Nov. 13, 1962 R. R. GUNDERSON 3,063,556

SIGNAL FLARE PACKAGE

Filed May 11, 1959 2 Sheets-Sheet 1

FIG. 1

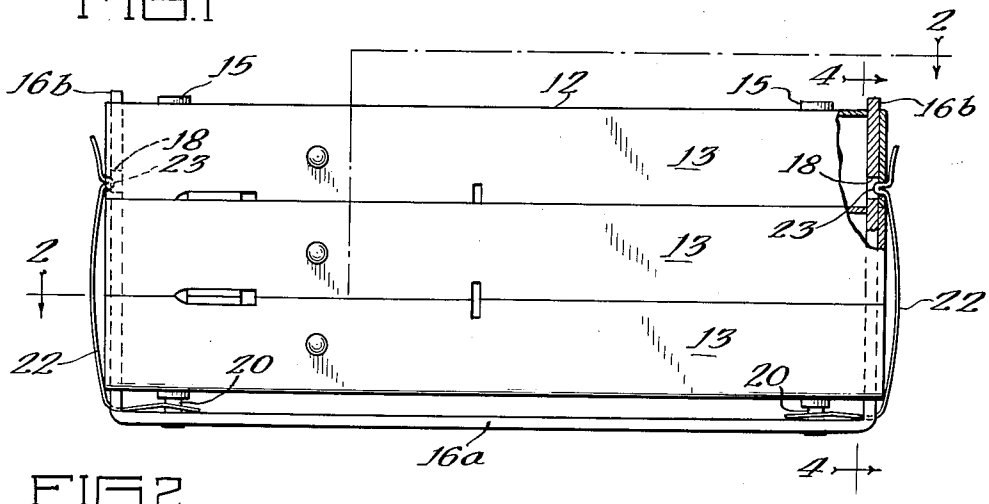


FIG. 2

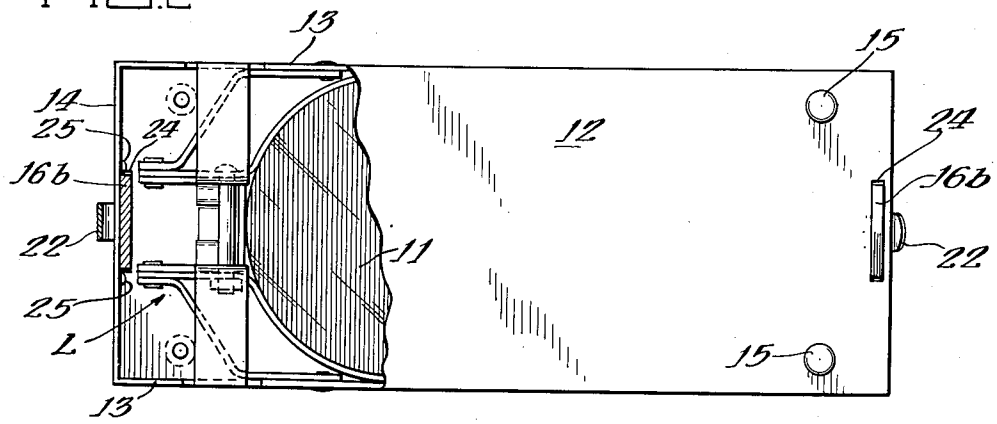


FIG. 3

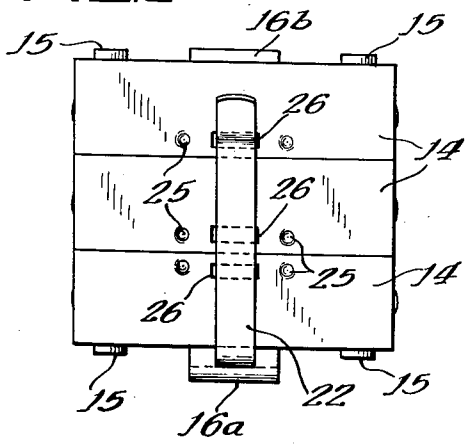
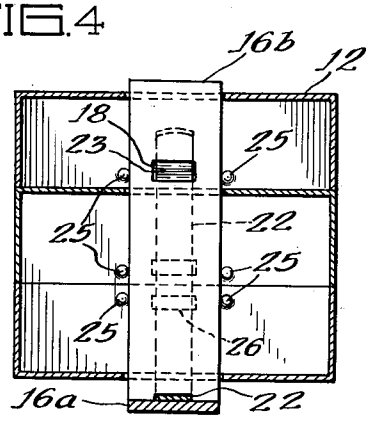


FIG. 4



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FIG. 6

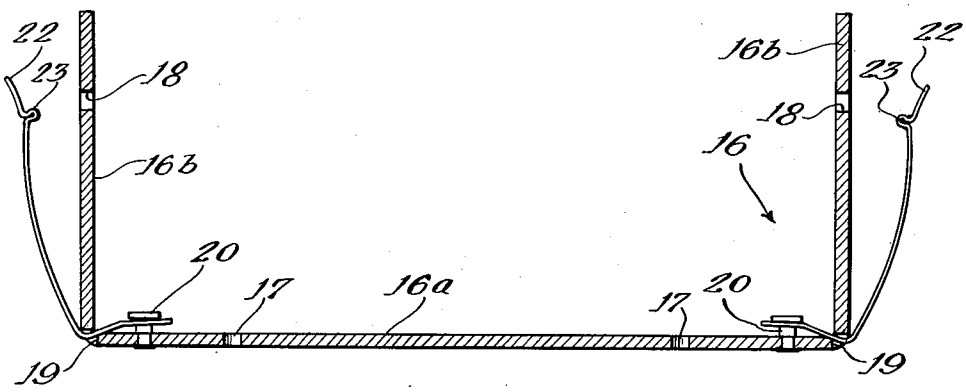


FIG. 5

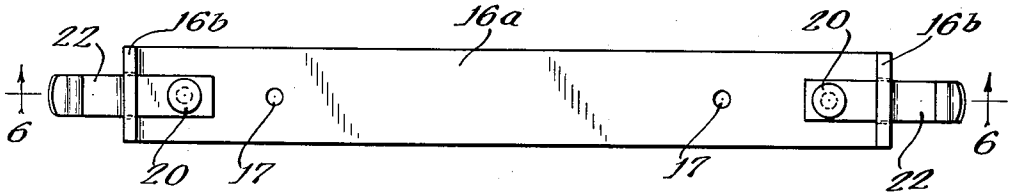


FIG. 7

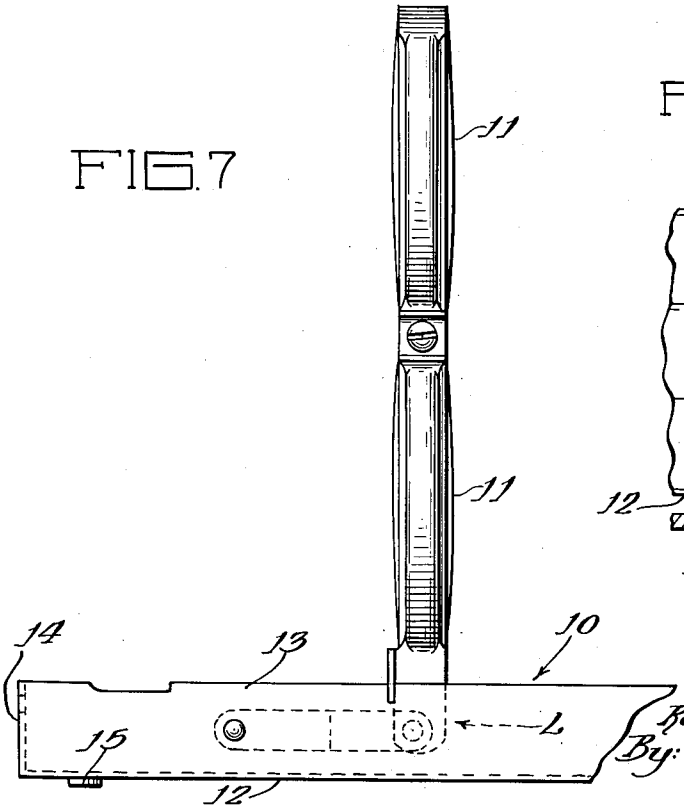
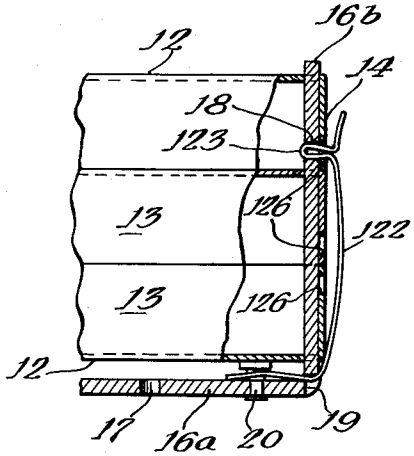


FIG. 8



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SIGNAL FLARE PACKAGE

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8 Claims. (Cl. 206—65)

This invention relates to a signal flare package, and more particularly to a holder for carrying a plurality of folded vehicle signal flares of the type generally disclosed in my U.S. Patent No. 2,757,891, issued August 7, 1956. The flares are carried in highway vehicles for use in time of emergency to warn traffic of a dangerous condition or a temporary highway obstruction.

The primary object of the present invention is to provide a new and improved signal flare package which conveniently holds signal flares when not in use so as to protect them from damage.

Another object is to provide a holder in which a plurality of signal flares are held together, the base frames of the signal flares cooperating to form the major portion of the structure protecting the flares.

A further object is to provide a holder bracket having a latching means which cooperates with a base frame of one of the flares to secure a number of the flares and the holder bracket together as a signal unit.

A preferred embodiment of the present invention is illustrated in the accompanying drawings, in which:

FIGURE 1 is a broken side elevational view, partly in section, of the signal flares secured together on the holder bracket;

FIGURE 2 is a sectional view taken as indicated on line 2—2 of FIGURE 1;

FIGURE 3 is an end elevational view of the structure shown in FIGURE 1;

FIGURE 4 is a sectional view taken as indicated on line 4—4 of FIGURE 1;

FIGURE 5 is a plan view of the holder bracket;

FIGURE 6 is a sectional view taken as indicated on line 6—6 of FIGURE 5;

FIGURE 7 is a fragmentary side elevational view of a signal flare, shown swung to its upright operative position; and

FIGURE 8 is a broken fragmentary side elevational view, partly in section, of the flare package showing a modified holder bracket and latching means for retaining the flares in stacked position.

In the embodiment illustrated, as best shown in FIGURE 7, each of the signal flares is shown having a tray-like base frame, generally designated **10**, and two sets of reflecting lenses **11** which are mounted on a linkage system, generally designated L, secured to the base frame to permit the lenses to be swung from the retracted position within the frame to the upright operative position shown in FIGURE 7. The base frame **10** has a bottom member **12**, side walls **13** and end walls **14** which form a protective open top box for the lenses when not in use.

As illustrated in FIGURES 1 and 3, the flares may be placed in juxtaposition with the adjacent side walls **13** in a common plane and adjacent end walls **14** in another common plane, in edge-to-edge relation to form a housing or package unit closed on six sides. When so positioned, the lenses of the flares are enclosed and protected on all sides by the base frames **10**. The outer flares are positioned with the bottom member of the base frame facing outwardly, thus exposing on all four corners a rubber button **15** upon which the flare may be set when in use.

In order to retain the flares in stacked position, a holder bracket, generally designated **16**, is provided which is adapted to cooperatively engage the flares when not in use. The holder bracket **16** is preferably U-shaped in configuration and includes an elongated base portion **16*a*** and a pair of outwardly extending arms **16*b*** formed integrally with the opposite ends of the base portion **16*a***. The base portion **16*a*** may be provided with a pair of spaced holes **17** which may be used to secure the holder bracket to the body of a vehicle in a conventional manner.

Cooperating latching or fastening means are provided at opposite ends of the holder bracket **16** to mutually cooperate with the arms **16*b*** and the stacked base frames **10** so as to retain the flare package in assembled relation. As best shown in FIG. 6, the latching means is preferably formed from a piece of spring steel and has an elongated shank **22** which terminates near its outer free end in a crimped lip portion **23**. The opposite end of the shank **22** extends through an aperture **17** in the arm **16*b*** and is anchored to the base **16*a*** by a headed rivet **20**. Sufficient play or lost motion is provided between the anchored end of the shank **22** and the rivet **20** so that the shank normally pivots outwardly a limited distance away from the arm **16*b***, except when in the latched position, as shown in FIG. 1. In the preferred form of the invention, apertures **18** are provided in each of the arms **16*b*** to accommodate the nose of the lip **23** during latching as will be later explained.

The structure of the present invention is such that the base frames of the signal flares can be stacked or threaded on the bracket arms **16*b***, and the arms will retain the juxtaposed frames in precise alignment for protection when not in use. To this end, a slot **24** is provided in the bottom member **12** of base frames **10**, adjacent each of their end walls **14**. Each slot **24** is slightly larger in dimensions than each of the arms **16*b*** so that frame **10** can be impaled on arms **16*b*** through slots **24**. Slots **24** are in alignment when base frames **10** are in the stacked position. Laterally spaced detents are preferably struck inwardly near the upper edge of each end wall **14**, substantially in alignment with opposite edges of each of the slots **24**, and act as guides **25** to closely receive the sides or edges of bracket arm **16*b*** to prevent binding or twisting of the frame members as they are impaled or received on the bracket arms.

In the preferred form of the invention, a latching cut-out portion or aperture **26** is provided in each of the end walls **14** of frame **10** for cooperating latching engagement with the lip **23**, as best seen in FIGURES 1 and 3. When the signal flares are in their assembled, stacked position, aperture **26** of one of the outermost frames will be positioned adjacent notch **18** on the bracket arm **16*b***. As can best be seen in FIGURE 1, to effect latching, the spring shank **22** is swung inwardly toward the end walls of the package, and the latching lip **23** is sprung upwardly into frictional engagement with the edge of the cut-out portion **26** to hold the stacked frames snugly together on the holder bracket. The notch **18** affords a convenient recess for the inwardly projecting end of the latching lip **23**.

The holder bracket illustrated in the accompanying drawings is of a size to receive three flares although one could be formed to accommodate a greater or a lesser number. Ordinarily, three flares are carried by a vehicle in order that one may be placed adjacent the vehicle when stopped on the road, and one at a distance from the vehicle in either direction.

To place the flares in the holder so that they are in a position to protect the lenses against breakage, each flare is folded to its retracted position. Spring clips **22** are disengaged from notches **18** in bracket arm **16*b*** and, due to their swingable connections to connecting rivets **20**, they will hang loosely a limited distance from the sides of the bracket arm **16*b***. Each tray-like frame **10** is then impaled on bracket arm **16*b*** through slots **24** in bottom wall **12**. Guides **25** on end walls **14** enable the frames to slide onto the bracket arms without binding or

twisting. The frames are manually placed side by side with the base of the outer flares facing outwardly. In this manner, the flares are all inside of a housing formed by the assembled frame members of the flares themselves. The outer surface of bottom wall **12** of the innermost flare on the bracket will stand on connecting rivets **20**, thus positioning subsequently placed flares so that apertures **26** of the outermost flare will be opposite notches **18** on the bracket arms **16***b*. Latch **23** of spring clip **22** is then sprung through aperture **26** of the outermost frame member. The outer flare being locked in this position, securely retains the inner flares mounted on the bracket arms **16***b*. The lenses are protected against road shock since the frames of the signal flares are held tightly together in this position.

A modification of the preferred embodiment is shown in FIG. 8. The lip portion **123** near the end of the spring shank **122** is considerably longer than in the preferred form of the invention, and the bottom edge of aperture **126** in the end wall is slightly below the bottom edge of slot **18** in the bracket arm. Thus when the lip portion **123** is sprung inwardly, it passes through the aperture **126** and frictionally engages the bottom edge of slot **18** to securely retain the signal flares in their stacked position. In all other ways, the modified device performs in the same manner as the preferred form of the invention.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, for some modifications will be obvious to those skilled in the art.

I claim:

1. A signal flare package, comprising: at least a pair of signal flares, each having a base frame provided with a bottom wall, opposed side walls and opposed end walls, said frames being positioned with their side walls and end walls in edge-to-edge relation respectively to form a housing closed on six sides, each of said bottom walls being provided with a slot positioned adjacent each of said end walls for alignment with a corresponding slot in the adjacent base frame, and each of said end walls having a pair of guides laterally spaced for substantial alignment with an opposite pair of edges of each of said slots; an elongated bracket provided at each of its opposite ends with an outwardly extending arm having a latching portion near its free end, each of said arms snugly fitting in said slots and between said guide members for retaining alignment of said base frames; and a spring latch on each of the opposite ends of said bracket, said spring latch being swingably mounted and shaped for releasable engagement with said latching portion whereby said engagement securely maintains said signal flares in protected position on the bracket.

2. A signal flare package, comprising: at least two signal flares, each having a base frame provided with a bottom wall, opposed side walls, and opposed end walls provided with cut-out portions, said frames being positioned with their side walls and end walls in edge-to-edge relation respectively to form a housing closed on six sides, each of said bottom walls being provided with a slot positioned adjacent each of said end walls for alignment with a corresponding slot in the adjacent base frame, and each of said end walls having a pair of guides laterally spaced for substantial alignment with an opposite pair of edges of each of said slots; an elongated bracket, said bracket provided with an outwardly extending arm at each of its opposite ends, said arms snugly fitting in said slots and between said guide members for retaining alignment of said base frames, the upper portion of each arm being provided with a notch in substantial alignment with the cut-out portion in the adjacent end wall of the upper base frame, each of said arms being provided with an opening adjacent said elongated bracket; a spring latch swingably fastened near each end of said bracket and extending through said opening in the bracket arm, the free end of each of said latches having a lip portion extending through its respective cut-out portion into cooperating latching engagement with its notch in the bracket arm for releasably securing said signal flare in protected position on the bracket.

3. A signal flare package, comprising: a pair of signal flares each having a base frame formed by a bottom wall and a peripherally extending protective wall upstanding from the bottom wall, the base frames having peripherally positioned guide portions adapted for alignment when the base frames are juxtaposed with their protective walls in edge-to-edge abutment to form a closed housing; a bracket positioned beneath the lower base frame and having a guide arm adapted to fit within said aligned guide portions to cooperate therewith in aligning the upper and the lower base frames; and a pair of opposed springy latch members on the bracket for yieldably engaging laterally opposed portions of the wall of the upper base frame of the closed housing to hold said base frames snugly together.

4. A signal flare package, comprising: a pair of signal flares each having a base frame provided with a bottom wall and a protective wall upstanding from the bottom wall along substantially the entire periphery thereof, the opposite sides of each of said base frames having guide portions adapted for alignment when the base frames are juxtaposed with their protective walls in edge-to-edge abutment to form a closed housing; a bracket positioned beneath the lower base frame and having a guide arm at each of its opposite ends adapted to fit within said aligned guide portions to align the upper and the lower base frames; and a latch member on each of the opposite ends of the bracket for engaging opposite ends of the upper base frame of the housing to retain said base frames snugly together.

5. A signal flare package, comprising: a pair of signal flares each having a base frame formed by a bottom wall and a peripherally extending protective wall upstanding from the bottom wall and defining a latching portion, the base frames having peripherally positioned guide slots adapted for alignment when the base frames are juxtaposed with their protective walls in edge-to-edge abutment to form a closed housing; a bracket positioned beneath the lower base frame and having a guide arm adapted to pass successively through said aligned guide slots to cooperate therewith in aligning the upper and the lower base frames; and a latch member having a shank portion connected to the bracket and a distal lip portion for engaging the latching portion of the upper base frame of the closed housing, the lip portion being located on the shank portion to be sprung away from the bracket thereby to hold said base frames snugly together.

6. A signal flare package, comprising: a pair of signal flares each having a base frame provided with a bottom wall and a protective wall upstanding from the bottom wall along substantially the entire periphery thereof, the opposite sides of each of said base frames having guide slots adapted for alignment when the base frames are juxtaposed with their protective walls in edge-to-edge abutment to form a closed housing; a bracket positioned beneath the lower base frame and having a guide arm at each of its opposite ends adapted to pass successively through said aligned guide slots to align the upper and the lower base frames; and a latch member on each of the opposite ends of the bracket for engaging opposite ends of the upper base portion of the housing to retain said base frames snugly together.

7. A signal flare package, comprising: a pair of signal flares each having a base frame provided with a bottom wall and opposed side walls, the opposite sides of each of the base frames having guide portions adapted for alignment when the base frames are juxtaposed with their side walls in edge-to-edge abutment; a bracket positioned beneath the lower base frame and having a guide arm at each of its opposite ends adapted to fit within said aligned guide portions to align the upper

and lower base frames; and a latch member on each of the opposite ends of the bracket for engaging opposite ends of the upper base frame to retain said base frames snugly together.

8. A signal flare package, comprising: a pair of signal flares each having a base frame provided with a bottom wall and opposed side walls, the opposite sides of each of said base frames having guide portions adapted for alignment when the base frames are juxtaposed with their side walls in edge-to-edge abutment; a bracket positioned beneath the lower base frame and having a guide arm at each of its opposite ends adapted to fit within said aligned guide portions to align the upper and lower base frames, the free end portion of each of said guide arms being provided with a latching portion; and a latch member on each of the opposite ends of

the bracket each movable to a position adjacent and above a portion of one of the opposite ends of the upper base frame and into engagement with a latching portion on one of the guide arms to retain the base frames snugly together.

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