June 21, 1966 L. H. UNDERWOOD 3,256,853

EMERGENCY MARKER

Filed Sept. 3, 1964 2 Sheets-Sheet 1

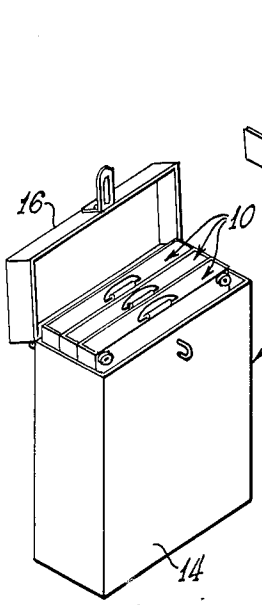


Fig. 1

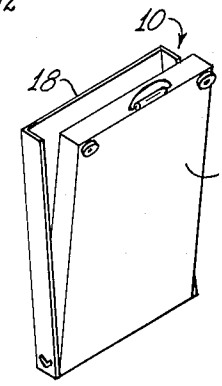


Fig. 2

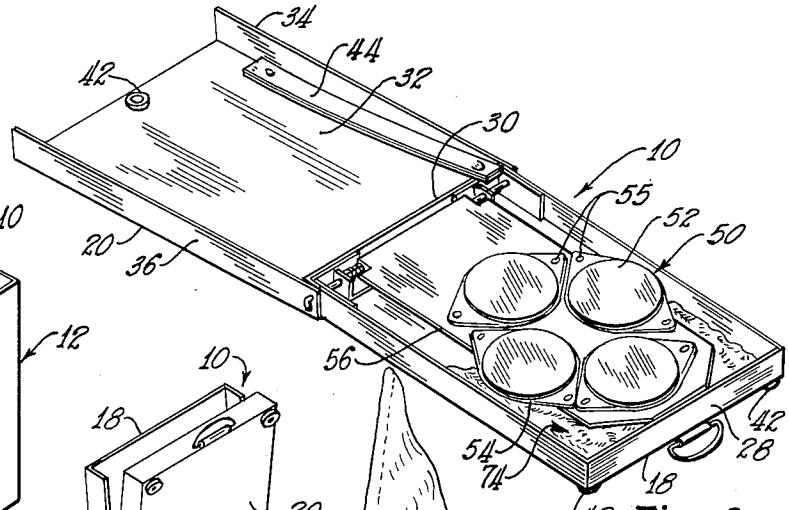


Fig. 3

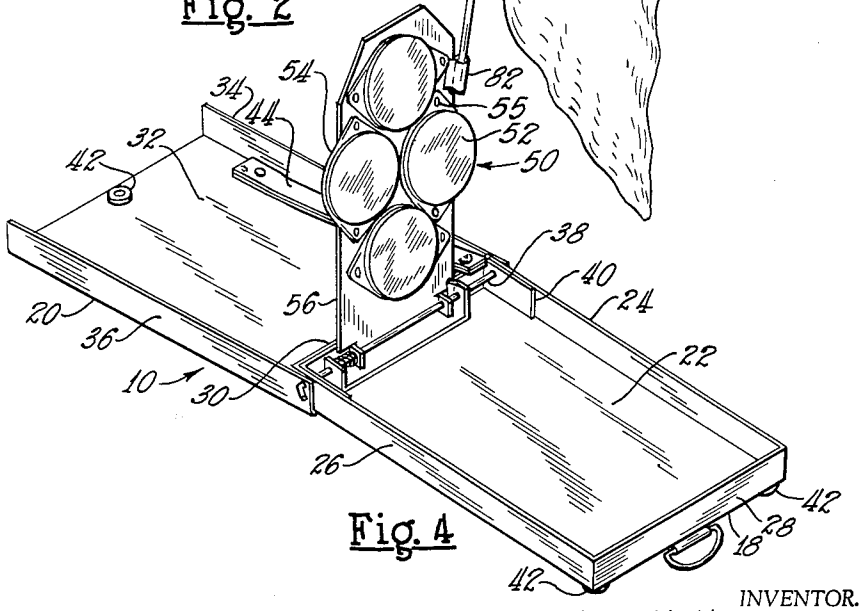


Fig. 4

INVENTOR.
LEO H. UNDERWOOD
BY Owen & Owen
ATTORNEYS

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EMERGENCY MARKER

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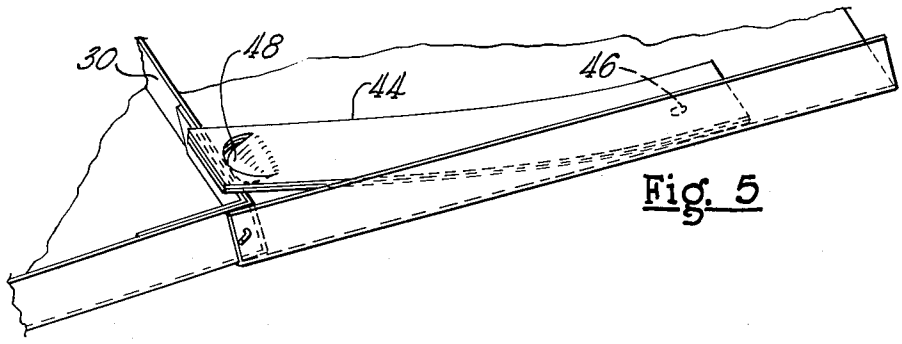


Fig. 5

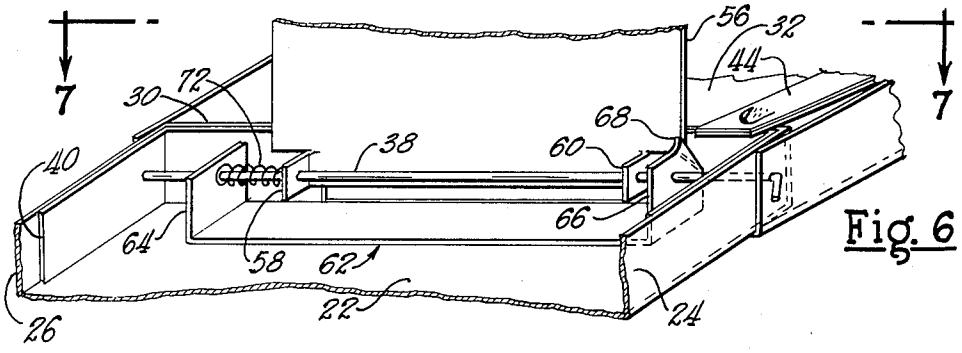


Fig. 6

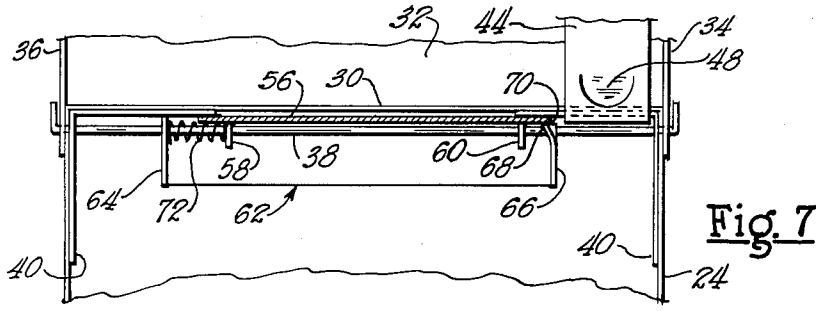


Fig. 7

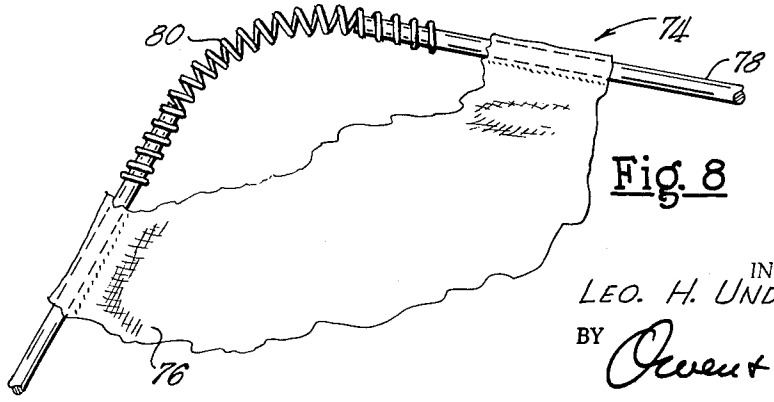


Fig. 8

INVENTOR.
LEO. H. UNDERWOOD
BY Owen & Owen
ATTORNEYS

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EMERGENCY MARKER

Leo H. Underwood, Howard, Ohio, assignor to L. H. Underwood, Inc., Mount Vernon, Ohio, a corporation of Ohio

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2 Claims. (Cl. 116—63)

This invention relates to an emergency marker and particularly to a reflective type emergency marker which can be folded and stored in a small space and yet can be easily and quickly put to use.

Emergency highway markers are commonly used by truckers and other commercial carriers and are required by law in many States, as well as for interstate commerce. Usually a minimum of three such markers must be carried so as to provide adequate warning in case the vehicle breaks down when on a public highway. The emergency markers must meet a number of requirements in order to provide maximum service and effectiveness. The markers must be capable of being stored in a relatively small space, especially since several of them must be carried by commercial vehicles at all times. The markers also must be easily and quickly set up when an emergency occurs, to minimize the possibility of an accident between the time the vehicle stops and the time the markers are positioned. The markers must be readily visible and minimum requirements for reflectivity are established by many States. At least one flag is usually required with the reflectors for each marker with the flag being of minimum size, such as twelve inches by twelve inches. Finally, the markers must be sufficiently heavy and provided with a large enough base to prevent them from being tipped over easily; the markers often are required to withstand wind of a given velocity, such as forty miles per hour.

The present invention relates to an emergency marker which meets all of the above requirements. The new marker can be folded compactly so that several can be stored in one relatively small container. Each of the markers is self-contained in its own case which also serves as a support or base for the marker. The case not only includes the reflectors but also a flag which can be readily mounted on a reflector support. The marker case can be opened easily and quickly and the reflectors set up in a minimum amount of time, along with the flag. The case has locking means to enable it to be held open and serve as a base and also has means for positively locking the reflector support in an upright position. The weight of the unit and the size of the base provided by the case also render the marker extremely difficult to knock or blow over.

It is, therefore, a principal object of the invention to provide an emergency marker which can be stored in a small space and yet can be easily and quickly set up.

Another object of the invention is to provide an emergency marker which is completely self-contained, including a base, a reflector support, reflectors, and a flag, with the base serving as a case for the other components.

Another object of the invention is to provide a foldable emergency marker with locking means which can quickly and positively lock the base in an open position and a reflector support in an upright position.

Other objects and advantages of the invention will be apparent from the following detailed description of a preferred embodiment thereof, reference being made to the accompanying drawings, in which:

FIG. 1 is a view in perspective of a container holding three folded emergency markers embodying the invention;

FIG. 2 is a view in perspective of one of the emergency markers shown in FIG. 1, being in a nearly closed position;

FIG. 3 is a view in perspective of the emergency marker of FIG. 2 with the case in an open position to form a base;

FIG. 4 is a view in perspective of the emergency marker similar to FIG. 3, but with a reflector support in an upright position and a flag assembled therewith;

FIG. 5 is an enlarged fragmentary view in perspective of locking means shown in FIGS. 3 and 4 for holding the base members open;

FIG. 6 is an enlarged, fragmentary view of locking means as shown in FIG. 4 for holding the reflector support positively in an upright position;

FIG. 7 is a view in cross section taken along the line 7—7 of FIG. 6; and

FIG. 8 is a fragmentary plan view, with parts broken away, of the flag used with the emergency marker, being shown in a folded position.

Referring to the drawings, and more particularly to FIG. 1, three emergency marker units **10** are shown stored in a relatively small container **12** including a main receptacle **14** and a hinged top **16**. The container **12** can be carried easily in the cab of the vehicle with which it is to be used or on some external portion of the vehicle. Each of the three marker units **10** include a case formed by two base members **18** and **20** (FIG. 2) which form an enclosed emergency marker unit when closed.

Referring to FIGS. 3 and 4, the first base member **18** includes a main base panel **22**, side walls **24** and **26**, and end walls **28** and **30**. The second base member **20** includes only a main base panel **32** and two side walls **34** and **36** which are spaced slightly farther apart than the side walls **24** and **26** so that the second base member **20** can encompass the base member **18** when moved toward the closed position, as shown in FIG. 2. Adjacent end portions of the base members **18** and **20** are hinged together by a common axle **38** which extends through the side walls **24**, **26**, and **34**, **36** as well as through corner braces **40**.

The base members **18** and **20** do not require a latch because they are held closed by the container **12** when inserted therein. This enables the emergency units to be opened and set up more quickly and also reduces the cost slightly.

When the base members **18** and **20** are open, they actually move slightly beyond a position in which they are co-planar or spaced 180° apart, with the base members being supported on the ground through three rubber buttons or legs **42**. The base members **18** and **20** are then held in this position by locking means more specifically shown in FIG. 5. The locking means includes a metal locking strip **44** having one end affixed to the base panel **32** by a suitable fastener **46** such as a rivet or screw. The free end of the locking strip **44** lies on and extends slightly beyond the end wall **30** of the base member **18**. The locking strip **44** has a stop **48** at this end which projects below the strip **44** and below the upper edge of the end wall **30** when the case is open. The stop **48** prevents the end wall **30** from being swung toward the strip **44** until raised and, hence, prevents the base members from being moved toward a closed position. This assures that the base members will remain fully open when the marker is set up to always provide the maximum base support for the marker. The stop member **48**, as shown in FIG. 5, can simply be bent downwardly from the strip **44** to provide the desired effect. Of course, other stop means man be employed with the strip **44**, if desired. It may be noted that when the base members **18** and **20** are closed to provide the case, the locking strip **44** is sufficiently short as to lie within the confines of the end wall **30**.

After the members **18** and **20** are moved to the open position and locked, a reflector assembly indicated at

50 is moved to an upright, operative position. The assembly 50 includes, in this instance, four reflectors 52 held by mounting rings 54 which are attached by suitable fasteners 55 such as screws or rivets to a main reflector support or panel 56. As shown, four of the reflectors 52 are employed in a generally diamond-shaped pattern with the two side reflectors extending beyond the support 56. While this provides an effective and compact pattern, other patterns can also be used and fewer or additional reflectors also can be employed. Anywhere from two to four reflectors usually are used, with either three or four meeting the requirements of most States. The reflectors are, of course, located on both sides of the panel 56.

As shown particularly in FIGS. 6 and 7, the reflector panel 56 has two rivet ears 58 and 60 bent outwardly from the lower corners thereof and provided with suitable holes to receive the axle 38. The ears 58 and 60 and the holes therein are positioned such that the panel 56 will swing to a substantially upright position against the end wall 30 or braces 40 of the base member 18 when pivoted from a flat, stored position, as shown in FIG. 3, to the upright position of FIGS. 4, 6 and 7.

A U-shaped axle and panel support or strip 62 is suitably affixed, such as by spot welding, to the base panel 20 near the end wall 30. The U-shaped strip 62 includes a pair of upstanding supporting ears 64 and 66 which are spaced apart substantially farther than the ears 58 and 60 of the panel 56 and aid in supporting the axle 38 on each side of the panel 56. The supporting ear 66 has an upper bent portion forming a projection 68 as well as a slot or notch 70 with the wall 30. When the panel 56 is swung to the upright position, the one edge is pushed into the notch 70 and the panel 56 is then held upright by the notch and the projection 68. For this purpose, a coiled spring 72 is mounted on the axle 38 between the supporting ear 64 and the panel ear 58. The spring 72 urges the panel 56 toward the ear 66 and when the panel 56 is swung upwardly, it is automatically pushed into the notch 70 and is then securely held therein by the projection 68. The panel 56 cannot possibly then blow over relative to the base members 18 and 20 regardless of the amount of wind or other force to which it is subjected.

When the supporting panel 56 is to be released, it simply can be pushed toward the spring 72, until free of the notch 70 and the projection 68, after which it is again laid flat, parallel to the panel 22. At that time, the strip 44 can be raised to free the stop 48 from the end wall 30, after which the two base members 18 and 20 can be folded together and the unit then placed back in the container 12.

A flag indicated at 74 in FIG. 3 is shown in a stored or folded position in FIG. 8. The flag 74 includes a square cloth banner 76 and a staff having a solid lower rod 78 and a coiled spring rod 80. The coiled spring rod 80 constitutes approximately half of the staff so that it can be folded generally at right angles to the solid rod 78 to enable the flag to be folded into the base member 18, around the reflector assembly 50, as shown in FIG. 3. In this position, the rod 78 lays along the side wall 26 and the spring 80 lays along the end wall 28. When the flag 74 is removed from the base member, the staff automatically swings to a straight position, after which it simply can be inserted in a tubular holder 82 (FIG. 4) which is welded or otherwise suitably affixed to an edge portion of the reflector support 56.

It will be seen that the overall emergency unit 10 can be assembled very quickly. The two base members 18 and 20 are simply swung open from the position of FIG. 2 to the position of FIGS. 3 and 4 with the stop 48 of the strip 44 then automatically stopping adjacent the end wall 30, the stop being urged downwardly by the resilient effect of the strip 44. The reflector support 56 is then swung upright from the flat position of FIG. 3 to the vertical position of FIG. 4, during which the support is cammed toward the left slightly by the projection 68 until it reaches the notch 70. Once in the notch, however, the panel remains upright until subsequently pushed against the force of the spring 72 to free it from the notch 70. The flag 74 is removed from the base member 18 and inserted into the tubular opening 82 during which time it automatically snaps to the straight position.

Various modifications of the above-described embodiment of the invention will be apparent to those skilled in the art, and it is to be understood that such modifications can be made without departing from the scope of the invention, if they are within the spirit and the tenor of the accompanying claims.

I claim:

1. A self-contained emergency highway marker comprising a first base member having a first main panel, a first pair of side walls, and a pair of end walls, a second base member including a second main panel and a second pair of side walls spaced apart slightly farther than said first pair of side walls, said first base member also having two spaced upstanding supporting ears extending from said first main panel on the same side thereof as said end walls and positioned near and perpendicularly to one of said end walls, a reflector supporting panel having a pair of panel ears bent from two corners at one end thereof and spaced apart a distance substantially less than the distance between said supporting ears, said supporting ears, said panel ears, and all of said side walls having aligned openings, an axle extending through said openings, a spring on said axle between one of said supporting ears and the adjacent one of said panel ears, the other of said supporting ears being bent to form a projection and also arranged to form a notch between said other supporting ear and the adjacent end wall of said first base member to receive an edge portion of said reflector panel, said spring being effective to urge said reflector panel toward said notch, a metal strap having an end affixed to said second panel of said second base member with the opposite, free end of said strap lying near and being urged against a longitudinal edge of said one end wall, said strap having a stop near the free end and positioned to engage said one end wall of said first member when said base members are opened and are approximately co-planar to prevent said members from being closed until said stop is raised from said one end wall.

2. A self-contained emergency highway marker comprising a first base member having a first main panel, a first pair of side walls, and an end wall, a second base member including a second main panel and a second pair of side walls spaced apart slightly farther than said first pair of side walls, said first base member also having two spaced upstanding supporting ears extending from said first main panel on the same side thereof as said end wall and positioned near and perpendicularly to said end wall, a reflector supporting panel having a pair of panel ears spaced apart a distance substantially less than the distance between said supporting ears, said supporting ears, said panel ears, and all of said side walls having aligned openings, an axle extending through said openings, a spring between one of said supporting ears and the adjacent one of said panel ears, the other of said supporting ears forming a projection and also forming a notch between said other supporting ear and the end wall to receive an edge portion of said reflector panel, said spring being effective to urge said reflector panel toward said notch, a strap having an end affixed to said second panel of said second base member with the opposite, free end of said strap lying near and being urged against a longitudinal edge of said end wall, said strap having a stop near the free end positioned to engage said end wall when said base members are opened to prevent said members from being closed until said stop is raised from said end wall.

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LOUIS J. CAPOZI, *Primary Examiner.*