

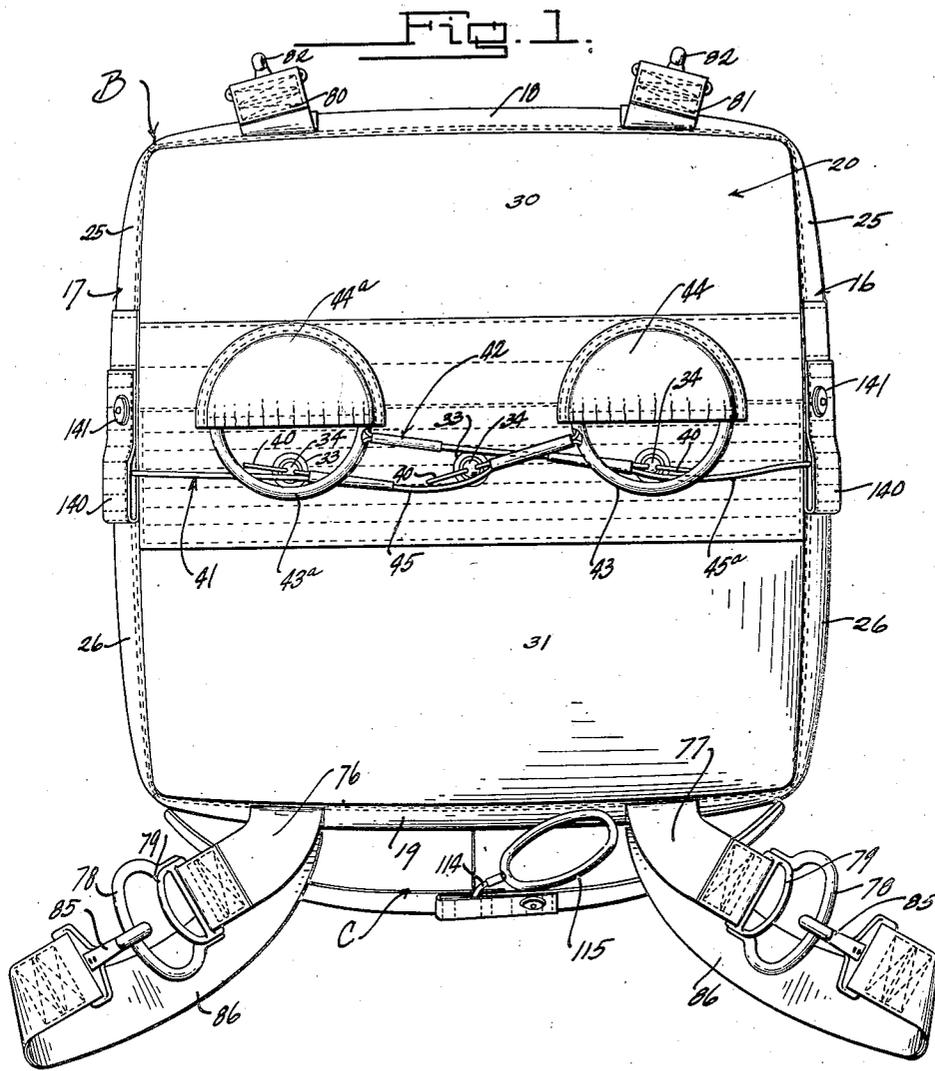
Jan. 23, 1934.

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PARACHUTE APPARATUS

1,944,801

Filed Nov. 7, 1929

5 Sheets-Sheet 1



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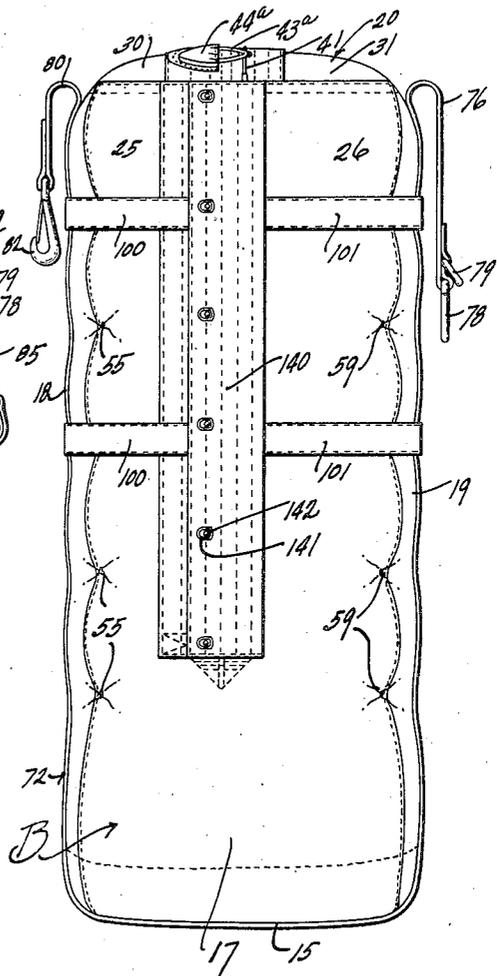
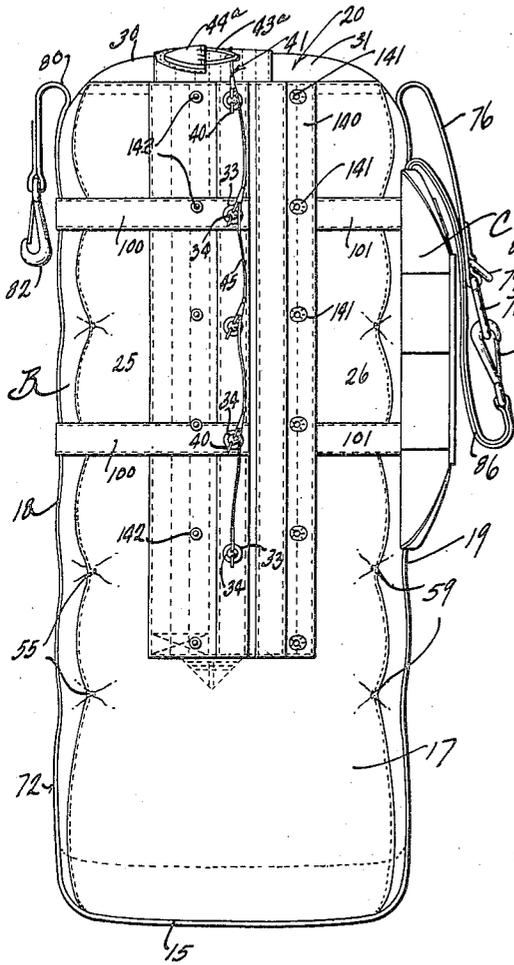
PARACHUTE APPARATUS

Filed Nov. 7, 1929

5 Sheets-Sheet 2

Fig. 3.

Fig. 2.



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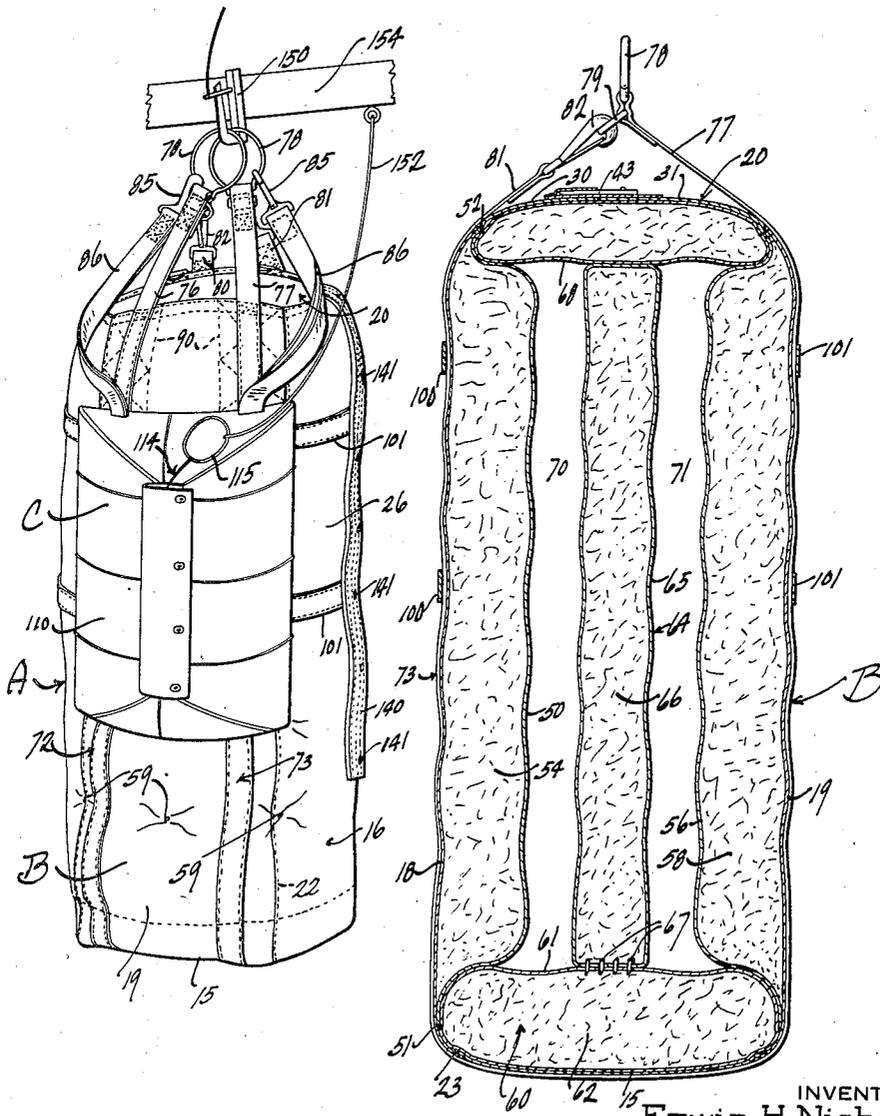
PARACHUTE APPARATUS

Filed Nov. 7, 1929

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Fig. 4.

Fig. 7.



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PARACHUTE APPARATUS

Filed Nov. 7, 1929

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Fig. 5.

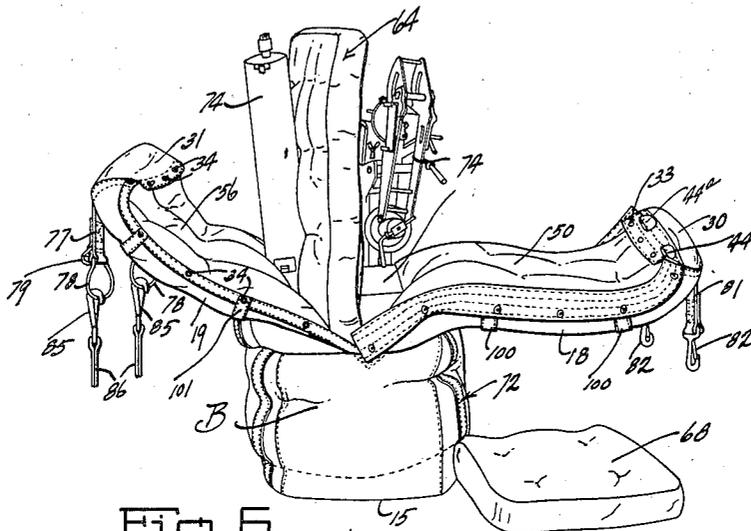
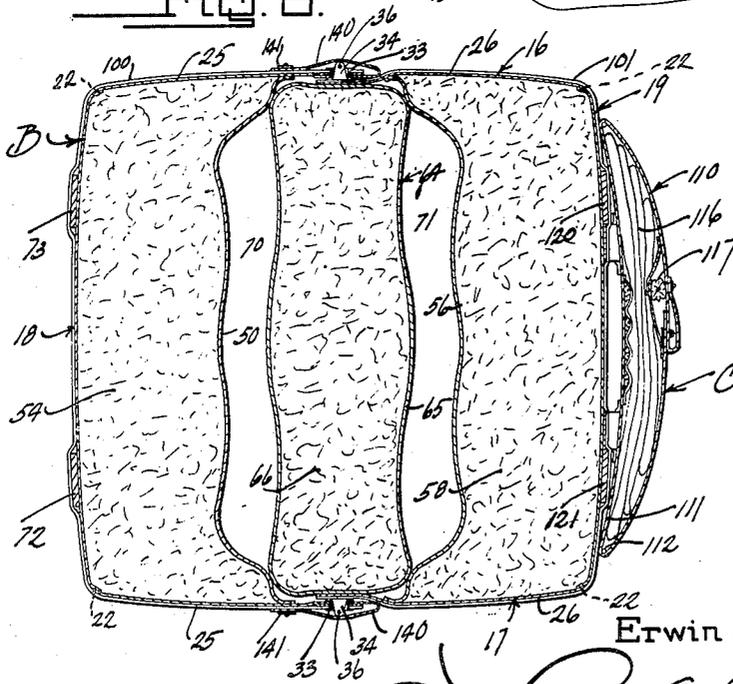


Fig. 6.



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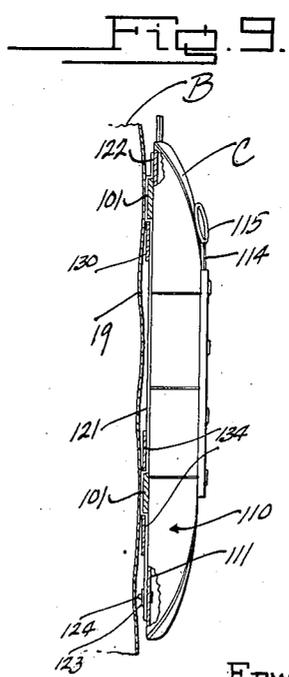
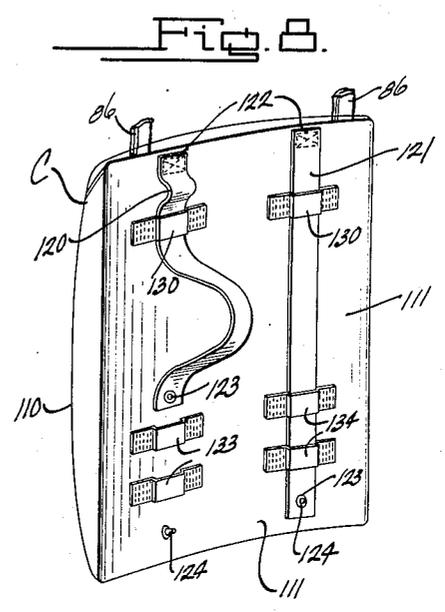
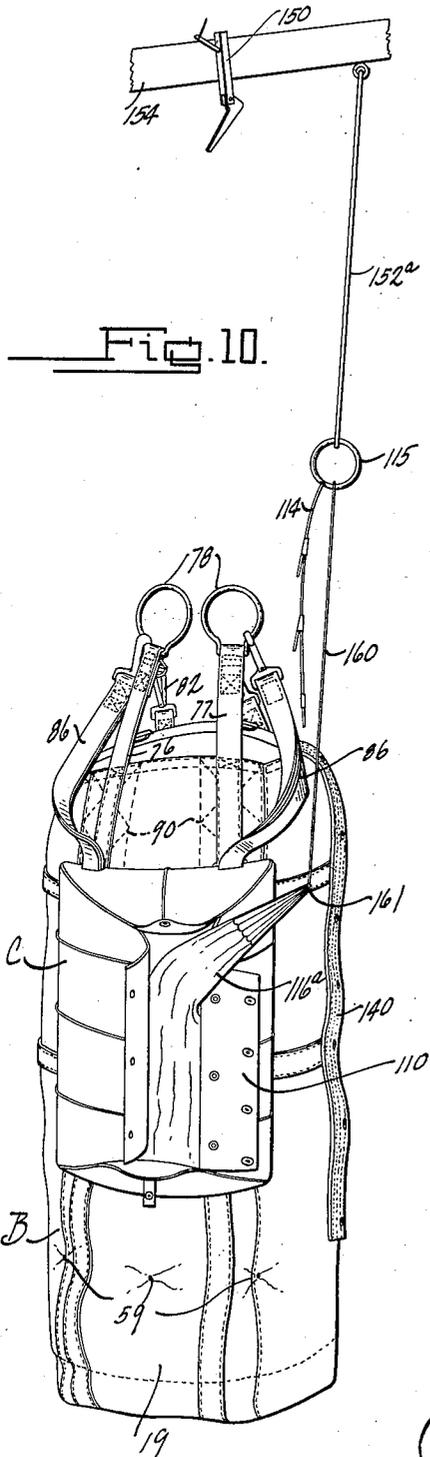
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PARACHUTE APPARATUS

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5 Sheets-Sheet 5



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UNITED STATES PATENT OFFICE

1,944,801

PARACHUTE APPARATUS

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Application November 7, 1929. Serial No. 405,389

31 Claims. (Cl. 244—21)

This invention relates to improvements in parachute apparatus, and has more particular relation to an improved apparatus for the dropping of articles from aircraft which it is desired shall reach the earth expeditiously and with safety.

The primary object of the invention is the provision of an improved container for receiving various articles which it is desired to drop to the earth from aircraft at considerable altitudes; the said container being of a practical, durable, and quickly opened type, of a nature which will permit the article or articles carried therein to be lowered by means of parachute apparatus, with a maximum degree of safety to the articles, and with but little liability of damage to either the articles or the container when the latter engages the earth or other obstruction after a descent.

A further and important object of this invention is the provision of parachute apparatus adapted to drop animate or inanimate articles or objects, other than human beings, which includes a flexible article carrier or container having associated therewith a parachute pack in an operative and practical relation.

A further object of this invention is the provision of improved parachute apparatus including a parachute pack and an article carrier of a flexible padded type adapted to receive therein articles, such as machine guns and the like, in a protected relation.

A further object of this invention is the provision of an improved flexible padded container adapted to be used in connection with a parachute for the dropping of articles from aircraft.

It has been thought desirable to provide apparatus which will enable personnel, machine guns, ammunition, supplies, and so forth, to be expeditiously placed at strategic points, during warfare, beyond the enemy's lines, or at points which might otherwise be inaccessible in time of war. Heretofore there has been provided no practical device which would enable the expeditious dropping of personnel and articles under such circumstances, with safety. It has been heretofore proposed to drop articles by direct attachment to an unfolded parachute, without contemplating the problem incident to the dropping of heavy loads, or other loads in a safe relation, from the aircraft, at the time of release; and without providing sufficient safety factor for the protection of articles at the time of contact after a descent. With the improved container of this invention, in combination with the practical type of parachute apparatus associated therewith, means has been provided for the effective dropping of any char-

acter of article, with safety, and with dispatch, and in a manner which will enable direct access to the article within a very short period of time after landing.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the drawings, wherein similar reference characters designate corresponding parts throughout the several views,

Figure 1 is a plan view of the improved article dropping parachute apparatus, showing the supporting straps of the container detached at the top of the container to enable a better showing of the rip cord release construction of the container.

Figure 2 is a side elevation of the article container with the parachute pack removed therefrom, and with the suspension straps of the container relatively detached at the top of the container.

Figure 3 is a view of the container similar to Figure 2, but with the parachute pack attached to the container, and with a guard flap for one of the rip cords at a side of the container swung back to expose the details of the releasable fastening means.

Figure 4 is a perspective view showing the relation in which the parachute apparatus, including the article container and pack, may be supported upon a suitable release upon the aircraft, just prior to tripping of the release for launching the apparatus.

Figure 5 is a perspective view showing the container open and the articles therein, which have been safely dropped by the container, exposed and ready for detachment from the container; the container in the present instance being a machine gun bag which has lowered machine gun parts with safety.

Figure 6 is a transverse sectional view taken through the apparatus, showing details of the article container and parachute and pack associated therewith.

Figure 7 is a vertical sectional view taken through the container or article carrier, in its folded condition, with the parachute pack detached therefrom.

Figure 8 is a perspective view showing the parachute pack, and more particularly means for detachably connecting the same to the article carrier or container.

Figure 9 is a view taken through a portion of the padded container or article carrier and showing more particularly the detachable fas-

tening connection for the mounting of the pack thereon.

Figure 10 is a perspective view of a modified form of the invention, under circumstances where the apparatus is adapted to be launched as an "attaching type", in contradistinction to the launching of the apparatus of Figure 4, which includes a parachute pack having a pilot parachute.

In the drawings, wherein for the purpose of illustration are shown several forms of the invention, the letter A may generally designate the apparatus, which may include the improved container B having a parachute pack C detachably and operatively associated therewith.

The shape and formation of the container may vary considerably according to the character of the article or articles which it is adapted to receive. As a general characteristic, the container is made of flexible material, internally padded to provide one or more compartments in which the article or articles may be received; the padding preferably being of material having a specific gravity lower than water, preferably kapok, since it is conceivable that by accident or premeditation, the carrier may be dropped upon a body of water. More specifically, in the present instance, the carrier is of a type which may be quickly opened, and it is longitudinally split at its upper portion, and provided with releasable fastening devices which will enable the expeditious opening of the container to quickly expose the contents thereof. The lower portion of the container may remain intact, when the container is open, as a support for the articles which it is adapted to hold. In the illustration, the container B is more particularly adapted for the reception of machine guns or like articles. It is of elongated formation, and may be cylindrical, although due to the arrangement of padding and the panel formation thereof, the container has a substantially rectangular cross section. As more particularly shown in Figures 6 and 7 of the drawings, the container may include a bottom wall 15, side walls 16 and 17, other side or opposed walls 18 and 19, and a top wall 20. The walls as formed are preferably of canvas, water-proofed if desired, although the walls may be made of other flexible material if desired, preferably woven textile. The walls 16 to 19 inclusive may be formed of separate panels, if desired, longitudinally stitched together at the corners thereof, as indicated at 22 in various figures of the drawings. Similarly the bottom wall 15 may be made of a similar panel, stitched or otherwise secured, as shown at 23 in Figure 7 of the drawings to the lower ends of the side wall pane's 16 to 19 inclusive.

A short distance above the bottom wall 15, preferably about one-fourth the height of the container B, the side walls 16 and 17 are longitudinally split up to and across the top wall 20, thus dividing the upper portion of the container B into complementary sections shown in their open relation in Figure 5 of the drawings. The walls 16 and 17 are split in a plane about midway between the walls 18 and 19, so that the walls 16 and 17, as shown in Figure 6 of the drawings, comprise a flap section 25, and a flap section 26, the former being connected with the wall 18 and the latter with the wall 19. The top wall 20 is of course divided into complementary sections 30 and 31, respectively connected with the walls 18 and 19 by stitching thereto; the flap sections 30 and 31 having fastening means at their

overlapping edges for connecting them together in providing the wall 20. Along their free edges the flap portions 25 and 30 of the side and top walls 16, 17 and 20 are provided with eyelets or grommets 33, adapted to receive therethrough the projections or studs 34 which are secured along the outer surfaces of the margins of the flaps 26 and 31. The said margins in which the complementary fastening parts 33 and 34 are positioned may be reinforced by webbing. It is to be noted from Figure 3 of the drawings that there are five fastening points on the side wall 17, and similarly on the opposite side wall 16 there are also five fastening points. The top wall, as shown in Figure 1, has three fastening points.

The studs 34 are each provided with transverse openings 36 therethrough, on the ends which project beyond the eyelets 33 when they are received therein. These openings 36 are adapted to receive the detent or retaining pins 40 of rip cords 41 and 42, shown more particularly in Figures 1 and 3 of the drawings. There are two rip cords provided for instantly opening the bag or container for exposing the contents, although one or more rip cords may be provided if so desired. The rip cord 41, as shown in Figure 1, has a handle 43 releasably seated in a pocket 44 on the top wall 20 of the container, closer to the wall 16 than the opposite wall 17; the rip cord body 45 extending from the handle 43, and the same being of the flexible type ordinarily used for the rip cords of parachutes, and having retaining pins 40 therein of a number to secure two of the fastening devices of the top wall 20, and the five fastening devices along the wall 17, as shown in Figure 3 of the drawings. The other rip cord 42 has a handle 43^a detachably housed in an expansible pocket or retainer 44^a on the top wall 20, closer to the wall 17 than the wall 16; the said rip cord 42 including a cord body 45^a extending along the top wall 20 and down along the side wall 16, and having pin extensions 40 thereon in number sufficient to take care of the fastening device on the top wall closer to the wall 16, and the five fastening devices which it is intended to provide along the wall 16. It is of course apparent to those skilled in this art that the retaining pins 40 are releasably extended through the openings 36 of the fastening studs 34 to hold the eyelets 33 in place, and attach the overlapping portions of the flaps of the side and top walls together, for maintaining the container in a closed condition. The pockets 44 and 44^a have mouths which are contracted by elastics to hold the handles or rip cord rings 42 and 43 in position on the top wall 20. To open the sack or container it is merely necessary for the operator to grasp the handle 43, or 43^a, as the case may be, and pull it from its respective pocket. By pulling the handle of the rip cord 41 or 42, as the case may be, in a direction opposite to the rip cord body, the pins 40 will be released from the studs 34 of the fastening devices with which it respectively cooperates, and permit the eyelets 33 of those studs to slip off the studs 34, which are of cone-shape, to facilitate detachment.

The container, upon release of both rip cords 41 and 42 readily falls apart, at its upper portion, into substantially the position shown in Figure 5, for exposing and rendering accessible the contents thereof.

The walls of the container are padded. Spaced from the wall 18 and secured at its longitudinal margins to the inner surfaces adjacent the free

edges of the flaps 25 of the walls 16 and 17 there is provided flexible lining material 50, shown in Figures 6 and 7 of the drawings, which at its lower margin is secured at 51 near the base of the wall 18, and at its upper margin is secured at 52 near the juncture where the top wall 30 is stitched with the wall 18. In the pocket provided between the wall 18 and the flap portion 25 is disposed filling material 54, preferably of a buoyant nature, such as kapok. The lining 50 is drawn into shape with the wall 18 and the wall portion 25 by tufts 55. Similarly, a flexible liner 56 is secured along its longitudinal margins to the inner surfaces adjacent the free edges of the flap portions 26 of the side walls 16 and 17, and at its lower and upper margins being secured to the bottom wall and top wall flaps 31 respectively, in the position shown in Figure 7, to provide a pocket between the liner 56 and wall 19, wherein buoyant filling material 58 is provided, which will float upon water, the same preferably being kapok. The filling material 58 is drawn into shape by tufting designated at 59, for compressing and form-shaping the filling material.

In the example shown, a bottom pillow or pad 60 is provided, comprising a flexible cover 61, having some buoyant material 62 stuffed therein, such as kapok; the pillow covering the inside of the bottom 15, and at its ends being supported into a compressed engagement beneath the padding of the side walls 18 and 19, as shown in Figure 7. Diametrically across the pillow or pad 60 there is provided an intermediate partition pad 64, between the walls 18 and 19, which includes an enclosing flexible cover 65 having some buoyant padding material, such as kapok 66, placed therein. This partition pad 64 extends vertically between the padded walls 18 and 19, the lower end thereof being secured as by stitching 67 with the pad 60, and the upper end terminating at the top wall 20, where a top pillow 68, similar to the pillow 60 above described, is provided, the pillow 68 fitting compactly into a compressible relation into the top of the container beneath the top wall 20, and at its margins forced into a compact relation against the padding of the side walls 18 and 19, and against the top of the padded partition wall 64, as is shown in Figure 7 of the drawings. This provides padded chambers or compartments 70 and 71 at opposite sides of the padded partition wall 64, which may receive therein any type of articles desired, such as the machine gun parts 74 shown in Figure 5 of the drawings.

In view of the nature of abuse to which the container is or may be subjected, and to provide a reinforced support therefor, flexible webbing or other reinforcement is provided, comprising substantially U-shaped slings 72 and 73, each of which are stitched longitudinally along opposite side margins of the wall 19; extended in a stitched and secured relation beneath the bottom wall 15; and extended in a stitched and secured relation longitudinally along the walls 18 and 19, providing a pair of U-shaped slings whose ends extend upwardly in a detachable relation above the top wall 20. This webbing is of the type ordinarily used for the harness of parachute apparel, and comprises cross woven textile. At the wall 19 the ends of the webbing pieces 72 and 73 are provided with loose straps 76 and 77 respectively, as shown in Figures 1 and 4, and elsewhere, each of which at the free end thereof is provided with a main suspension ring

78, and smaller connecting ring 79. The webbing portions 72 and 73 extending along the wall 18 project at the top of said wall in loose straps 80 and 81 respectively, shown in Figures 1 and 4, each of which at the free end is provided with a conventional or special snap fastener 82, preferably spring operated, for snapping on to the companion smaller ring 79 of the other strap end of its respective sling 72 or 73. This enables the strap ends 76 and 80 of the sling 72 to be brought into a releasable connection across the top wall 20 of the container, and also the strap ends 77 and 81 of the sling 73 to be brought into a releasable connection across the top wall 20. The lift rings 78 are adapted to receive thereupon the detachable snap fasteners 85 of the suspension lines 86 of the main parachute contained in the pack C, as will be further mentioned. It should be noted that the walls 18 and 19, at the tops thereof, to which the reinforcements 72 and 73 are stitched, is additionally reinforced by stitching shown at 90 in Figures 4 and 10 of the drawings, to prevent tear of the fabric.

Circumferential reinforcement is provided, particularly about the upper portion of the container B, and which reinforcement consists, at spaced intervals, of complementary webbing pieces 100 and 101, the former extending in a stitched relation exteriorly about the wall 18 and the flap portions 25, and the latter extending in a stitched relation exteriorly about the wall 19 and the flaps 26. The ends of the webbing sections 100 have the grommets or eyelets 33 secured thereto, while the studs 34 are secured to the ends of the webbing pieces 101. Thus, when the fastener devices, comprised of the parts 33 and 34 are held together, circumferential reinforcing webbing is provided entirely about the container, at as many spaced annular locations as desired. Only two of such annular reinforcing bands are shown in the drawings, but more may be provided if found necessary.

The parachute pack C is detachable, and it is preferably form-fitting, of the nature set forth in U. S. Patent No. 1,882,086. Among other things, it consists of a flexible container 110, which in accordance with standard construction, may be folded substantially flat, and which includes a pocketed body portion 111 having a wire frame 112 holding the same semi-rigid; the frame 112 being bent to the shape of the wall of the container on which positioned, as is shown in Figure 6. The flaps of the container 110 are releasably connected in the usual manner, more particularly as set forth in U. S. Patent #1,554,192, by means of fastening devices controlled by an ordinary rip cord 114, having a rip cord handle or ring or coupling 115 secured therewith. The parachute apparatus in the pack container 110 may include a main parachute 116, shown in Figure 6, to which a pilot parachute 117 is operatively connected at the peak thereof, in the usual relation. Both the main and pilot parachutes, in accordance with standard construction, are packed in the pack container 110, from which they are released upon pulling the rip cord 114. The shroud lines of the main parachute are of course connected to the suspension straps 86 in the usual relation, and the latter are detachably connected with the lift rings 78 as above described, and shown in the various figures of the drawings. The pack C is connected in a novel manner with the bag or article container or carrier B.

Referring to the attachment of the pack in a compacted, shallow, and form-fitting relation upon the exterior of the bag or container B, the exterior surface of the back or body wall 111 of the pack C is provided with a pair of attaching straps 120 and 121, secured at their upper ends 122 near the top of the pack body 111; the said straps otherwise being detachable with respect to the back body 111, and at their free ends having fastener parts 123 adapted to cooperate with complementary fastener parts 124 secured exteriorly upon the back 111 near the lower end thereof; the fasteners 123 and 124 being of the type known as "lift-the-dot". The straps 120 and 121 are threaded through suitable loops 130 near the upper connected ends 122 thereof, and spaced therefrom. Further towards their detachable ends, the straps 120 and 121 are adapted to be threaded through pairs of relatively spaced loops 133 and 134 respectively.

As to the application of the pack upon the bag B, the harness webbing sections 101, while stitched exteriorly upon the walls of the bag B, each have two places where such stitching does not extend about the webbing 101, leaving loops through which the detachable straps 120 and 121 are threaded, as shown in Figures 6 and 9 of the drawings. The pack C is so positioned that the straps 120 and 121 thread through the loops of the webbing 101 between the straps 130 and the attached ends 122, as shown in Figure 9 of the drawings, and the said straps 120 and 121 thread through the lower webbing 131 of the container B, at a location between the pairs of straps 133 and 134, as is shown in Figure 9. This holds the pack C exteriorly upon the wall 19 of the bag or container B, in a rather out of the way position, where the same, whether open or closed, will not interfere with the quick opening or closing of the article carrier bag or container B, as is readily apparent. Of course, to detach the pack C it is merely necessary to release the "lift-the-dot" fasteners of the straps 120 and 121, and pull the latter into a released connection through the loops provided in the webbing 101.

As a protection for the fastener devices and rip cords of the bag B, flexible guard flaps 140 may be provided along the free edges of the flap portions 26 of the walls 16 and 17, which detachably fold over the fastener devices and the rip cord, having detachable fastener parts 141 along the free edges thereof which snap with complementary fastener portions 142 arranged along the flap portions 25; the fastener portions 141 and 142 being of the "lift-the-dot" type. Pulling of the rip cords of the bag B is not interfered with by the guard flaps 140, nor do such guard flaps interfere with the opening of the upper sections of the bag or container B upon release of the fastener parts by their respective rip cords.

In the preferred manner of dropping the parachute apparatus, with the container properly assembled and the pack C mounted thereon, the lift rings 78 are detachably connected with a suitable trip 150. The apparatus may be supported upon a suitable releasing rack upon the aircraft, such as the bomb bay or rack now in use, and upon release of the trip 150, the rings 78 will be released and the apparatus will drop free of the aircraft. The rip cord ring 114 of the parachute pack is connected by a cord 152, with some part 154 of the aircraft, as shown in Figure 4, and of course after the trip 150 has released the bag B and the latter has dropped to a certain distance, the cord 150 will be

stretched taut, pulling the rip cord 114 of the parachute pack C. The latter will open substantially in accordance with standard parachute apparatus, such as set forth in U. S. Patents 1,340,423, 1,403,934, 1,462,456, and 1,554,192, releasing the pilot parachute 117 in event one is used, which of course functions to pull the main parachute 116 into position. The main parachute is thus launched properly and the suspension straps 86 extended for vertically supporting the container B by reason of their coupling with the lift rings 78.

In event it is not desired to use a pilot parachute, so as to quickly launch the main parachute, as when used for low altitudes, and under other conditions, the rip cord ring 115, as shown in Figure 10 of the drawings, is also connected to a break cord 160, which is adapted to break when a strain of 100 pounds, more or less, is placed thereon, the cord 160 being substantially longer than the rip cord 114 of the parachute pack C, and at its end opposite the ring 115 being connected to the peak 161 of the main parachute 116^a, shown issuing from the pack C in Figure 10 of the drawings. Of course, when the trip 150 is released as shown in Figure 10 the container B and pack C therewith will drop; the rip cord 114 being pulled loose and throwing the container of the pack C open. The break cord 160 will pull the main parachute 116^a straight, and when the main parachute and its shroud lines have been stretched taut, so that the load in the container B is placed on the break cord 160, the latter will rupture, and of course the apparatus will descend properly.

With the improved apparatus I have safely dropped, during experimental tests, such articles, as water, ham, eggs, rice, flour, and other edible provisions. Also pistols, belts, ammunition, cigars, cigarettes, and the like. One of the most important tests which has frequently been made under my supervision has been a maneuver which consists of the dropping of machine gun crews and guns. The men were dropped from two units of three ships each, flying in V-formation, about 150 yards apart, at altitudes of 1500 feet. The usual apparatus was used for dropping the men. The guns were dropped in the improved apparatus at altitudes of about 400 feet after landing of the crew. The various crews usually have their guns in action thirty seconds after they have landed and secured the container. Features of the improved apparatus may be used for dropping a wide variety of articles, other than those above mentioned, as can readily be appreciated.

While I have herein described the principle of operation of my invention, together with the apparatus which I now consider to represent a good operative embodiment thereof, I desire to have it understood that the apparatus shown is only illustrative, and that the invention can be carried out by other means. For instance, the padding of the container may be re-arranged to suit the shape and characteristics of the articles being dropped, and the opening of the container may be accomplished in a manner other than that above described. While the invention as shown is intended to use the various features and elements in the combination as described, it is to be understood that some of them may be altered and others omitted without departing from the scope of the invention.

I claim:

1. As an article of manufacture a container to 150

be used in dropping of material and the like by means of parachutes from aircraft including complementary padded closure parts, and rip cord means for releasably fastening said parts in an enclosing container form.

2. In apparatus for dropping articles by means of parachutes, the combination of a flexible container having an interiorly padded chamber and releasable means to completely enclose the same, reinforcement webbing secured exteriorly about the container having suspension means extending therefrom, and parachute apparatus for the container having a connection with said suspension means.

3. In apparatus for the dropping of articles and other objects from aircraft and the like, the combination of a flexible container having releasable means to completely enclose the same, reinforcement webbing secured thereabout beneath the container and along the opposite sides of the container, and parachute apparatus releasably packed upon the container and having a suspension connection with the upper ends of said webbing.

4. In parachute apparatus of the class described an article carrier casing, means to open and close the casing at the top for placement and removal of articles with respect to the casing, a parachute pack including a container, means exteriorly connecting the container of the parachute pack against a side wall of the carrier, a parachute compacted in the pack, means for releasing the parachute from the pack container, and suspension means extending from the parachute within the pack and having connection with said carrier casing.

5. In parachute apparatus of the class described an article carrier of flexible material having a compartment for receiving articles, flexible reinforcement webbing exteriorly attached upon the carrier having flexible portions thereof provided with transverse loops, a parachute pack including a container, and flexible fastening straps on the container of the parachute pack detachably connecting the pack through the loops of the webbing to said carrier.

6. In a parachute pack construction the combination of a container including a body portion provided with a plurality of attaching straps each having an end connected fixedly on the pack container, and an opposite detachable end with a releasable connection upon the container body, and loops secured upon the container body through which each of the straps are releasably threaded.

7. In a container for dropping articles by parachutes the combination of an article container including complementary closure portions, said portions having fastening devices thereon, one of the portions having studs with transverse openings and the other portion having eyelets through which the studs are to be received so that the transverse openings of the studs extend beyond the eyelets, and a rip cord including pins for extension through the transverse openings of the studs to hold the fastener parts of the closure portions in a releasably secured relation to maintain the container closure parts relatively shut.

8. In an article carrier for parachute apparatus of the class described the combination of a container, means to open the same, the interior walls of the container being padded, and a padded partition in the container sub-dividing the same therein into compartments.

9. In a carrier casing for dropping of articles with safety by means of parachutes the combina-

tion of a casing of flexible material, means to open the casing, the casing being interiorly lined with padding, and a padded partition in the container.

10. In a container for the dropping of articles by means of parachutes the combination of a flexible casing of an elongated nature, padded walls interiorly of the container, a padded bottom, a padded top, and a padded partition within the container.

11. In a container for dropping of articles by means of parachutes the combination of a flexible container divided into complementary parts of about equal size, and rip cord means for releasably holding the flexible container parts in article enclosing form.

12. In a container for dropping of articles by means of parachutes the combination of a split flexible container, rip cord means for releasably holding the split flexible container in article enclosing form, and a parachute pack releasably connected exteriorly upon the container and having a suspension connection with the container.

13. In a container for dropping of articles by means of parachutes the combination of a split flexible container, rip cord means for releasably holding the split flexible container in article enclosing form, a parachute pack releasably connected exteriorly upon the container and having a suspension connection with the container, said container being interiorly padded for protection of articles received therein.

14. In a container of the class described the combination of an elongated flexible casing being split from the top thereof down along the sides, complementary fastening parts disposed on the container along the margins of the split at the top and sides, and rip cord means for releasably connecting the fastening parts together along the top and sides of the container in an enclosing relation.

15. In a container of the class described the combination of an elongated flexible casing being split from the top thereof down along the sides, complementary fastening parts disposed on the container along the margins of the split at the top and sides, rip cord means for releasably connecting the fastening parts together along the top and sides of the container in an enclosing relation, the rip cord means including a pair of rip cords, the ends of which are mounted in an easily accessible relation on top of the container with the bodies of the rip cords extending in a connecting relation with said fastener parts along the top and down along opposite sides of the container.

16. In a container of the class described the combination of a flexible padded container comprising a pair of complementary relatively split parts, a padded partition mounted in the container in the plane of the split of said parts, and releasable fastening means including fastener parts complementarily arranged upon the container parts and a rip cord for releasably maintaining the fastener parts connected.

17. In an article carrier of the class described the combination of a flexible container split to provide an opening therealong, complementary fastener parts on the container at the facing sides of said split, and reinforcement webbing exteriorly about the container, the ends of which are secured to said fastener parts.

18. In an article carrier of the class described an elongated container split substantially diametrically from the top downwardly along the

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sides thereof, releasable fastening devices for holding the container together, reinforcement webbing extending laterally and longitudinally exteriorly upon said container, and parachute suspension couplings connected with said webbing.

19. In an article carrier of the class described an elongated container split substantially diametrically from the top downwardly along the sides thereof, releasable fastening devices for holding the container together, reinforcement webbing extending laterally and longitudinally exteriorly upon said container, and parachute suspension couplings connected with said webbing at the top of said container.

20. In apparatus of the class described a container having closure parts opening at the top and sides thereof with releasable fastening means, suspension straps connected to the container at opposite sides of the opening therein, means to snap said suspension straps together, and a parachute having a releasable suspension connection with said straps.

21. In an apparatus of the class described the combination of a carrier having an opening for access thereto, releasable fastening devices for closing said opening, suspension means connected with the carrier at opposite sides of the opening, a coupling for connecting said suspension means together substantially directly at said opening, and parachute apparatus associated with the carrier having a suspension connection with said coupling.

22. In parachute apparatus the combination with an aircraft, of a load, a parachute pack attached to the load including a container and a parachute compacted therein, a removable rip cord for opening the container, means connecting the rip cord with the aircraft for automatically pulling the rip cord free of the container upon release of the load from the aircraft, and a break cord connected with the peak of the parachute within the pack and extending directly therefrom exteriorly of the pack with a connection with the aircraft, the break cord bearing such relation to the rip cord and means which connects the rip cord with the aircraft that the rip cord will be removed for opening the container prior to the time that the break cord is extended for pulling the peak of the parachute from the pack.

23. In apparatus for dropping of articles from aircraft the combination of a container, means to open the container for access to articles therein, suspension rings connected with the container, a parachute pack exteriorly mounted on the container including a parachute compacted therein and suspension straps connected with the parachute and extending exteriorly of the pack, means for releasably connecting the suspension straps with the suspension rings of the container, and release means for connecting the suspension rings upon an aircraft.

24. In apparatus for dropping of articles from aircraft the combination of a container, means to open the container for access to articles therein, suspension rings connected with the container, a parachute pack exteriorly mounted on the container including a parachute compacted therein and suspension straps connected with the parachute and extending exteriorly of the pack, means for releasably connecting the suspension straps with the suspension rings of the container, release means for connecting the suspension rings upon an aircraft, said parachute pack including a

rip cord, and means connecting the rip cord with the aircraft to automatically open the pack upon release of the container from the aircraft.

25. In apparatus for dropping articles by means of parachutes the combination of a carrier casing having closure means therefor, a sling-like support securely connected with the casing and extending therebeneath and along the sides thereof and having attaching means at the upper ends thereof, a parachute pack attached to the casing having parachute suspension means extending therefrom and connected with said attaching means of the sling.

26. In parachute apparatus of the class described the combination of an article carrying casing having closure means therefor, said casing being of flexible material, flexible suspension slings of U-shaped formation fixedly attached to said casing and extending beneath the casing and along opposite sides thereof and at the upper ends thereof having attaching means at opposite sides of the casing, and a parachute pack secured to the casing and having parachute suspension straps extending therefrom and attached to said attaching means.

27. In a parachute pack construction the combination of a container including a body portion provided with a plurality of attaching straps each having an end connected fixedly on the pack container and an opposite detachable end with releasable connection upon the container body, said body portion adjacent the fixed end of each strap having a loop through which the respective strap is threaded to provide a looped portion of the strap between the fixed end and said loop, the said body portion for each of said straps adjacent to the detachable connection end of the strap having a pair of relatively spaced loops through which the free end of the respective strap is threaded when connected to the body portion at its detachable end.

28. In parachute apparatus for dropping articles and the like from aircraft, the combination of a flexible container, a U-shaped suspension strap forming a sling fixedly connected to said container and having the upper ends thereof looped and extending freely above the container, means to connect said free ends together releasably above the container, and a parachute pack associated with the container and having suspension means for releasable connection with the last mentioned means.

29. In parachute apparatus for dropping of articles and the like from aircraft, the combination of a container, suspension connections upon the container at opposite sides thereof, said suspension connections being flexible and extending freely upwardly and having means to releasably connect the same together above the container, a parachute pack mounted upon a side wall of the container including a releasable parachute having suspension lines flexibly extending from the pack, and means to releasably connect said suspension lines to the means which releasably connects the ends of said suspension connections together.

30. In apparatus for dropping of articles from aircraft, the combination of a container, means to open the container for access thereto, suspension members connected with the container at opposite sides of the opening of the container and embodying means to relatively detachably connect the same together over the opening of the container, a parachute pack exteriorly mounted on the container including a parachute

casing with a parachute compacted therein, and suspension straps connected with the parachute and extending from the pack casing, means for releasably connecting the suspension straps of the parachute with the suspension members of the container, and release means for connecting the suspension members upon an aircraft.

of elongated construction and flexible padding material having an end opening therein, and a parachute pack carried upon a side of the container between its ends including a parachute canopy having operative connection with the container, and rip cord means to insure a lateral release of the canopy from the carrier casing.

31. In apparatus for dropping articles by means of parachutes the combination of a carrier casing

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