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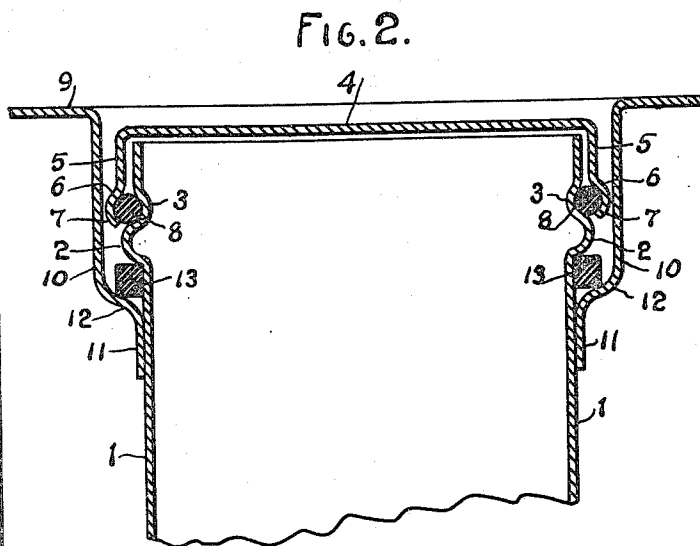
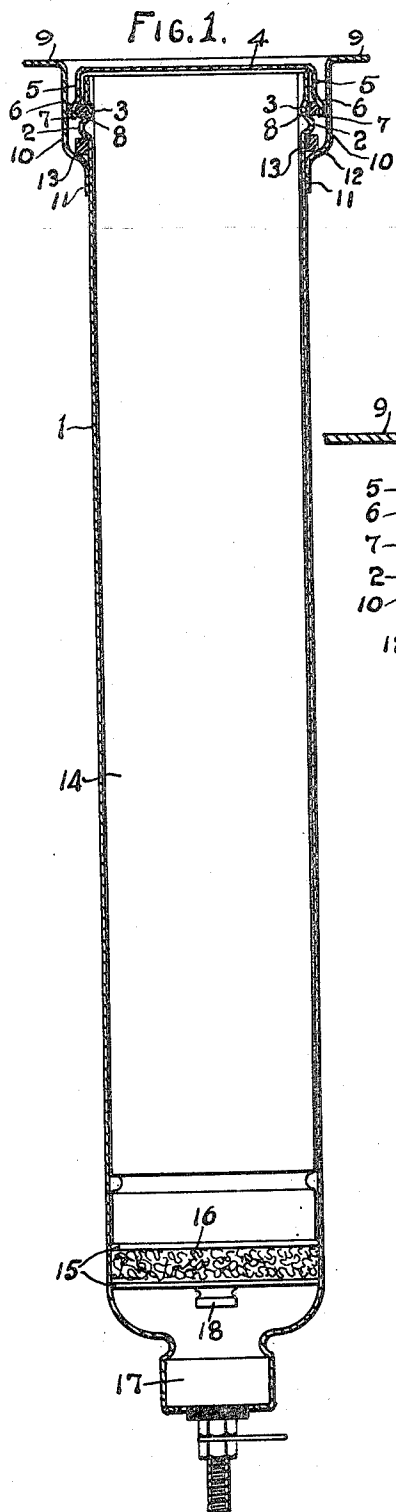
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2,201,482

FLARE CASING AND METHOD OF SEALING

Filed March 28, 1934

2 Sheets-Sheet 1



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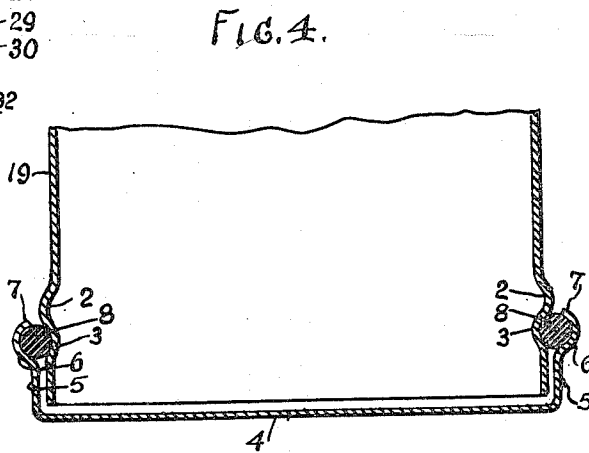
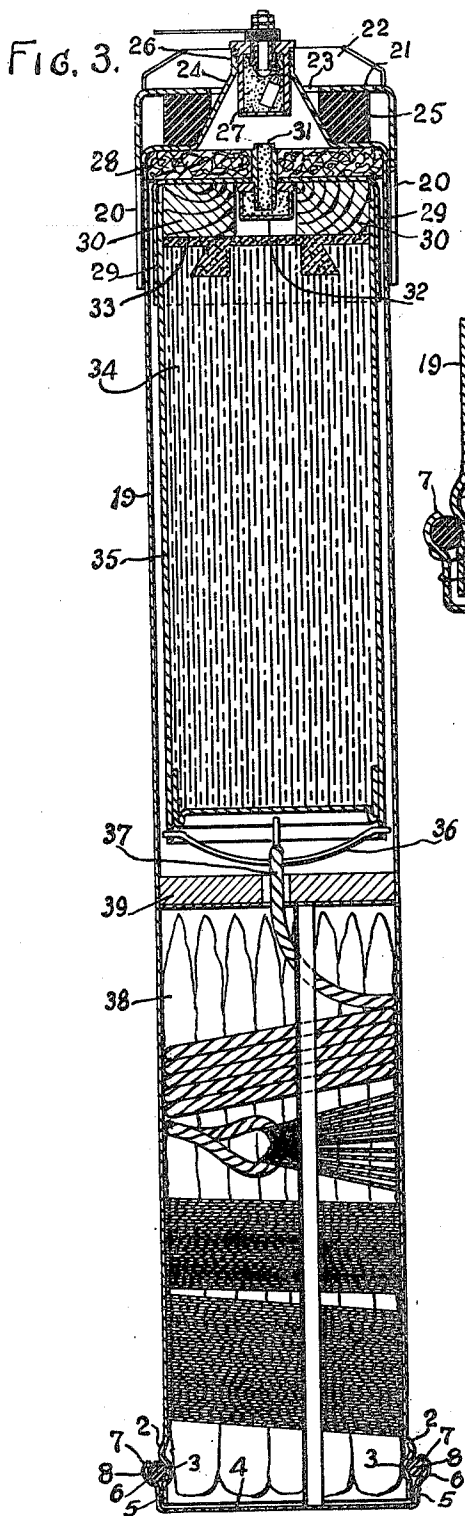
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FLARE CASING AND METHOD OF SEALING

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2 Sheets-Sheet 2



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FLARE CASING AND METHOD OF SEALING

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Application March 28, 1934, Serial No. 717,803

9 Claims. (Cl. 102-24)

This invention relates to improvements in flare casings, and has for its object to provide an improved means for sealing the casing.

It is particularly the object of this invention to provide, in connection with a flare casing adapted to be used in connection with airplanes for signalling purposes, a closure for the casing that will be easily stripped.

It is an object of the invention to provide, in connection with a flare casing, a closure for the casing that is held thereon by a resilient gasket which forms an air-tight seal.

It is also an object to provide, in connection with a closure for a flare casing, means to securely and resiliently seal the connection between the flare casing and the closure and at the same time permit a ready removal of the closure from the casing.

It is also an object of the invention to provide suitable means for supporting such a casing.

Referring to the drawings:

Figure 1 is a vertical longitudinal section through a flare casing and the parts inclosed therein.

Figure 2 is an enlarged section of the lower end of the flare casing, showing the closure therefor and the means by which the closure is attached to the casing.

Figure 3 is a vertical longitudinal section through a modified form of flare, in which the container is supported with the open end downward.

Figure 4 is an enlarged sectional view of the lower end of the container shown in Figure 3.

In the forms shown in Figures 1 and 2 the container 1 has an open upper end, around which there is a peripheral bead 2, somewhat remote from the end with a peripheral depression 3 between the bead and the upper end of the container. The upper end of the container is closed by means of a cup-shaped closure 4, which has a peripheral skirt 5 provided with an outwardly spun part 6 and an inwardly spun part 7 adapted to fit over a rubber ring 8 which rests in the depression 3 of the container and in the depression formed by the spun parts 6 and 7 of the skirt 5.

In order to support the container there is provided an annular bracket 9, which has a central opening therein, around which there is a downwardly extending cylindrical part 10 and a restricted part 11 connected to the cylindrical part 10 by means of a shoulder 12. The part 11 is adapted to fit closely around the container, while the cylindrical part 10 provides ample

space for the apron parts of the closure, and a rubber ring 13 which rests upon the shoulder for engagement with the bead, whereby the container is resiliently supported and is suspended from the bracket 9.

Within the container is a cartridge case or flare or pyrotechnic candle 14. Near the lower end of the container are two metal discs 15 spaced by means of a thick felt disc 16. These discs are immediately below the cartridge case or candle. The lower end of the container is reduced and forms a small space for containing a cup 17 in which a suitable explosive is provided for ejecting the cartridge case or candle. This explosive on igniting will eject the cartridge case or candle and at the same time ignite a fuse located in a fuse tube 18. A suitable means is provided for igniting the explosive contained in the cup 17.

The flare used in connection with this container is a minute-and-a-half flare. In the form shown in Figures 3 and 4 the flare is a three-and-a-half minute flare.

The numeral 19 is used to designate a cylindrical shaped metal container adapted to have attached to its upper end a supporting bracket consisting of side plates 20 and a top plate 21, reinforced by means of flanges 22. In the top plate is an aperture 23, adapted to receive a conical crown piece 24, which forms the upper end of the container. Around this crown piece and between the upper end of the container and the top plate 21 is a rubber ring 25 adapted to deaden the shock when the flare is discharged.

The upper end of the crown piece is cylindrical at the point 26, and has threaded therein a cylindrical firing plug 27. In the upper end of the metal container, below the crown piece, is a gas check disc 28 immediately beneath which is a projectile casing 29, which has in the upper end thereof a wooden block 30. Extending through the disc 28 and the upper end of the projectile casing is a fuse 31, the lower end of which is inclosed in a cup 32. Beneath the wooden block is a layer of powder 33 which has beneath it, filling the remainder of the projectile casing, flare material 34.

The fuse material is contained within a pasteboard carton 35, the upper end of which fits within the projectile casing and around the wooden block and the powder. The lower end of the carton is closed, and has attached thereto a yoke 36, to which one end of a cable 37 is attached, while its other end is attached to a parachute 38 separated from the carton by

means of a partition 39. This partition is provided with a hole through which the cable extends.

The closure for the container shown in Figures 3 and 4 is in all respects similar to that shown in Figures 1 and 2, and is therefore designated by the same reference characters. However, in this form the container is not supported by the annular bracket 9 since its lower end is open. The supporting bracket 9 is used in connection with an open upper ended container.

It will be understood that I desire to comprehend within my invention such modifications as come within the scope of my claims and my invention.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a flare, a container having one end open, a bead formed on the periphery of the container adjacent the open end, a cylindrical support for the container closely fitting the exterior thereof and having an enlarged part to receive the bead, and a closure for the open end of the container yieldingly mounted on the container within the enlarged part of the support.

2. In a flare, a cylindrical container having therein a pyrotechnic candle, one end of the container being open and having adjacent said end a bead and a groove, a rubber ring in the groove, a cup-shaped closure for said open end engaging said ring to form a resilient seal, and a support for the container engaging the container at the bead and having an enlarged part fitting over the bead, the ring and parts of the closure.

3. In a flare, a cylindrical container having therein a pyrotechnic candle, one end of the container being open and having adjacent said end a bead and a groove, a rubber ring in the groove, a cup-shaped closure for said open end engaging said ring to form a resilient seal, and a support fitting around the container adjacent the bead and having an enlarged part fitting over the bead, the ring and parts of the closure.

4. In a flare, a cylindrical container having in one end a flare material and means to eject and ignite the flare material and in its other end a parachute to support the ejected flare material, the parachute end of the container being open and having adjacent said end a bead and a groove, a rubber ring in the groove, a cup-shaped closure for said open end engaging said ring to form a resilient seal, and a support fitting around the container adjacent the bead and having an enlarged part fitting over the bead, the ring and parts of the closure.

5. In a flare, a flare casing, and a flare cap releasably and yieldingly mounted on one end of the casing, the attachment of said cap being strong enough to hold the weight of a flare within the casing and strong enough to resist atmospheric changes due to changes in altitude, but weak enough upon the application of the internal ejecting forces to eject the flare against the cap to partially deform the cap in the process of ejection from the end of the casing.

6. In a flare, a casing, and a removable cap, the walls of which are mounted adjacent the walls of the casing at one end thereof in such a manner as to form a hermetical seal between said cap and said casing, the attachment of said cap being strong enough to support the weight of a flare within the casing and to resist changes in atmospheric pressure without disruption of the hermetical seal due to changes in elevation of the casing and cap with the flare, but weak enough upon the application of the ejecting force upon the flare to be partially deformed in the course of being removed from the end of the casing containing the flare.

7. In combination, in a flare, of a flare casing, an interengaging removable cap hermetically sealed thereto adapted to support the weight of a flare within said casing, a hermetical sealing joint formed by the cap and flare casing being strong enough to support the weight of the flare and resist atmospheric changes in pressure but weak enough for the cap to be stripped from the casing upon the application of the ejecting force to the flare.

8. In combination, a flare casing, a cap, and yielding means seated within said cap and adjacent the end of said flare casing, the attachment of said cap being of sufficient strength to support the weight of a flare and maintain a hermetical seal while the flare is inoperative and of insufficient strength to resist being stripped from the casing upon the application of the ejecting force in the discharge of the flare.

9. In combination, a flare casing, a cap, and yielding means seated within said cap and adjacent the end of said flare casing, the attachment of said cap to the flare casing being of sufficient strength to support the weight of a flare and maintain a hermetical seal while the flare is inoperative and of insufficient strength to resist being stripped from the casing upon the application of the ejecting force in the discharge of the flare, and said cap being partially deformed during the ejecting operation.

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