May 13, 1930. H. E. PARKER, SR 1,758,170

PARACHUTE CONTAINER

Filed Aug. 14, 1929 2 Sheets-Sheet 1

Fig. 1.

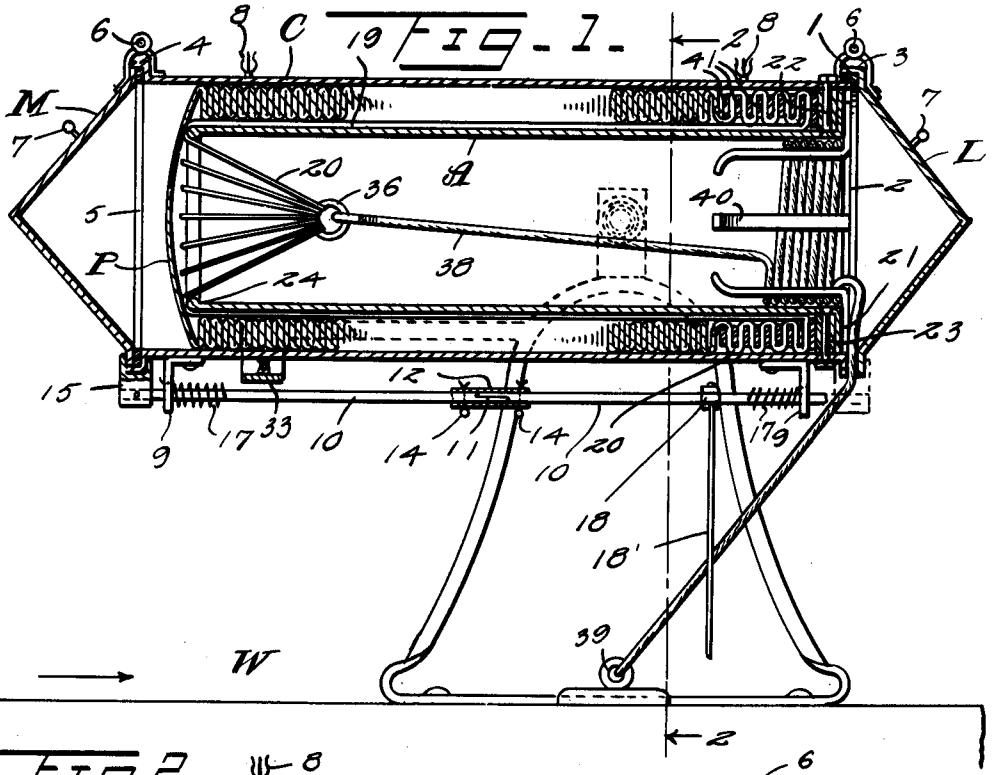


Fig. 2.

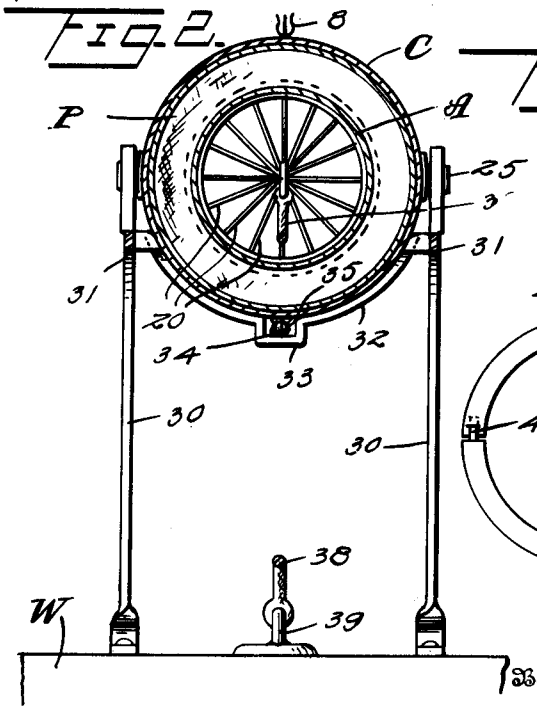
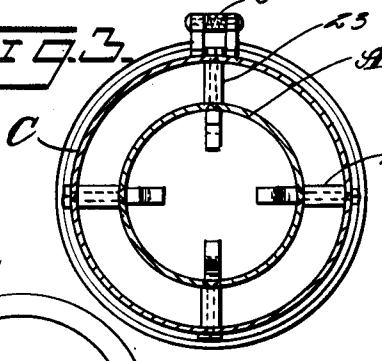


Fig. 3.



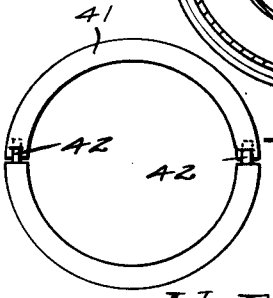


Fig. 5.

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PARACHUTE CONTAINER

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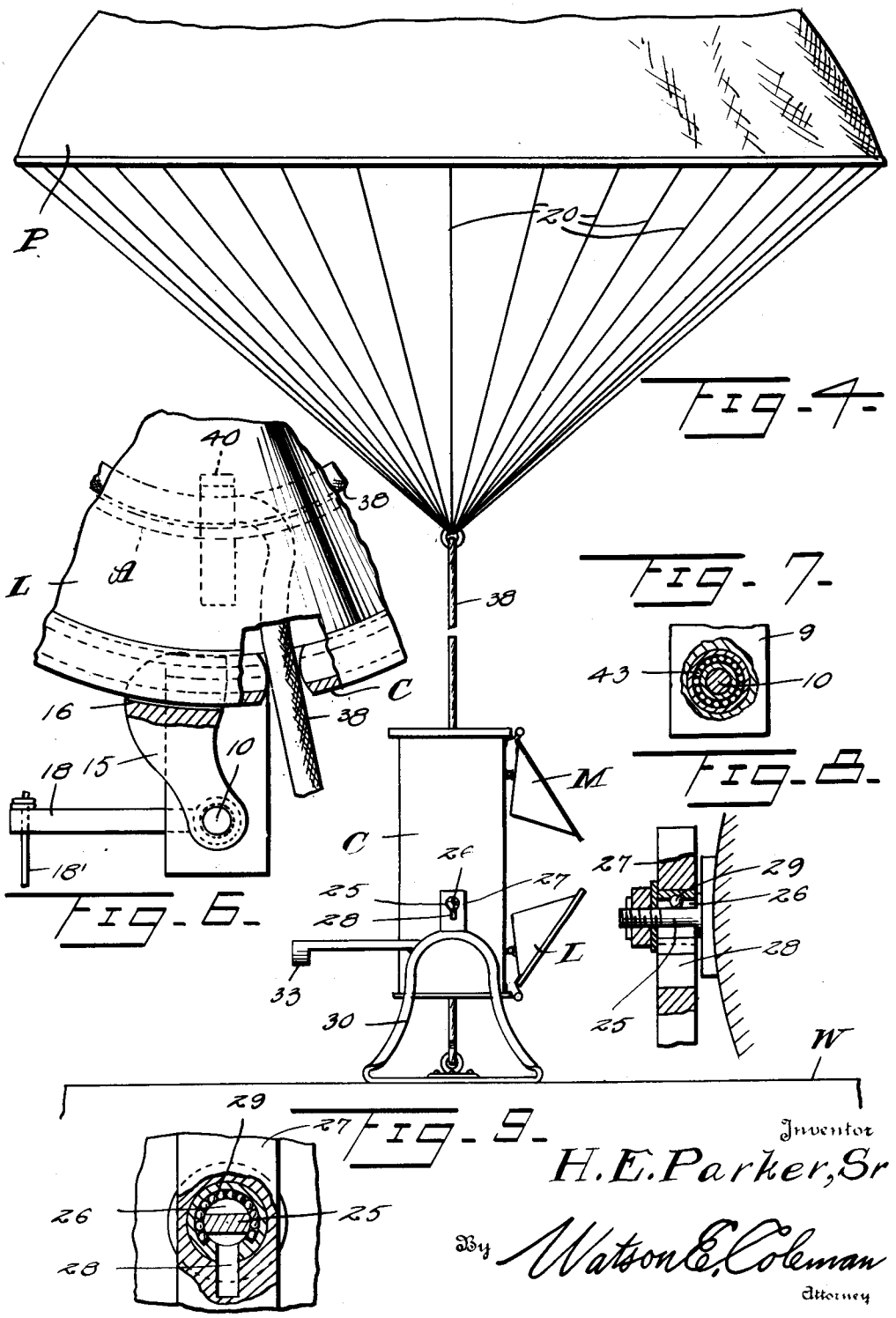


FIG. 4.

FIG. 7.

FIG. 8.

FIG. 6.

FIG. 9.

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UNITED STATES PATENT OFFICE

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PARACHUTE CONTAINER

Application filed August 14, 1929. Serial No. 385,819.

This invention relates to a parachute container, and it is an object of the invention to provide a device of this kind which is especially adapted for use in connection with an aeroplane and which serves to effectively house the parachute when not in use, yet readily permitting said parachute to become effective when desired.

Another object of the invention is to provide a container of this kind which is supported for swinging movement in a vertical direction and which is normally in substantially a horizontal position, together with closure members or lids associated with the opposite ends of the body of the container whereby the parachute housed within the container is effectively protected against outside elements.

A further object of the invention is to provide a device of this kind wherein the ends of the body of the container are closed by members or lids which automatically assume an open position, together with a releasable means for maintaining said lids in closed position, said lids when released automatically moving into open position so that substantially instantaneous release will be effected of the parachute housed within the container.

Furthermore, it is an object of the invention to provide a container of this kind which is provided with an interior casing suitably spaced from the peripheral wall of the body of the container to provide a chamber in which the major portion of the parachute is adapted to be received, said inside casing being open from end to end and affording effective means to assure a substantially immediate release of the parachute when desired.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved parachute container whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:—

Figure 1 is a view partly in section and partly in elevation of a parachute container constructed in accordance with an embodiment of my invention;

Figure 2 is a sectional view taken substantially on the line 2—2 of Figure 1 looking in the direction of the arrow;

Figure 3 is a fragmentary sectional view taken substantially on the same line as Figure 2 but looking in the opposite direction;

Figure 4 is a view in elevation of my container in release position and with the parachute extended or projected;

Figure 5 is a view in plan of one of the paper washers as herein disclosed;

Figure 6 is a fragmentary view partly in elevation and partly in section particularly illustrating the means for holding one of the lid members normally closed;

Figure 7 is a fragmentary detailed view partly in elevation and partly in section illustrating an anti-friction means for one of the release rods as herein employed;

Figure 8 is a fragmentary view partly in section and partly in elevation of one of the mountings for the outer casing;

Figure 9 is a fragmentary view partly in front elevation and partly in section of the structure illustrated in Figure 8.

As disclosed in the accompanying drawings, C denotes an outer casing of desired dimensions and which has its open end defined by an outstanding flange 1 to which is secured by an adhesive or otherwise as may be preferred a gasket 2 of cork or other suitable material with which is adapted to have direct contact a marginal portion of the lid member L for the forward end of the casing C. The marginal portion of this lid member L is defined by a flange 3 which, when the lid member L is closed as illustrated in Figure 1, surrounds the flange 1 of the casing C and thus provides effective means to prevent water, dust or the like from having ingress within the casing C through the front end thereof when the lid member L is closed. The opposite or rear end portion of the casing C

is defined by an angular flange 4 providing a seat for a gasket 5 which also may be of cork or other desired material and which is maintained in applied position by an adhesive or otherwise as may be preferred. The marginal portion of the lid member M for said rear end of the casing C has direct contact with this gasket 5 when in full closed position.

Each of the lid members L and M is connected to the adjacent end portion of the casing C by a hinge 6 of a conventional spring type which operates to constantly urge the lid member L or M into full open position and which also operates to provide automatic means for moving said member L or M into full open position upon release from closed position.

Each of the lid members L and M carries an outstanding headed lug or male member 7 which, when said lid member is in full open position, is received within an expansible socket or female member 8, thus providing additional means for effectively maintaining the lid member L or M in desired full open position.

The socket or female members 8 are preferably placed exteriorly of the casing C at the top thereof.

Depending from the lower portion of the casing C adjacent to opposite ends thereof are the brackets or lugs 9 providing mountings for the rods 10. The adjacent or inner ends of the rods 10 are stepped, as at 11, so that they can be readily brought into lapping relation and snugly surrounding said adjacent end portions of the rods 10, and more particularly the lapping portions thereof, is a sleeve 12 held in applied position by the cotter pins 14 or their equivalent, said pins as herein disclosed being disposed through the opposite end portions of the sleeve 12 and the adjacent portions of the rods 10. The two rods 10 are coupled in order to facilitate the desired application or removal thereof with respect to the brackets or lugs 9. The outer end portion of each of the rods 10 carries a block or arm 15 fixed thereto.

The outer portion of each of the blocks or arms 15 is provided with a groove 16 which, upon requisite rocking movement of the head or arm 15, is adapted to receive therein a portion of the flange 1 or 4 of the casing C and the adjacent peripheral portion of the lid member L or M whereby said lid member will be effectively locked in full closed position, yet readily released upon sufficient swinging movement of the block or arm 15 in a direction away from the casing C. Each of the rods 10 and its associated bracket or lug 9 has operatively engaged therewith a coil spring 17 of requisite tension which serves to constantly urge the rod 10 in a direction to maintain the block or arm 15 in locking position. As herein disclosed, the spring 17 encircles a portion of the rod 10 and has one end secured to the bracket or lug 9 and its opposite end portion anchored to the rod 10.

The lapping connection 11 between the rods 10 and as further facilitated by the applied sleeve 12 assures said rods 10 to have unitary rotation in the same general direction under the influence of the operating arm 18 fixed to one of the rods 10. The arm 18 may be operated in any desired manner but preferably through the instrumentality of a flexible cable 18′ or the like suitably secured to the arm 18 and leading within the cockpit of an aeroplane for ready access by the aviator or other occupant of the pit.

Arranged axially of the casing C is an inner casing A cylindrical in form and of a diameter less than the interior diameter of the casing C so that in the assembly of the casings C and A an intervening space 19 is provided in which is adapted to be substantially housed a parachute P and the cords 20 associated therewith.

One end of the casing A terminates in relatively close proximity to the forward end of the casing C when in its normal horizontal position and said end portion of the casing A is defined by an outstanding flange 21, the peripheral portion of which being in close contact with the adjacent portion of the wall of the casing C. Immediately adjacent to this flange 21 the casings C and A are held one to the other by the circumferentially spaced bolts 22 and each of said bolts 22 is surrounded by a spacing sleeve 23 snugly bridging the space between the adjacent end portions of the casings C and A. These bolts 22, as herein disclosed, are four in number and are equidistantly spaced circumferentially of the casings C and A.

The opposite end portion of the casing A terminates a material distance inwardly of the adjacent end of the casing C and said end edge of the casing A is beaded or otherwise rounded, as at 24, in order to minimize liability of injury to the cords 20 by contact with such edge.

The sides of the casing C are provided with the diametrically opposed outstanding trunnions 25 suitably anchored to the wall of the casing C. These trunnions 25 are spaced from the forward end of the casing C a distance equal to approximately one-third of the length of such casing C. As illustrated in detail Figure 9, each of the trunnions 25 constitutes a member having opposed faces flat and normally each of the trunnions 25 is received within the enlarged or circular portion 26 of a buttonhole slot provided in an upstanding bearing plate 27. The descriptive portion 28 of this slot is disposed downwardly and receives a trunnion 25 when the casing C is in a vertical position

as illustrated in Figure 4 and the parachute P extended or projected.

Associated with the enlarged opening 26 in each of the slots is a suitable anti-friction medium 29, as illustrated in detail Figure 9, to facilitate the desired swinging movement of the casing C from its normal horizontal position to an upright or vertical position. When the casing C is in its normal horizontal position the flat faces of each of the trunnions 25 are similarly arranged or, in other words, the flat faces of each of the trunnions 25 are disposed in parallelism with the longitudinal ends of the casing C.

The bearing plates 27 are suitably affixed to the upper portions of the side frames 30. These frames 30 are arranged side by side in desired spaced relation and are suitably anchored upon the upper portion of a wing W of the aeroplane, or otherwise as the requirements of practice may prefer. The upper portions of these frames 30 are provided with rearwardly disposed elongated arms 31, the outer end portions of which being connected by a saddle 32 upon which rests the rear portion of the casing C when in its normal horizontal position and which saddle serves to prevent the casing C from swinging downwardly below such normal position. The central part of the saddle 32 has a depressed portion 33 which carries an upstanding spring socket or female member 34 to receive the headed or male member 35 carried by the under part of the rear portion of the casing C and thus provide means for effectively holding the casing C in its normal position and also effectively holds the casing C against being jolted or other undue or unnecessary vibration especially when the aeroplane is in motion.

In practice I find it of advantage to have one of my improved containers arranged on the end of each wing and one on the tail of the fuselage.

As each of the devices is of a similar structure it is believed that the detailed description and illustration of one is sufficient for the purposes of disclosure especially in view of the fact that the devices may be otherwise arranged if preferred.

The outer end portions of the cords 20 of the parachute P are connected to a ring member 36 or the like and to which is also attached an end portion of a cable 38. The opposite end portion of the cable 38 is anchored, as at 39, to a desired point on the aeroplane and this cable enters my improved container through the forward open end of the inner casing A. The opposed portions of the lid member L and the adjacent end of the casing C are so formed as to compensate for the cable 38 when the lid member M is in full closed position. In loading my improved container surplus portion of the cable 38 is coiled around the winding arms 40 suitably positioned within the forward end of the casing A and anchored to the flange 21 of said casing. These arms 40 permit the cable to readily unwind therefrom as the parachute leaves the container.

The parachute cords 20 on the loading of the parachute within the container extend from the member 36 over the rear edge of the casing A and then forwardly of the space 19 to a point closely adjacent the forward end of the casing A. The remaining portions of the cords are returned but in folded relation as indicated in Figure 1, and interposed between adjacent folds of the cords 20 are the paper washers 41. These washers 41 are preferably made in two pieces with their extremities provided with suitable interlocking means, as at 42, for maintaining said sections in desired assembled relation.

The parachute proper has its marginal portions forced within the space 19 with the central portion of the chute stretched over the inside or rear end of the casing A as illustrated in Figure 1. By this manner of loading it is assured that the inside or rear portion of the casing A is in most effective position with respect to the loaded parachute to assure the desired release of the parachute for instant inflation. As the parachute moves out from within the space 19 the paper washers 41 hereinbefore referred to will readily fall off and fly free of everything. When the occasion requires the use of the parachute P it is only necessary to impart requisite pull on the arm 18 whereupon the lid members L and M will be released. Upon release of these members L and M they will instantaneously swing automatically into full open position and in view of the normal horizontal position of the casing C just immediately upon such opening movement, air will enter within the casing A through the forward end thereof with resultant force to carry the loaded or folded parachute out of the container but in a manner to effect an inflation of the parachute P as it leaves the container. When the parachute is in full free position, as illustrated in Figure 4, the same will offer resistance direct to the plane through the cable 38 without any hindrance or obstruction being offered by the container itself. As the container swings upwardly and when it reaches substantially a vertical position it will drop down a distance as afforded by the restricted portions 28 of the slots in the bearing plates 27 and thus assure the maintenance of the container in the vertical position as illustrated in Figure 4.

As illustrated in detail Figure 7, each of the brackets 9 is provided with suitable anti-friction means, as at 43, to facilitate the desired rotation or rocking movement of the associated rod 10.

From the foregoing description it is

thought to be obvious that a parachute container constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

1. A parachute container comprising an elongated casing having its ends open, lid members for the open ends of the casing, means for automatically moving said lid members into fully open position, releasable means for holding the lid members in closed position, said casing being adapted to house a parachute, means for supporting the casing for swinging movement in a vertical direction, and means for maintaining said casing in a substantially horizontal position.

2. A parachute container comprising an elongated casing having its ends open, lid members for the open ends of the casing, means for automatically moving said lid members into fully open position, releasable means for holding the lid members in closed position, a second casing supported within the first named casing and extending lengthwise thereof, said second casing being open at both ends, said second casing being spaced from the first casing, a parachute being housed within the first casing in the space between the two casings with a portion of the parachute overlying an end of the second casing.

3. A parachute container comprising an elongated casing having its ends open, lid members for the open ends of the casing, means for automatically moving said lid members into fully open position, releasable means for holding the lid members in closed position, said casing being adapted to house a parachute, means for supporting the casing for swinging movement in a vertical direction, means for maintaining said casing in a substantially horizontal position, and means effective when the casing is in a vertical position to hold said casing against swinging movement.

4. A parachute container comprising an elongated casing having its ends open and an outstanding flange on each end, hinged lid members for the open ends of the casing, means for automatically moving said lid members into fully open position, and releasable means for holding the lid members in closed position, said casing being adapted to house a parachute, said releasable means comprising a pair of pivoted slotted arms releasably engaging the outstanding flange of the casing and the outer edge of said lid members.

5. A parachute container comprising an elongated casing having its ends open, hinged lid members for the open ends of the casing, means for automatically moving said lid members into fully open position, releasable means for holding the lid members in closed position, said casing being adapted to house a parachute, and coacting means carried by the casing and the lid members for holding said lid members in fully open position, said releasable means comprising a pair of pivoted slotted arms releasably engaging the ends of the casing and the outer edge of said lid members.

In testimony whereof I hereunto affix my signature.

HARRY E. PARKER, SR.