base member whereby said base members together with said reflector displaying holders may be inserted into said container, spring means pressing said holders from said justaposed positions to said display positions, and means on said container holding said holders juxtaposed to said base members against the pressure of said spring means until said holders slide out of said container.

2. In a combination of the class described, a container, a plurality of base members, means slidably mounting said base members in said container, a reflector displaying holder for each base member, means movably mounting one holder on each of said base members for movement between a reflector display position and a position juxtaposed to said base member whereby said base members together with said reflector displaying holders may be inserted into said container, spring means pressing said holders from said juxtaposed positions to said display positions, and holding means on said container effecting the holding of said reflector displaying holders in said juxtaposed positions relatively to said base members against the pressure of said spring means until said base members and reflector displaying holders slide relatively to said holding means outwardly of said container.

3. In a combination of the class described, a container, a plurality of base members, means slidably mounting said base members in said container, a reflector displaying holder for each base member, means swingably mounting one holder on each of said base members for movement between a reflector display position and a position juxtaposed to said base member whereby said base members together with said reflector displaying holders may be inserted into said container, a spring toggle at one end of each base member and extending between said base member and its reflector displaying holder for pressing said holder from said juxtaposed position to said display position, and means on said container holding each holder juxtaposed to its base member against the pressure of said spring toggles until said holders slide out of said casing.

4. In a combination of the class described, a container, a plurality of base members, a reflector displaying holder for each base member, means movably mounting one holder on each of said base members for movement between a reflector display position and a position juxtaposed to said base member whereby said base members together with said reflector displaying holders may be inserted into said container, and guide means slidably mounting each of said base members individually in said container spaced from the other base members and the holders carried thereby, said guide means maintaining said reflector display holders in juxtaposed relation to said base members while said base members are in said container.

5. In a combination of the class described, a container, a plurality of base members, a reflector displaying holder for each base member, means swingably mounting one holder on each of said base members for movement between a reflector display position and a position juxtaposed to said base member whereby said base members together with said reflector displaying holders may be inserted into said container, guide surfaces slidably mounting each of said base members and its holder individually in said container, spring means extending between each base member and its reflector displaying holder for pressing said holders from said juxtaposed positions to said display positions, and said guide surfaces holding said holders juxtaposed to said base members against the pressure of said spring means until said holders slide out of said container.

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