July 29, 1941. R. F. HUTT 2,250,710

FLARE

Filed March 10, 1937 3 Sheets-Sheet 1

Fig. 1.

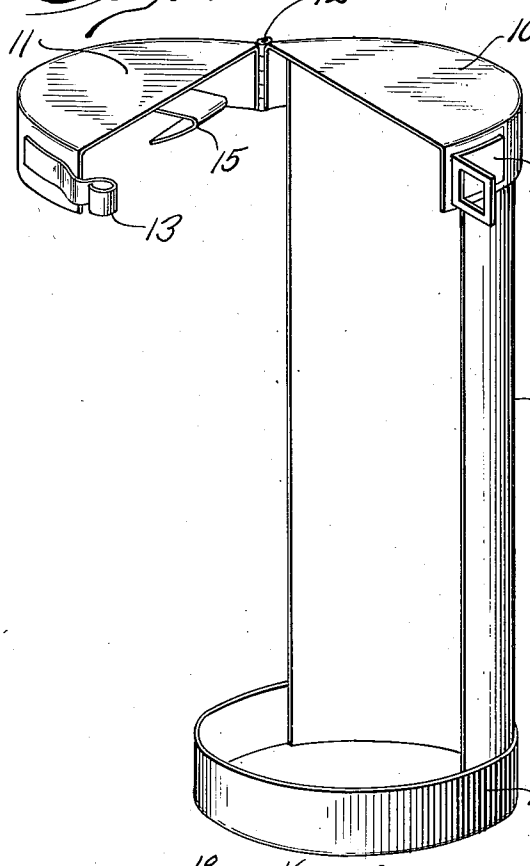
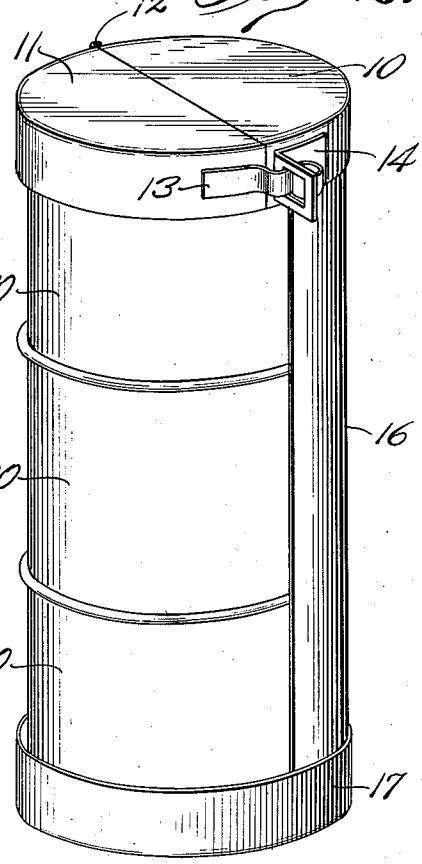


Fig. 2.



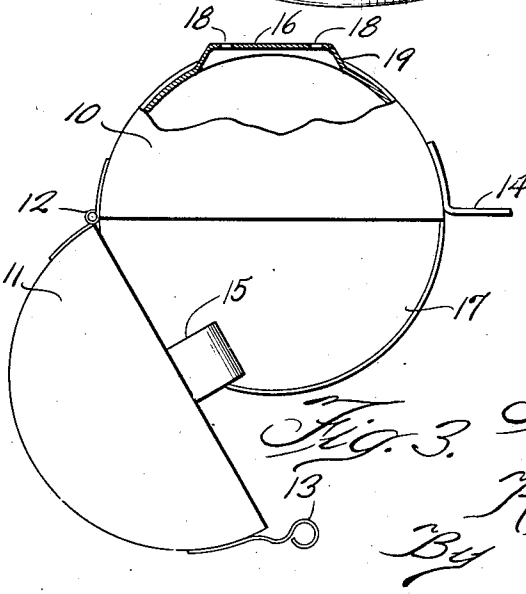


Fig. 3.

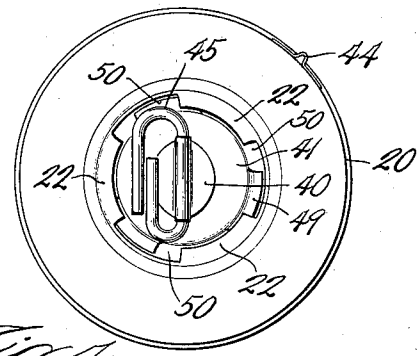


Fig. 4.

Inventor:
Raymond F. Hutt
By Earl V. Wisner
Atty.

July 29, 1941. R. F. HUTT 2,250,710

FLARE

Filed March 10, 1937 3 Sheets-Sheet 2

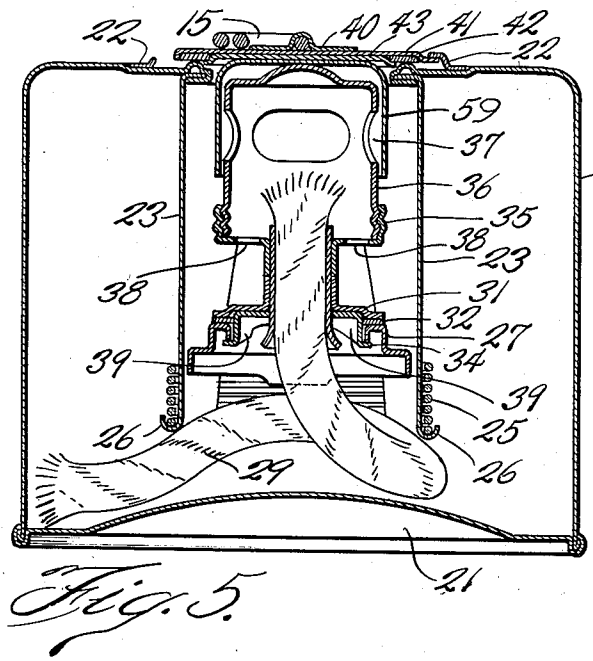


Fig. 5.

Fig. 7.

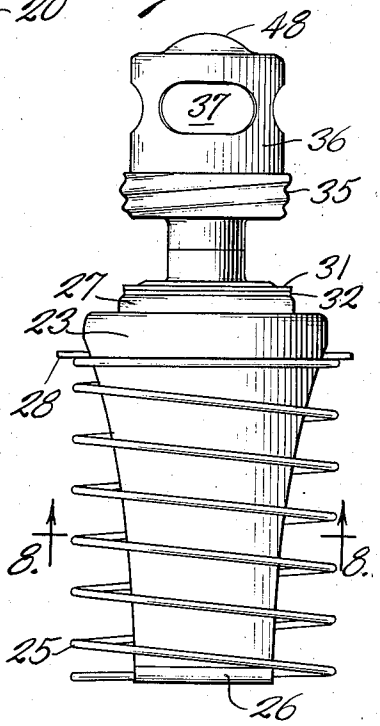
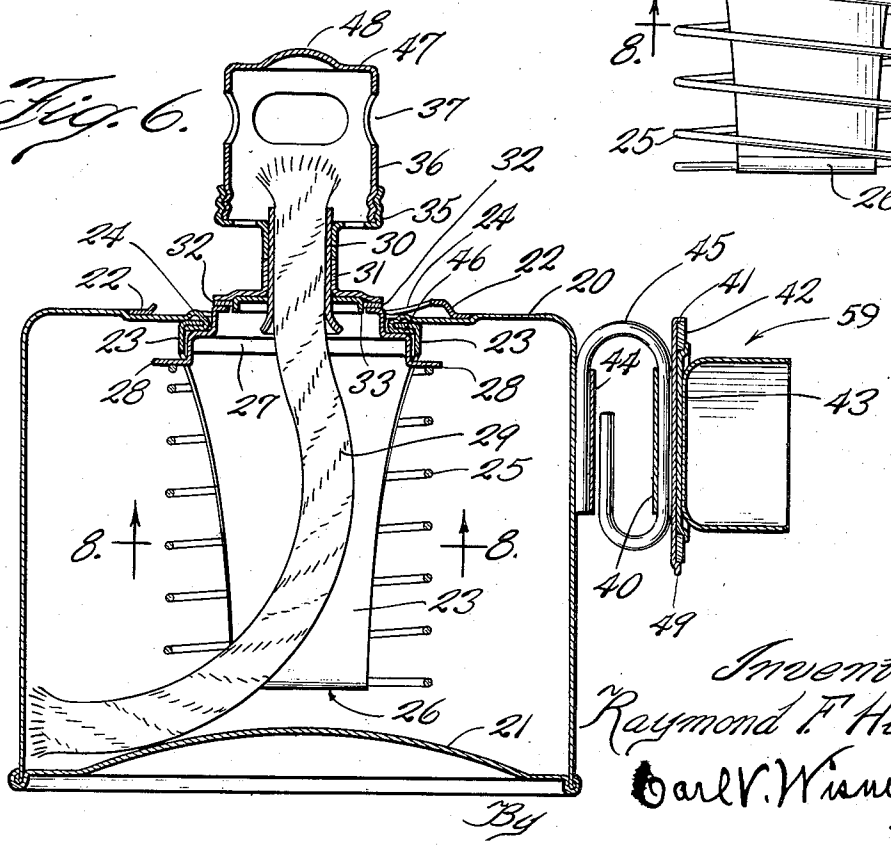


Fig. 6.



Inventor:
Raymond F. Hutt
By Earl V. Wisner
Atty.

July 29, 1941. R. F. HUTT 2,250,710

FLARE

Filed March 10, 1937 3 Sheets-Sheet 3

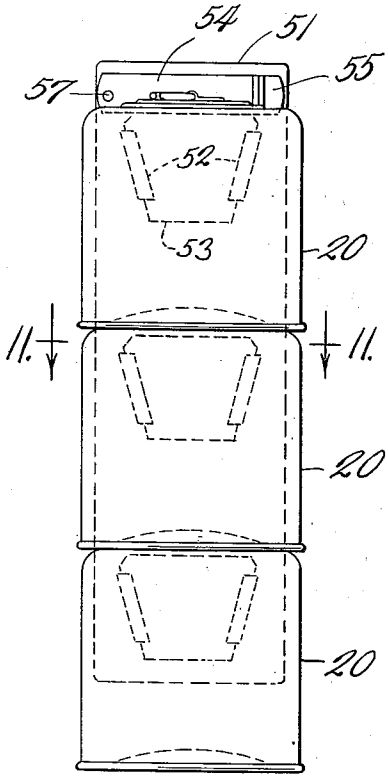


Fig. 10.

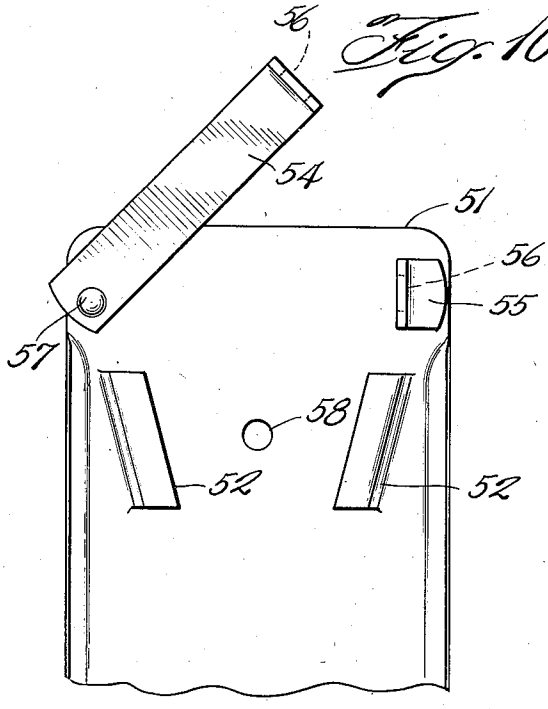


Fig. 9.

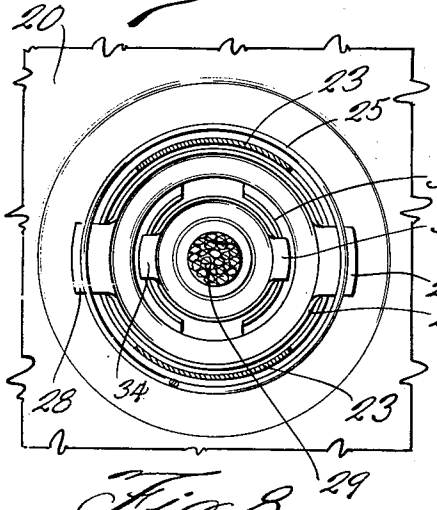


Fig. 8.

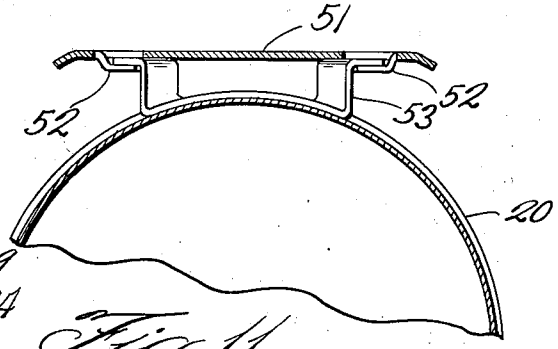


Fig. 11.

Inventor:
Raymond F. Hutt
By
Carl V. Wisner
Atty.

Patented July 29, 1941

2,250,710

UNITED STATES PATENT OFFICE

2,250,710

FLARE

Raymond F. Hutt, Fort Madison, Iowa

Application March 10, 1937, Serial No. 130,134

7 Claims. (Cl. 67—55)

This invention relates to improvements in flares used as signals on the highway, and is a continuation in part of my co-pending application, Serial No. 21,149, filed May 13, 1935. It is particularly concerned with improvements in flares which enable the user to store them compactly and conveniently.

The flare heretofore used has consisted of a fuel reservoir, a wick and tube protruding therefrom, and a flame guard positioned about the end of the wick tube. Boxes have been the only convenient means of storage, except where a cavity in the base of one flare has been provided to receive the protuberant flame guard of another. The latter type of design requires that the dimensions of the flare be larger because of the cavity in the base.

One object of my invention is to provide an inexpensive means of compactly stacking one flare on top of another in a rack, and yet permit their quick removal for use.

Another object of my invention is to provide a flare which may be collapsed into substantially cylindrical form and quickly sealed against any escape of fuel.

Another object of my invention is to provide means for quickly snuffing the flare before it is stacked.

Another object of my invention is to provide means for stacking flares in a rack or holder, and to conserve the space required for fuel, since flares are required to be constructed to burn a given length of time, usually twelve hours, which requires definite fuel capacity, ordinarily forty-four to forty-eight liquid ounces.

Where collapsing flares, in which the burner is supported by a coil spring, have heretofore been used, considerable difficulty has resulted from the entangling of the wick with the coil spring. Sometimes the wick interferes with complete compression of the coil spring, so that the flare may not be completely closed. Another object of my invention is to provide means to prevent entangling of the wick in the spring, so that the burner may be completely collapsed and the flare sealed in every instance.

These and other objects of my invention are more fully pointed out in the accompanying specification and claims, and illustrated in the drawings.

In the drawings, Fig. 1 is a perspective view of the preferred form of rack or holder for my set of flares with the flares removed. Fig. 2 is a perspective view showing the flares locked in place; Fig. 3 is a top view of Fig. 1, partly in section, showing the means for attaching the rack or holder to the side of a truck; Fig. 4 is a top view of the preferred type of flare. Fig. 5 is a sectional view of my flare with the burner collapsed and the cap sealed; Fig. 6 is a sectional view taken at right angles to the section in Fig. 5, showing the burner in operative position; Fig. 7 is a side elevation of the track and spring upon which the burner is carried; Fig. 8 is a sectional view along the line 8—8 of Fig. 7 showing the proportions of the track; Fig. 9 shows an alternate type of rack for my flares; Fig. 10 shows a partial elevation of the rack of Fig. 9 with the flare removed; Fig. 11 is a partial sectional view along the line 11—11 of Fig. 9.

In my invention I provide improved means for depressing the burner, and for securely sealing it against fuel leakage in the depressed condition. The prevention of leakage is important since my series of flares may be mounted either vertically or horizontally on a truck, depending on the arrangement of the truck body.

My preferred type of rack consists of a semi-cylindrical hollow member 16, Fig. 1, slightly larger in its radius than the radius of the series of flares. It is welded to a seat 17 which serves to seat the bottom unit of the series of flares. At the top it is welded to a semi-circular cap 10 to which is hinged at 12 a complementary semi-circular cap 11 provided with a spring member 15 welded approximately at its center. When the cap is closed, the spring member 15 bears upon the top unit of the series of flares so that the entire series is carried without movement or rattle. The cap member 11 is provided with a hasp 13 which passes through the eye of a cooperating latch member 14 on the complementary cap member 10 so that the units may be securely fastened with a padlock. The means for securing the rack to the truck body are shown in Fig. 3; two pairs of parallel holes 18, suitable for screws or bolts, are stamped in the body 16 of the rack at 19, although only one pair is shown in the drawings.

The method by which I depress the burner and seal it in place is shown in Figs. 5 and 6. The reservoir 20 has a concavity in its bottom sufficiently deep to provide clearance for the bail 45 of a contiguous unit when the cap 41 is locked in position as shown in Fig. 5. The flame guard 36, provided with a series of lateral flame ports 37 and a series of horizontal air inlets 38—38, Fig. 5, is seated in a cup 35, which is welded to the wick tube 30. The wick tube 30 is welded to an annular member 31, seated on a gasket 32, which in turn is seated on an annular carriage member 27. Member 31 is locked to member 27 by a bayonet lock, shown in Fig. 5, the ears 34 on the annular member 33 engaging the inclined flanges 39 of the carriage member 27.

When the ears 34 are inserted in slots (not shown) in carriage member 27 and the burner is twisted in the direction of the incline, the

gasket 32 is firmly locked to the carriage member 27.

Crimped to the circular orifice of the reservoir 20 at 46 is an annular member 23 having parallel leaves serving as a trackway, which are bent outwardly upon themselves at 26. In the slots formed at 26—26 is the bottom coil of a coil spring 25, which tends to expand the entire length of the leaves 23—23. Seated upon the top coil of the spring 25 are the feet 28 of the annular carriage member 27. When the flare is in operative position, as shown in Fig. 6, the spring 25 holds the carriage member 27 firmly against the stop 46 formed by crimping the reservoir 20 on the tracks 23.

In snuffing the flare, the operator places the cup 59 of the cap over the dome 48 of the flame guard, presses it downward, snuffing the flame, and turns the cap to seal the container. Welded to the top of the reservoir 20 is an annular member carrying a series of inclined flanges 22 and slots 50 adapted to receive feet 49 of the cap 41 (Fig. 4). When the cap is twisted, the feet of the cap 49 engage the inclined flanges 22 and securely lock the gasket 42 against the rim 24 of the reservoir to render the flare completely leak proof.

One of the several alternate types of racks for stacking the collapsible flares in shown in Figs. 9, 10, and 11. A plate 51 has a series of diagonal flanges, 52—52, stamped therein, spaced to accommodate the height of a flare body. The flare bodies 20 have a pair of diagonal flanges 53 welded thereto, the flanges 53 being at the same angle to the perpendicular of the flare as the flanges 52 are to the perpendicular of the plate 51. The plate 51 is provided with a pivoted hasp 54 with a hole 56 adapted to center with a similar hole 56 on an angle 55 welded to the plate 51. A padlock may be inserted through the holes 56—56, securely locking the flares when they are stacked as shown in Fig. 9. The pivot 57 of the hasp 54 is so positioned that when the hasp 54 is horizontal, its bottom edge bears on the top edge of the flange 53 of the top flare to wedge the set of flares securely to the rack. A series of holes 58 is provided in the plate 51 for securing the plate to a truck body.

It is to be understood that several other methods of compactly and securely stacking a set of collapsible flares may be designed, and that the drawings and specifications disclose only two of the preferred methods. It is, therefore, not my intention to limit the scope of my invention to the devices disclosed.

Having fully described my invention, I claim:

1. A set of flares and a carrier therefor, said flares being relatively symmetrical in shape in carried position, a seat in said carrier to receive one of the end flares of the set and a cap to receive the flare at the opposite end of said set, said cap comprising a fixed section and a section movable away from the fixed section to permit insertion of said flares and movable into juxtaposition to the fixed section to cover and secure the flares.

2. A set of flares and a rack therefor, said flares being provided with fuel reservoirs and flame guards adapted to be depressed within said fuel reservoirs in carried position, said rack being provided with substantially parallel seats to receive the end flares in said set, one of said seats comprising two sections hinged together whereby one section may be swung out of the way while the flares are stacked therein, one of said sections being provided with means for pressing said set of flares together.

3. A flare, comprising a fuel reservoir, a protuberant burner at the top of said reservoir, and an orifice in the top of said reservoir relatively larger in diameter than said burner, a support for said burner supported from the top of said reservoir and extending downwardly into the reservoir below said orifice, said support being spaced from the bottom of said fuel reservoir, said burner being movable upward and downward with reference to said support, and means for detaching said burner from said support.

4. A flare, comprising a fuel reservoir, a flame guard mounted on a wick tube protruding from the top of said fuel reservoir, an orifice at the top of said reservoir relatively larger than said flame guard, a support for said flame guard suspended from the reservoir and extending downwardly into the reservoir below said orifice, said support being spaced above the bottom of the fuel reservoir whereby to provide wick space between the support and the bottom, said flame guard being movable upward and downward with reference to said support, spring means carried by the support and urging said flame guard upwardly, and a rotatable cap serving to seal said orifice and retain said flame guard within said reservoir.

5. In a device of the class described, a fuel reservoir having a circular orifice in the top thereof, a burner movable upward and downward through said orifice, a ridge encircling said orifice and an annular member about said orifice having a series of inclined flanges extending inwardly toward said ridge, and a circular cap for said orifice provided with a compressible member to engage said ridge, a series of feet to engage said inclined flanges, and means to engage and hold said burner when said reservoir is capped.

6. In a device of the class described, a fuel reservoir having a circular orifice in the top thereof, a wick tube supported independently of said orifice and movable upward and downward with reference thereto, a flame guard having lateral flame ports disposed about the upper end of said wick tube, and a snuffer cap insertable in said orifice and adapted to encase the flame ports of said guard, said cap being provided with laterally projecting flange means at the top thereof, and said reservoir having means thereon around said orifice interengaging with said flange means for locking said flame guard and wick tube within said reservoir.

7. In a device of the character described, a fuel reservoir having an orifice in the top thereof, a wick tube and flame guard movable upward and downward through said orifice, an annular member secured to said wick tube and adapted to engage the orifice and limit the upward movement of the wick tube and flame guard, spaced supports suspended from the top of the reservoir and terminating short of the bottom of the reservoir, spring means carried by said supports and supporting said annular member, and a sealing cap adapted to cover said flame guard, said cap having a flange at the top thereof engageable with the surface of the reservoir around said orifice to effect a sealing therewith and cooperating means on the reservoir and flange for locking the sealing cap in place.

RAYMOND F. HUTT.