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AERIAL CARGO LANDING CONTAINER

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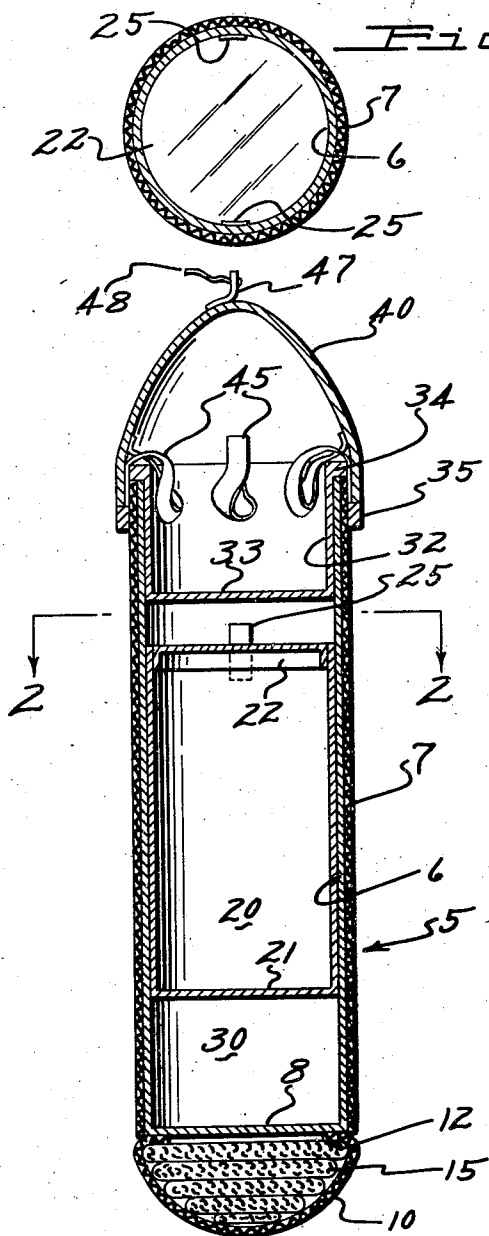


Fig. 1

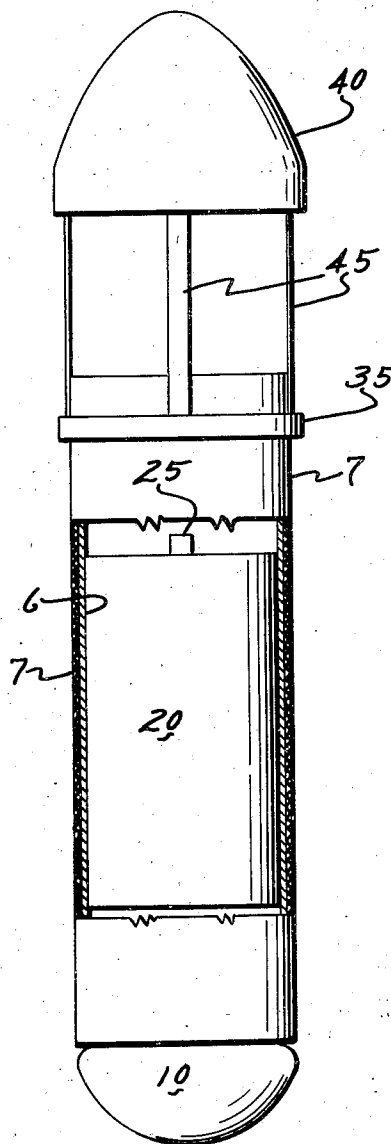


Fig. 3

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AERIAL CARGO LANDING CONTAINER

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3 Claims. (Cl. 244—138)

1

This invention has to do with devices for landing cargo from an airplane or the like and has for an object the provision of a free-falling container embodying novel means for adequately cushioning the impact when the device strikes the ground.

It is a further object to provide a device of this character which embodies means for maintaining the container in upright position during its descent.

An additional object of the invention is to provide in such a device a cargo-containing receptacle which is mounted as a piston in a cylindrical casing and utilizes air compressing space between the end of the receptacle and the end wall of the casing to cushion the impact.

It is also an object of the invention to provide an aerial cargo landing device which may be readily carried by and released from a travelling airplane in the manner of a bomb load.

For explanatory purposes, I shall now describe one embodiment of my invention, for which purpose I shall refer to the accompanying drawing, wherein

Fig. 1 is a medial vertical section;

Fig. 2 is a section on line 2—2 of Fig. 1; and

Fig. 3 is a view partly in side elevation and partly in medial section showing the device in descending position.

Referring now to the drawing, I show at 5 a cylindrical casing which is comprised of an inner wall 6, which may be of cardboard or any other suitable material, covered with a fabric sheet 7 impregnated with a suitable adhesive composition, such as one having an ethyl cellulose or cellulose acetate base. The casing has a bottom end wall 8 which may or may not be covered with the impregnated fabric material.

Secured to the end wall 8, there is a flexible fabric sheet 10 impregnated as before described, the sheet 10 having an annular flange 12 adhered to the end wall 8. A plurality of bumper pads 15 are confined between the sheet 10 and end wall 8 to provide a preliminary cushion for impact of the device with the ground. For the pads I prefer to use sisal hemp, although other suitable pads such as sponge rubber may be used.

I mount for longitudinal sliding movement in the cylinder a cylindrical receptacle or container 20 having a bottom end wall 21 and a removable cover lid 22, within which receptacle the cargo to be landed is packed. When the receptacle is loaded and placed in the cylinder I releasably anchor it in the illustrated position by means of straps 25, which may be fabric straps adhered

2

to the inner surface of wall 6 and to the side wall of the receptacle, as by a cellulosic glue. The straps 25 are of sufficient strength to hold the receptacle with its bottom end wall 21 spaced above the bottom wall 8 of the casing during all ordinary handling, whereby normally to provide an air chamber 30 in the casing below the receptacle, although the straps, or their adhesion to the walls, are such as will be broken by the impact of the bottom end of the casing with the ground when dropped as from an airplane or the like, so that at the moment of impact the receptacle will move downwardly in the casing in the manner of a piston and compress the air in the chamber 30 to fully cushion the impact.

The upper open end of the casing 5 is closed by a sleeve 32 having an end wall 33 and an annular peripheral flange 34, which latter provides a stop shoulder to abut the top edge of the casing. A cone 40 or parachute is fitted at its open end over the casing against a reinforcing ring 35 adhered to the casing, the cone fitting the casing with such frictional fit that it may be withdrawn therefrom in the manner to be described.

The cone is secured against complete escape from the casing by means of flexible straps 45 which are adhered at their respective ends to the cone and to the side wall of the casing. The straps 45 are sufficiently long to allow the cone to move away from the casing into the position shown in Fig. 3. By this provision the cone acts as a parachute to maintain the casing upright during its descent through the air after being dropped so that it will strike the ground in a vertical position. Thus during its descent the casing is in effect suspended from the hollow cone.

In use, the cylinder may be mounted upon an airplane in the same manner that a bomb is mounted upon a releasable bomb rack, and the tab 47 secured to the cone has its free end secured to a frangible cord 48 carried by the airplane. Thus as the cylinder is released from the airplane the cord 48 will pull the cone from engagement with the casing and will be broken by the weight of the casing after the cord becomes taut. The center of gravity of the device, when the receptacle 20 is loaded, is at a point adjacent the end wall 21, so that as soon as released the device will tend to assume an upright or vertical position during descent.

I claim:

1. A device for landing cargo from an airplane or the like comprising a casing having a bottom end wall, a cargo container slidably mounted as a piston in the casing, said container being slid-

3

able longitudinally of the casing in response to impact of the casing with the ground, an impact pad on the bottom end of the casing, a conical cover lid frictionally fitting on the casing and extensible means securing the lid to the casing.

2. A device for landing cargo from an airplane or the like comprising a cylinder having a bottom end wall, a cylindrical cargo container having a bottom end wall and mounted concentrically in the cylinder, said container being of an outside diameter to slidably fit inside the cylinder, and frangible strap means for retaining the container in position with its bottom end wall spaced from the bottom end wall of the cylinder whereby to provide a fluid chamber therebetween, said last-named means being frangible in response to impact of the bottom end of the cylinder with the ground.

3. A device for landing cargo from an airplane or the like comprising a cylinder having a bottom end wall, a cylindrical cargo container having a

4

bottom end wall and mounted concentrically in the cylinder, said container being of an outside diameter to slidably fit inside the cylinder, frangible means for retaining the container in position with its bottom end wall spaced from the bottom end wall of the cylinder whereby to provide a fluid chamber therebetween, said last-named means being frangible in response to impact of the bottom end of the cylinder with the ground, means associated with the cylinder to retain the latter in upright position during descent, said last-named means comprising a hollow substantially rigid conical cap releasably mounted on the top end of the cylinder, and flexible strap means secured at one end of the cap and secured at their other ends to the cylinder, said strap means being sufficiently long to retain the cap in position spaced from the top end of the cylinder when the cap is released from the cylinder.

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