April 3, 1945. J. R. C. QUILTER 2,372,981

CONTAINER

Filed May 21, 1942

Fig. 1.

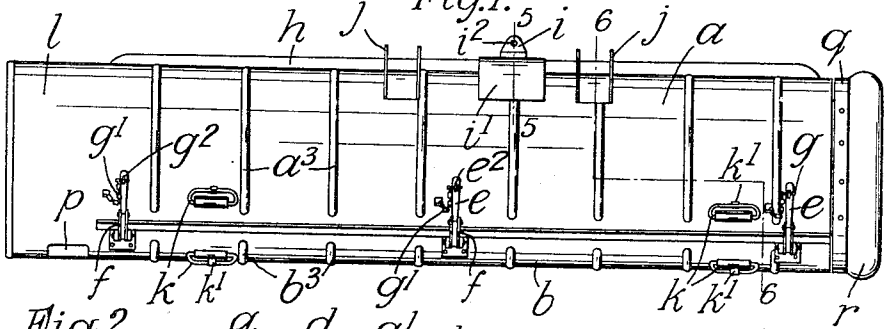
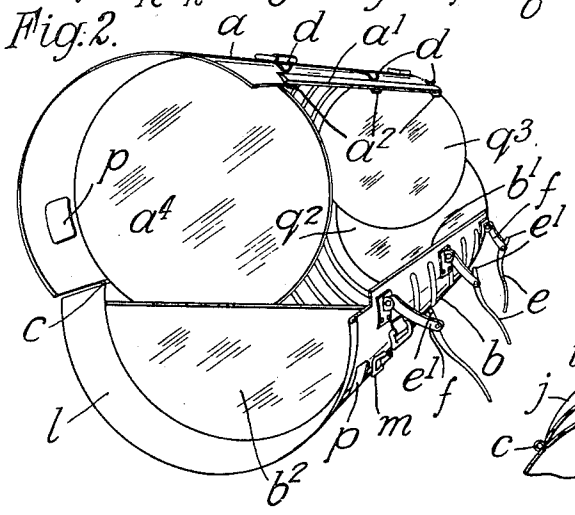


Fig. 2.



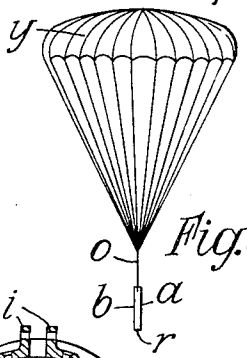


Fig. 8.

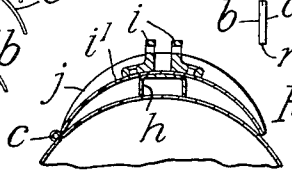


Fig. 5.

Fig. 3.

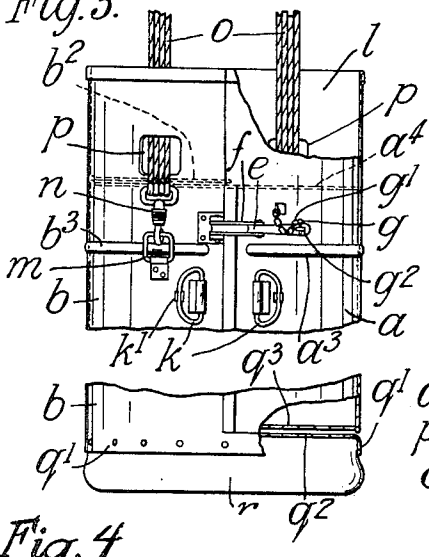


Fig. 4.

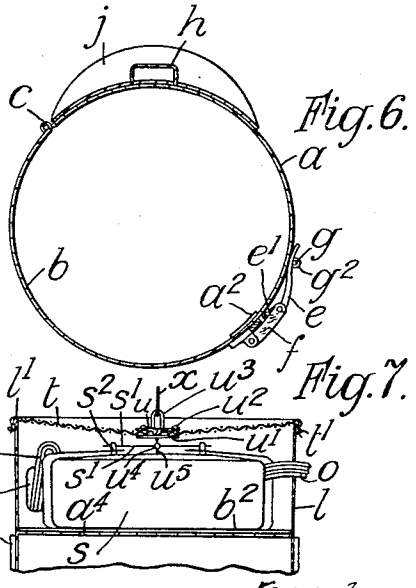


Fig. 6.

Fig. 7.

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UNITED STATES PATENT OFFICE

2,372,981

CONTAINER

John Raymond Cuthbert Quilter,
Woking, England

Application May 21, 1942, Serial No. 443,941
In Great Britain July 25, 1941

7 Claims. (Cl. 244—138)

This invention relates to parachute-fitted containers for military or other purposes, such containers being released from aircraft so as to float down to the ground with the enclosed supplies or equipment for the use of troops or others in the vicinity; the containers are commonly employed in association with parachute troops released from aircraft at about the same time, so that the heavier articles of supply and equipment may be floated down independently of the troops in order to reduce the load carried by each man.

One object of the present invention is to provide a container of the character described, which is very robust in construction, is not likely to become wedged as it passes out from the aircraft and not likely to become damaged when at the end of its descent it makes contact with the ground. Another object is to provide strength at the upper and lower ends of the container and a further object is to construct the container so that when on the ground it may be emptied of its contents with great rapidity. Other objects will be apparent from the following description.

The invention consists of an improved container comprising a body of cylindrical shape, divided longitudinally along substantially opposite generatrices to permit opening and closing for the loading and extraction of the contents, a terminal wall or walls in the form of overlapping disk-like members fitted to the respective portions of the container body, and two ends, of which one end forming the tail of the container encloses a folded parachute (or main and pilot parachutes) having a static operating line for connection to the aircraft, and the other end forming the nose of the container carries a suitable shock absorbing or cushioning device.

The body is preferably divided along diametrically opposed generatrices, so as to provide equal portions or halves, but one portion may be somewhat greater in circumferential extent than the other; the two portions are connected on one side by a row of hinges and fitted on the opposite side with suitable means for retaining the halves in closed condition. The body is reinforced by a longitudinal rail or girder secured to one portion thereof, as by rivets or by spot-welding.

The invention is hereinafter described with reference to the accompanying drawing, in which:

Fig. 1 is a side elevation of the closed container.

Fig. 2 is a perspective view from the tail end of the empty container in open condition, the parachute and fittings being removed.

Fig. 3 is a part sectional elevation of the tail end of the container, showing the suspension lines and their attachment shackles.

Fig. 4 is a part sectional elevation of the opposite end of the container, showing the percussion nose or cushion.

Figs. 5 and 6 are details in section on the lines 5—5 and 6—6 of Fig. 1.

Fig. 7 is a part sectional elevation of the tail end of the container, showing a parachute pack in place.

Fig. 8 shows the container in descent.

As illustrated in this drawing, the container body, which is of cylindrical shape, is divided into two equal portions or halves *a*, *b*, the two portions being connected on one side by a row of hinges *c* and fitted on the opposite side with releasable fasteners spaced at suitable intervals. As shown, these fasteners comprise three hooks *d* secured upon the upper part or lid *a* of the container body and spaced along the free edge a^1, and an equal number of lever arms *e* pivotally attached to the free edge of the lower portion *b* of the container body by means of links *f*; the points e^1 of the levers are engageable with the hooks *d*, the arms being then thrown over towards the lid so as to draw the two portions tightly together by a toggle action. The free edge a^1 of the lid is preferably formed with a beading of triangular section and fitted internally with inclined jaws a^2 spaced to correspond with the positions of the hooks *d*, so that the free edge b^1 of the lower portion wedges tightly between the beading and the jaws a^2 as the closure is effected. The engagement is locked by means of pins *g* anchored to the body by short chains g^1, the lever arms *e* having slots e^2 which in the closed position fit over staples or eyes g^2 secured to the lid by rivets or by spot-welding, the pins *g* being pushed through these staples above the slotted lever arms.

The container body is conveniently made of sheet metal, provided with circumferential stiffening ribs a^3, b^3, and it is also reinforced by a longitudinal rail or girder *h* of channel section secured by rivets or by spot-welding; this girder is shown secured to the upper portion or lid *a* at about one-sixth of the circumference from the line of the hinges *c*. At a point corresponding approximately to the position of the center of gravity of the loaded container, a supporting lug or bracket *i* is attached to the body by means of an arched plate i^1 curving over the girder *h*.

The lug is preferably riveted to the plate i^1, which is spot-welded to the girder h and to the lid a, and the lug carries a pin i^2 or other suitable means for attachment to the bomb rack of the transporting aircraft. At other points along the girder, arched fins or feet j are provided in order to stabilize the container in the rack during flight, these fins being shown as channel members secured to the girder and lid by spot-welding. Pivoted carrying handles k are also mounted upon the circumference of the container, for example two pairs of handles on opposite sides of the meeting edges a^1, b^1, these handles being normally held down flush by friction clips k^1 or the like.

One end of the container is arranged to enclose a suitable parachute such as a folded parachute with a static line for connection to the aircraft, and the shroud lines connected to the suspension means of the container, this end being uppermost during the descent; the body of the container is provided for this purpose with an open-ended tail l, likewise divided longitudinally into two parts, which open and close in the same way as the two portions of the container body. This end or tail may be closed by a canvas bag t or other cover, from which the static line protrudes. I provide means or connections on the inner side of the cover to ensure the release of the parachute from its pack when the static line is subjected to load and the cover thereby removed.

Upon the exterior of the container body, and at two diametrically opposite points at a convenient distance from the attachment of the tail or end enclosing the parachute, two hinged or swivelling shackles m are provided for the connection of snap hooks n upon the suspension lines o; the latter, which are shown as cords, but may obviously consist of straps or other flexible members, are connected in any suitable manner to the parachute shroud-lines normally stowed in the tail of the container, and are passed into the interior of the tail, as seen in Fig. 3, and thence outwardly by way of apertures p in the walls, so that the hooks n can be readily attached to and detached from the shackles m.

The other end or nose of the container, which is lowermost during the descent, comprises a recessed area q of undivided circular shape, attached to the portion b of the container body; as shown in Fig. 4, the recessed area receives a cushioning device r, which projects below the edge of the flange q^1 of the recessed area. The cushioning device may consist of aerated or cellular rubber, enclosed in a casing detachably secured to the flange q^1, or of a flattened block of aerated rubber material secured by adhesive to the flanged nose piece q^1 q^2.

In order to separate the body of the container internally from the two ends forming the nose and tail respectively, it is provided with terminal walls in the form of overlapping disk-like members; two complete disks q^3, q^2 are fitted respectively to the lid a and to the lower portion b adjacent to the nose, but at the other or crown end, enclosing the parachute, the terminal wall comprises a complete disk a^4 fitted to the lid portion and an incomplete disk b^2 (of semi-circular shape) fitted to the lower portion b of the body. When the container body is closed by bringing the lid a over the lower portion b, the pairs of disks slide freely over one another, those (a^4, q^3) fitted to the lid being preferably arranged to pass between or inside those (b^2, q^2) fitted to the lower portion; thus a double wall is provided at each end, but since the wall at the tail end will have less load to carry than that at the lower end or nose, weight is saved by reducing the area of the disk b^2. It will be understood that where the two portions a, b of the container body are of unequal circumferential length, the disk-like member or members fitted to the smaller portion must also be of reduced area, for example in the shape of a plane lune, in order to pass through the opening between the edges a^1, b^1.

The operation of the static line x, when the container is released from an aircraft, will cause the opening of the bag or cover enclosing the parachute within the crown, the bag being burst by the strain or being tied with frangible cords so as to yield to the tension; the parachute (or pilot and main parachutes) may conveniently be stowed in a pack s mounted upon the disk b^2, as shown in Fig. 7, the pack being normally kept closed by a pair of rip wires s^1 engaged in the locking cones s^2 of the pack. The cover t is shown as being secured by cords t^1 tied around its periphery over the beaded edge l^1 of the tail; in the middle, the canvas or like material of the cover is clamped between a pair of plates u, u^1 held together by screws u^2. The outer plate u carries a staple u^3 or other form of connection for the static line, while the inner plate u^1 has an eye u^4 in pivotal connection with the rip wires s^1; from the eye u^4 there also extends a length of cord u^5 providing a relatively weak or "lazy" connection with the parachute enclosed in the pack. When the tension of the static line acts to burst or remove the cover t, it also withdraws the rip wires s^1 from the locking cones of the pack; the parachute can then be extracted from the open pack by means of the cord u^5 and caused to deploy in the usual way for supporting the container during its descent, the static line remaining attached to the aircraft but being freed from the container by the breakage of the relatively weak connection u^5 when the latter is subjected to the load. The container then descends under control of the parachute y, as illustrated in Fig. 8. Upon making first contact with the ground, the container will be approximately upright, so that the impact will be cushioned by the lower end or nose piece filled with aerated rubber or like material, the container then canting over as it comes to rest. The parachute y can be disconnected from the container by releasing the hooks n engaging the shackles m on the exterior of the container, the latter being then opened by raising the lid a after unfastening the catches on the body by releasing the levers e. Any suitable type of parachute pack may be employed.

Although mainly intended for use with parachute troops, the present invention could be employed to drop supplies or equipment to other troops or persons.

What I claim is:

1. A container of the character described, comprising a hollow cylindrical body, said body being divided longitudinally into two portions, a longitudinal connection between said body portions, a pair of terminal walls each consisting of two parallel plates secured to the respective body portions, a nose and a tail secured to opposite ends of said body and extending beyond the respective terminal walls, said tail being adapted to enclose a folded parachute and apertured for passage of suspension lines from the enclosed parachute to the exterior of said body, and a cushioning device mounted in said nose, said terminal walls shutting off said nose and tail from

the interior of said body in the closed condition of the container.

2. A container of the character described, comprising a hollow cylindrical body, said body being divided longitudinally into two portions, detachable connections between said body portions, a girder secured to one of said body portions and extending along a generatrix of said body, a support connector secured to said one body portion over said girder, stabilizing means secured to said one body portion at points spaced along said girder, a pair of terminal walls each consisting of two parallel plates secured to the respective body portions, a tail and a nose secured to opposite ends of said body, said tail being adapted to enclose a folded parachute, and a cushioning device externally secured to said nose.

3. A container of the character described, comprising a hollow cylindrical body, said body being divided longitudinally into two portions, a hinge connection between said body portions, said hinge connection being aligned with a generatrix of said body, a terminal wall consisting of two parallel plates secured to the respective body portions, a tail and a nose secured to opposite ends of said body, said tail being adapted to enclose a folded parachute, said tail being divided longitudinally into two parts, said parts being secured to the respective body portions and capable of hinging movement on the same axis as the hinge connection between said body portions, external connectors upon said body, said tail parts being apertured at equidistant points for passage into engagement with said external connectors of a plurality of suspension lines attached to a parachute stowed in said divided tail and a cushioning device mounted in said nose.

4. A container of the character described, comprising a hollow cylindrical body, said body being divided longitudinally into two portions, a hinge connection between said body portions, a terminal wall consisting of two parallel plates secured to the respective body portions, a tail and a nose secured to opposite ends of said body, said tail being adapted to enclose a folded parachute, said tail being divided longitudinally into two parts, said parts being secured to the respective body portions and capable of hinge movement on the same axis as said body portions, a pair of pivotal shackles at diametrically opposite points upon the exterior of said body, said tail parts being apertured at diametrically opposite points for passage into engagement with said shackles of suspension lines attached to a parachute stowed in said divided tail, and a cushioning device mounted in said nose.

5. A container of the character described, comprising a hollow cylindrical body, said body being divided longitudinally into two portions, shackles upon the exterior of said body portions, a longitudinal hinge connection between said body portions, two terminal walls each consisting of two parallel plates secured to the respective body portions, one plate in each of said terminal walls being in the form of a complete disk and occupying the inner position relatively to the other plate of the same terminal wall, a nose and a tail secured to opposite ends of said body and extending beyond the respective terminal walls, said tail being open-ended and adapted to carry a folded parachute, the sides of said tail being apertured for passage of suspension lines from the parachute to said shackles, and a cushioning device mounted in said nose, said complete disks shutting off said nose and tail from the interior of said body in the closed condition of the container.

6. A container of the character described, comprising a hollow cylindrical body, said body being divided longitudinally into two portions, a longitudinal hinge connection between said body portions, a terminal wall consisting of two parallel plates secured to the respective body portions, a nose and a tail secured to opposite ends of said body, said tail being adapted to enclose a folded parachute, said nose being of undivided circular shape and secured to only one of said body portions, and a shock-absorbing device mounted in said undivided circular nose.

7. A container of the character described, comprising a hollow cylindrical body, said body being divided longitudinally into two portions, a longitudinal hinge connection between said body portions, a terminal wall consisting of two parallel plates secured to the respective body portions, a nose and a tail secured respectively to opposite ends of said body, said tail being adapted to carry a folded parachute, said tail being divided longitudinally into two parts, said parts being secured to the respective body portions for movement on the same axis as said body portions and apertured for passage of lines attached to a parachute stowed in said divided tail, said terminal wall shutting off said tail from the interior of said body in the closed condition of the container, and a cushioning block of aerated rubber material mounted in said nose.

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