

April 12, 1949.

L. P. FRIEDER ET AL

2,467,024

PARACHUTE PACK

Filed Feb. 9, 1946

7 Sheets-Sheet 1

Fig. 1.

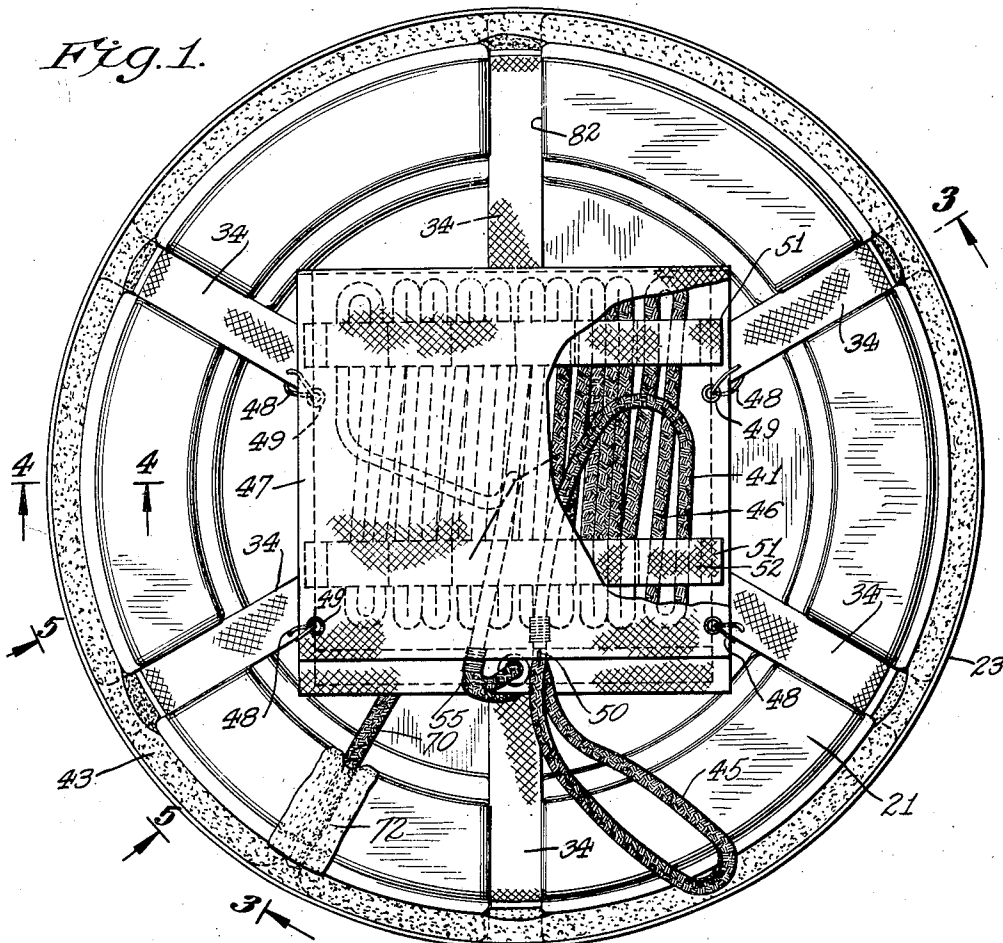
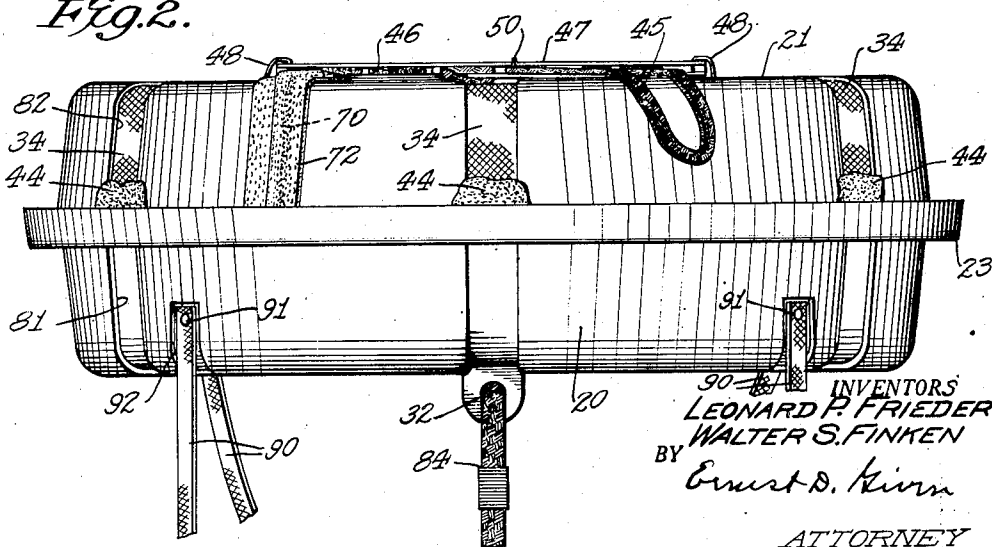


Fig. 2.



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7 Sheets-Sheet 2

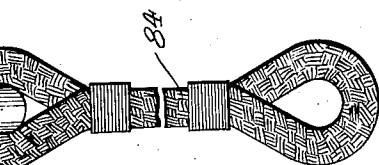
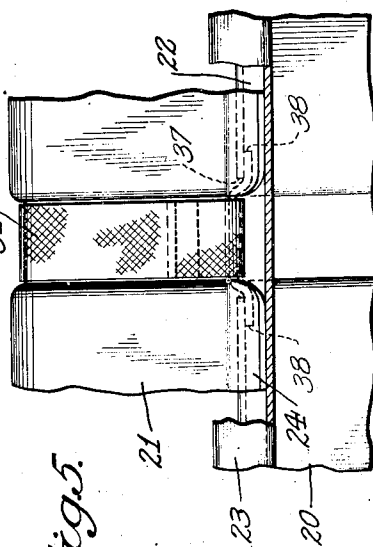
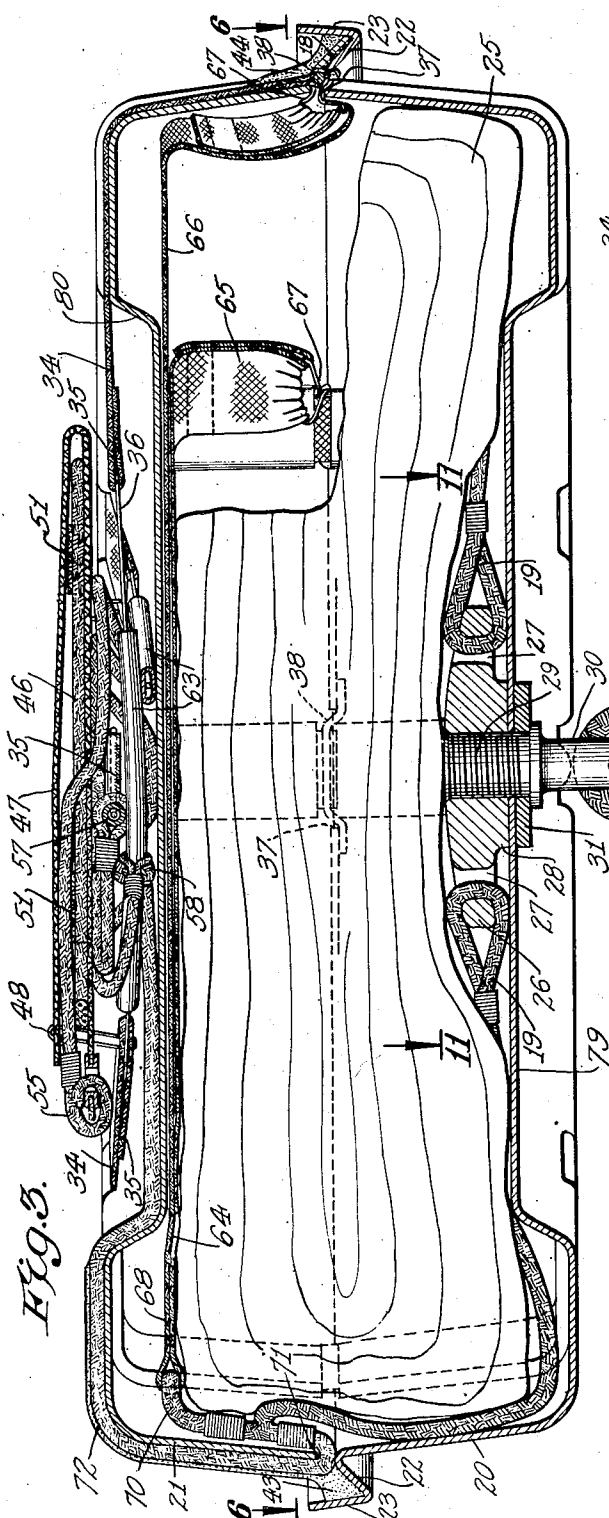


Fig. 4.

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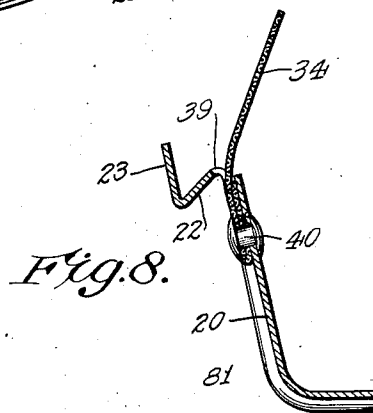
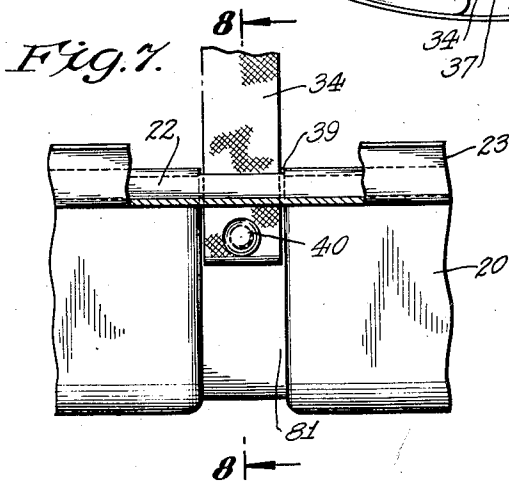
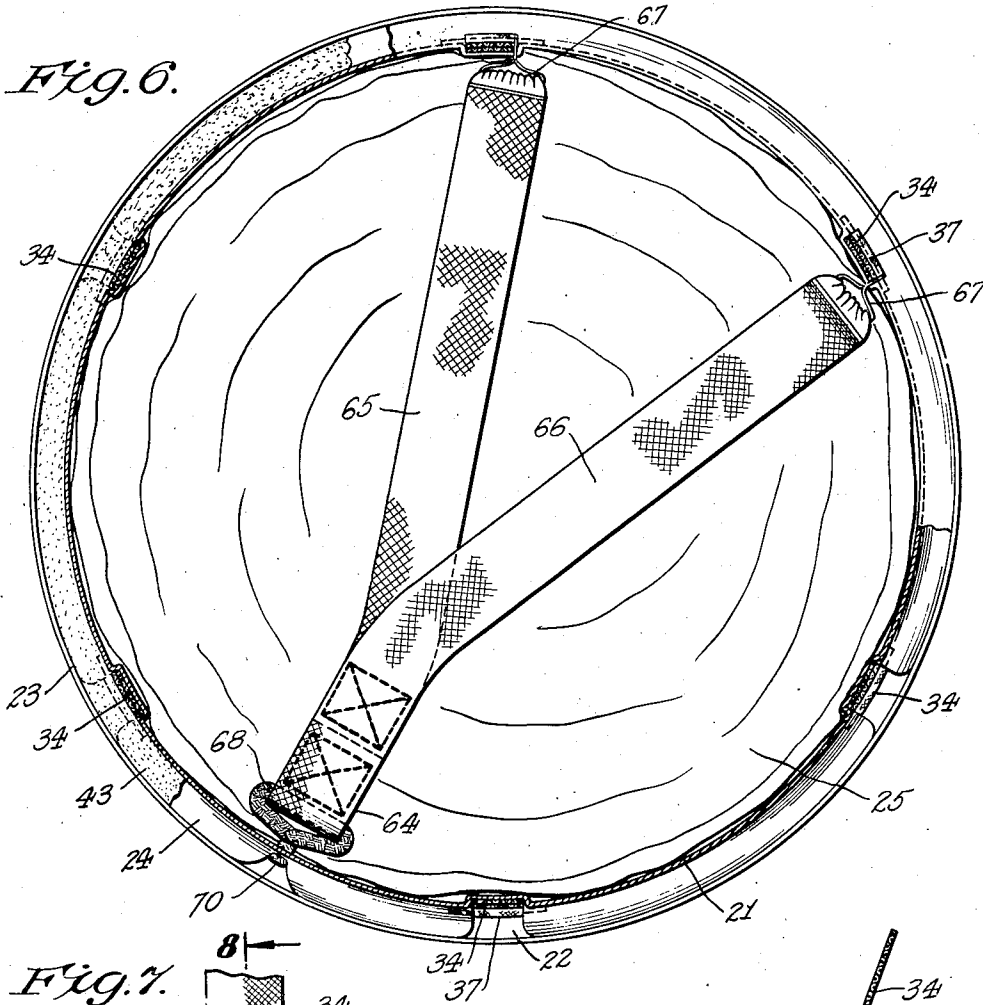
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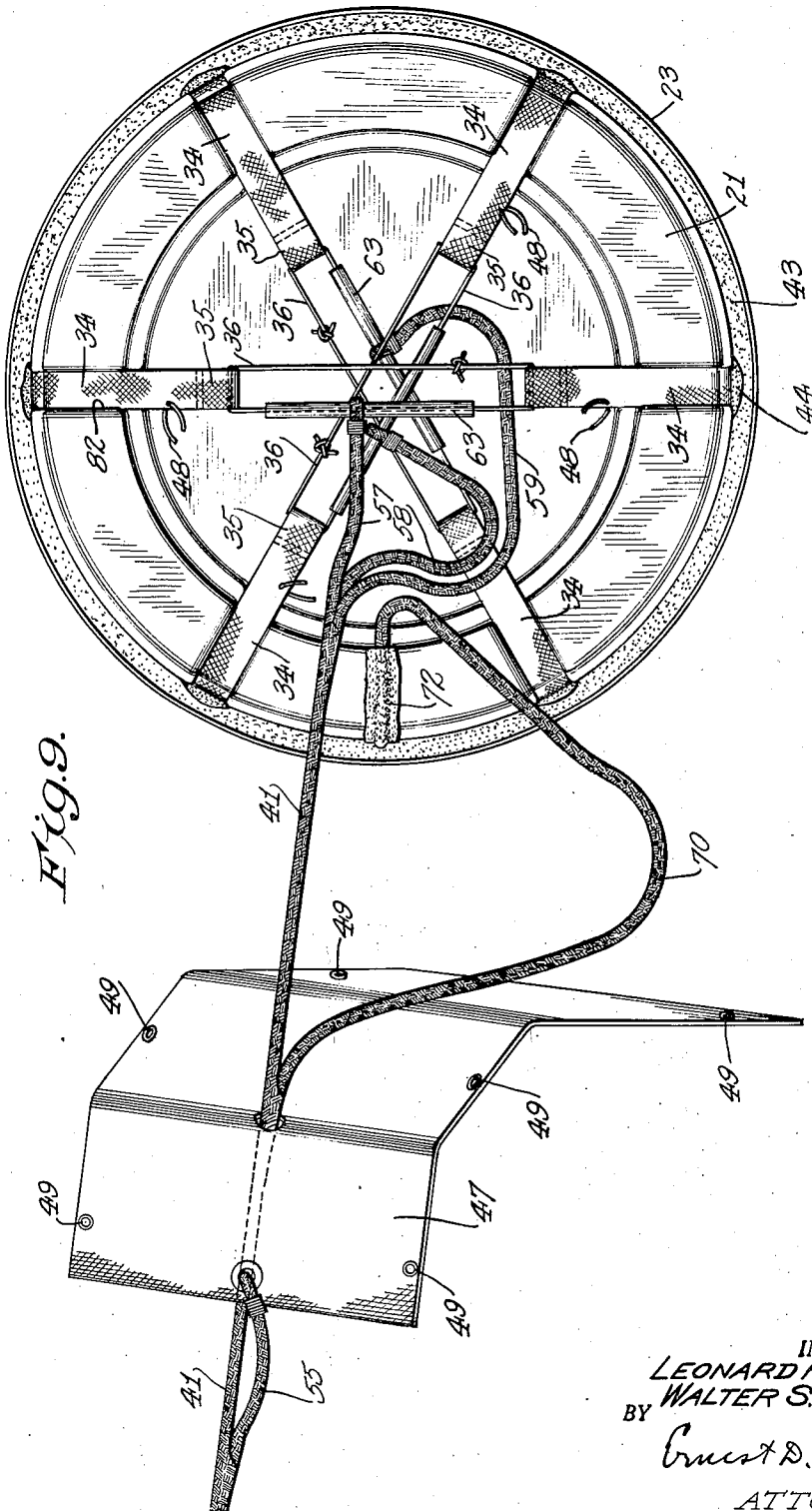
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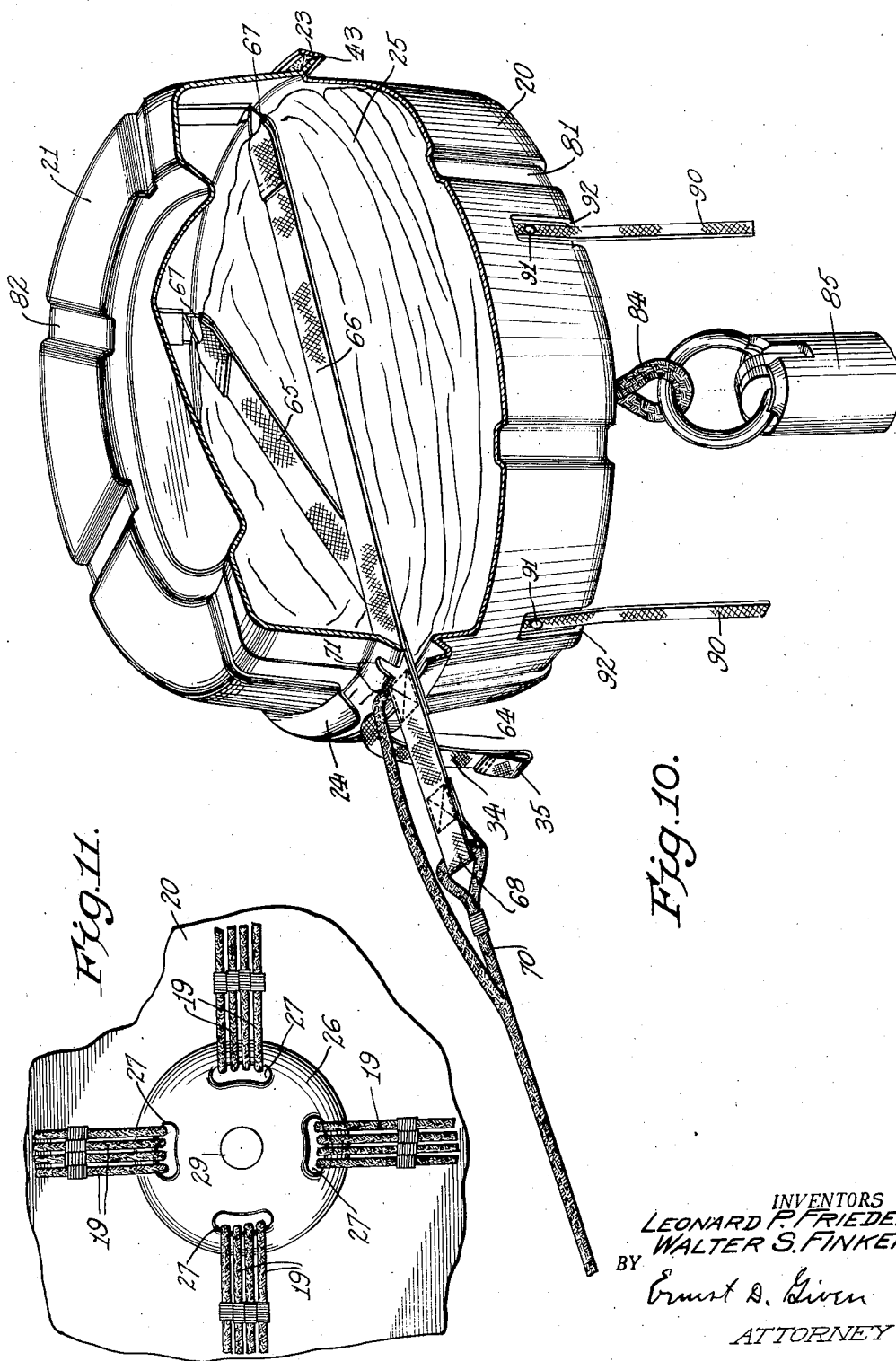


Fig. 10.

Fig. 11.

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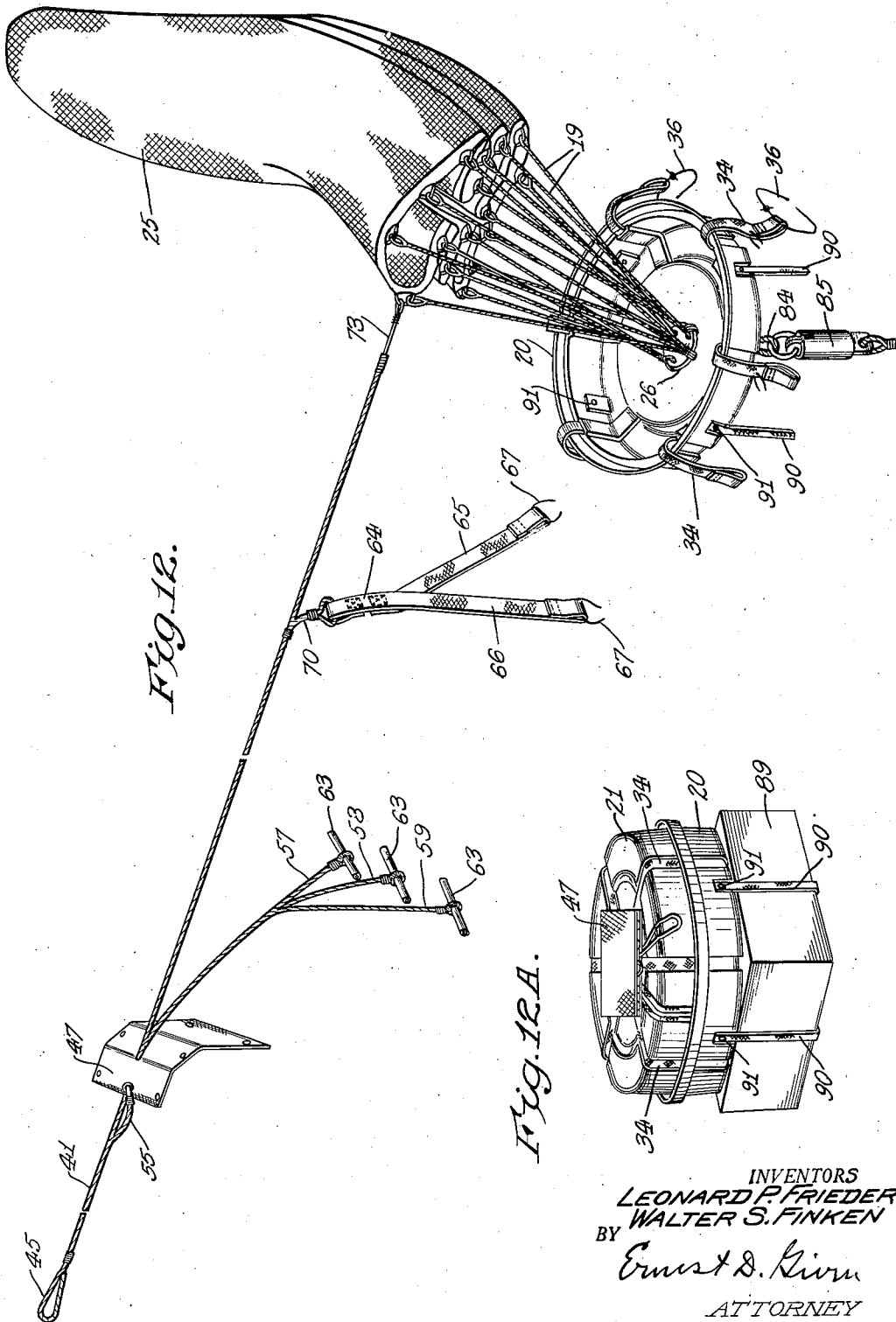
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Fig. 14.

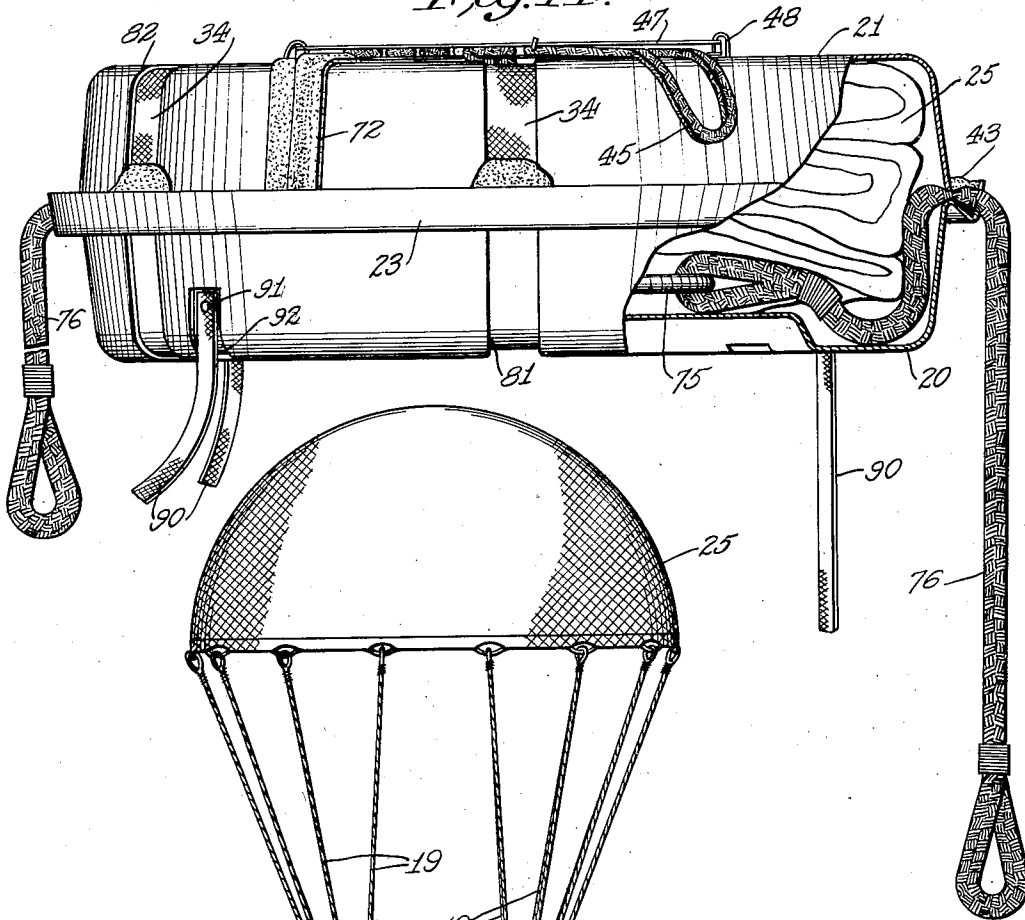
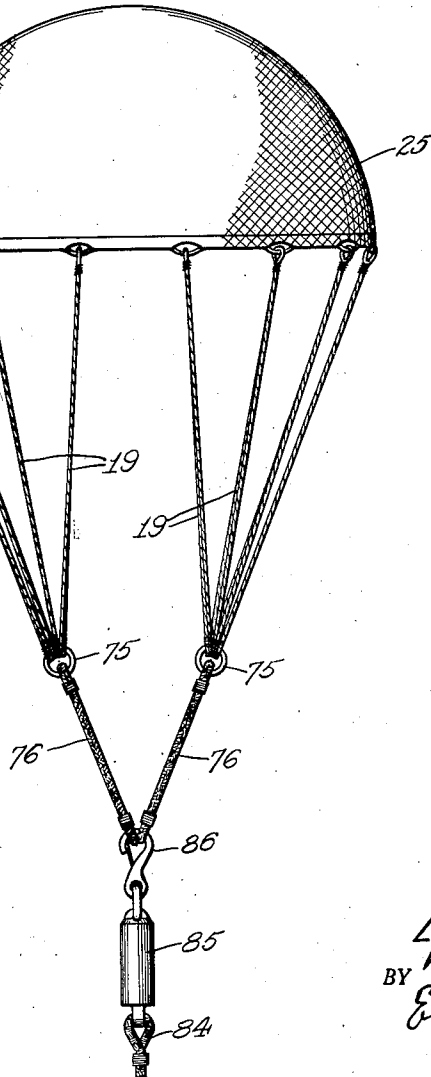


Fig. 13.



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UNITED STATES PATENT OFFICE

2,467,024

PARACHUTE PACK

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Application February 9, 1946, Serial No. 646,668

16 Claims. (Cl. 244—148)

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This invention relates generally to the use of parachutes in dropping loads of various kinds and has particular reference to the use of parachute packs to facilitate the launching of loaded para-

chutes from airplanes and similar vehicles. The main object of the invention is to provide a parachute packed in a casing which may be sealed at all points to exclude moisture, vermin and similar things which might damage the parachute or interfere with its proper operation when released to assume the support of an attached load, together with a construction whereby a single pull on a static line or release cord will open the container and, preferably, draw the parachute out at least far enough to insure its prompt opening when set free.

The casing referred to consists mainly of two parts which are, for convenience, hereinafter usually referred to as the container and the cover. The container and the cover are so constructed at their cooperating portions as to insure a close fit. In the preferred arrangement of parts the cover is normally held on the container by a plurality of straps or the like which are tightly drawn over the cover and held under tension by a plurality of rupturable or releasable connections. Branches on the static line or release cord are so constructed and connected to the rupturable or releasable connections that said connections are ruptured or released in a sequence. This is an important feature of the invention as the work of releasing the cover is distributed in such a way as to make the release much more certain than if it had to be effected by actuating or breaking a single release.

After the cover is fastened down as just mentioned, it is sealed by applying a frangible or rupturable material over the juncture between the cover edge and the container. Under the cover is a member which is operable to break the seal and remove the cover. This member is connected to another branch of the static line or release cord in such a way that it is actuated to perform its functions after the connections between the cover holding straps are broken or released.

An important advantage of the invention is that the whole unit is very compact so that a number of them may be conveniently stacked or piled in an airplane ready for use as required. When it is desired to drop a load the load is attached to means extending outward from the casing and connected inside of the casing to the parachute. Preferably the release cord or static line is connected at its innermost end to the hem of the parachute canopy. When it is desired to

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use the unit to drop a load the free end of the static line or release cord is attached or connected to the airplane in any suitable way and the casing and the attached load thrown or released into the air stream. The resulting pull on the static line will strip off the casing and place the load directly under the control of the parachute. The invention contemplates the use of packed parachutes of various sizes depending upon the weights of the loads. The casing may be marked to indicate the loads which the contained parachutes are adapted to lower to the best advantage. This is a check to insure against overloading or using an unnecessarily large parachute for the particular load, thereby contributing to accurate timing in dropping and minimizing possible damage to the load.

The invention is hereinafter described in detail with suitable references to the accompanying drawings illustrating and forming a part of the description, the novel features of the invention being pointed out in the claims appended hereto.

In said drawings:

Fig. 1 is a top plan view of an assembled unit constructed according to the invention;

Fig. 2 is a side view of the unit shown in Fig. 1;

Fig. 3 is a section along the line 3—3 of Fig. 1;

Fig. 4 is a section along the line 4—4 of Fig. 1;

Fig. 5 is a view, partly broken away, along the line 5—5 of Fig. 1, and illustrates one way of securing the ends of the cover holding straps to the container;

Fig. 6 illustrates the device within the casing which breaks the seal and removes the cover through a connection to the static line;

Fig. 7 illustrates another way of securing the ends of the cover holding straps to the container;

Fig. 8 is a section along the line 8—8 of Fig. 7;

Fig. 9 is a top plan view of the construction whereby the sequence of operations or steps in releasing and removing the cover is performed by a single continuous pull on the release cord;

Fig. 10 illustrates, among other things, the operation of the seal breaking and cover removing means by the pull on the static line;

Fig. 11 is a view along the line 11—11 of Fig. 3 of the member to which the parachute shroud lines are connected;

Fig. 12 illustrates the operation of the device;

Fig. 12A is a view in perspective of a complete unit and illustrates how the unit and the load may be bound together for storage and handling;

Fig. 13 shows an arrangement of the parachute shroud lines and extensions from those lines.

which may be used to connect the load directly to the parachute;

Fig. 14 shows one of the units as it appears with the construction of Fig. 13 packed in the casing.

The construction illustrated in the drawings includes a casing which is at least semi-rigid and which is composed of the container 20 and a cover 21. These two parts are shown as being of substantially equal depths, but that relation is not essential. They are molded from materials consisting of fabric and a suitable plastic laminated or bound together by the application of heat and pressure. The structure may be stiffened and reinforced throughout or at certain points by interposing one or more sheets or suitably located pieces of metallic wire screen or mesh between the plies of fabric and the plastic before the heat and pressure are applied. This is particularly useful in casings of the larger sizes.

The container 20 and its cover 21 may be so shaped that the casing is round in longitudinal cross-section or it may be of any other desired configuration. Around the edge of the container is a gutter or channel consisting of a downwardly and outwardly inclined wall 22, Figs. 3 and 4, and an upturned flange 23. The purpose of this channel will be made clear later on. The edge of the cover 21 is constructed to provide a downwardly and outwardly extending flange 24 which, as the cover is pressed into place, acts with a wedging effect against the wall 22 of the channel around the container so that when the edge of the flange 24 is seated in the bottom of the channel the cooperating faces of the flange and wall are in close engagement and under what may be termed a spring tension because of the resiliency of the flange 23 and the gutter or channel. Prior to pressing the cover into position, one or both of the cooperating faces may be coated with a sealing compound such as is hereinafter referred to in detail, the compound serving as a gasket 18 (Fig. 4) sealing any irregularities on the faces and helping to hold the cover in place.

In certain embodiments of the invention, means extending through the bottom of the container 20 serve to connect the load directly to the parachute (designated generally as 25) within the container. In the construction illustrated in Fig. 3, a member 26 (see also Fig. 11) has slots or orifices 27 through which the ends of the parachute shroud lines 19 may be looped and secured. In the construction illustrated there are sixteen shroud lines, four of them being connected through each of the orifices 27. Integral with the member 26 is a boss 28 which serves as a spacer for the member 26 and has a threaded hole to receive the threaded shank 29 of a modified eye bolt 30. A disc 31, through which the eye bolt extends, cooperates with a shoulder on the bolt in such a way that the boss 28 and the disc 31 are drawn together to clamp the container bottom between the boss and disc when the bolt is screwed home. A sealing compound may be applied around the bolt hole through the container bottom before the bolt is tightened. The eye or loop 32 (Fig. 2) of the bolt may be of any desired size or shape and serves as a convenient means for attaching the load. It will be apparent that this construction provides a very secure and air tight connection between the load on the exterior of the casing and the parachute packed within the casing.

After the cover 21 is pressed down as previously described, it is fastened in place by a plurality of pairs of straps 34, each strap being at-

tached at one end to the container 20 and drawn tightly over the cover and secured in place in such a way that the straps are under tension. The method of connecting the straps is best illustrated in Fig. 9. Each of the straps is constructed to provide a loop 35 on its end and the ends of each pair of straps are connected by a cord 36 passed through the loops 35 and drawn tight and its ends tied or knotted together in such a way as to hold the straps under tension. The other ends of the straps may be secured to the container 20 in any suitable manner. One form of connection is illustrated in Figs. 3 and 5 and another in Figs. 7 and 8. In the construction illustrated in Figs. 3 and 5, slots 37 are cut in the container at the point where the channel around the container merges with the body of the container, these slots being just wide enough to admit looped ends of the straps 34 and fasteners for those ends. The fasteners are in the nature of small wire bails 38 extending through the loops on the straps and having their ends engaging under the wall of the container. In the construction illustrated in Figs. 7 and 8, doubled ends of the straps 34 extend through slots 39 at the top of the channel around the container and the doubled ends are secured to the container wall by rivets 40. Any other suitable way of attaching the ends of the straps 34 may, of course, be employed.

After the cover has been secured in place a sealing compound may be applied as at 43 in the channel around the container. Preferably just enough of the sealing compound is used to make a safe seal over the juncture of the cover flange 24 with the channel wall 22. In some instances this material may be extended up as shown at 44 (Figs. 2 and 3) to seal completely the slots 37 or 39 around the ends of the cover holding straps 34. The sealing compound may be likewise extended to or applied at any other point necessary to close off the casing against the intrusion of moisture or anything else which might cause damage or unsatisfactory service by the parachute. On the other hand there are instances where the gasket 18 is sufficient and the additional compound 43 is unnecessary, and others in which the gasket may be omitted.

The sealing compound may be any one of a number of known compositions of rubber, plastics or waxes. One material which appears to be as suitable as any is a microcrystalline wax made and sold by Socony Vacuum Oil Company, Inc., 26 Broadway, New York, N. Y. under the trade name of "Petrosene." Petrosene makes a perfect seal, is not likely to be damaged during the usual handling of the packs and may nevertheless be fractured or broken by a seal breaking apparatus such as is hereinafter described.

The static line hereinabove mentioned is designated 41 in the drawings. It is provided with a loop 45 at its end which may be held in any suitable way, usually by hooking it over something provided for that purpose on an airplane. The static line may be of any desired or necessary length to insure that the pack and attached load will be clear of the plane before the pack is opened. In the construction illustrated in the drawings, the line is folded back and forth in a flat coil 46 (Figs. 1 and 3) between the sides of an envelope or shield 47 on top of the container cover, the edges of the shield being secured by thread stitches or loops 48 through the straps 34 and extending through eyelets 49 in the edges of the shield 47. The looped end 45 of the static line

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may be held against accidental displacement by a stitch 50 holding the static line to the shield 47. The shield 47 may be constructed of canvas or any other suitable material and usually strips 51 are laid across the flat coil of the static line before the shield is closed as additional precaution against displacement of the coils of the cord. In some instances the strips 51 may be attached to the shield and provided on one side with pockets or loops 52 holding the coils of the static line in position.

The static line 41 has a branch 55, Figs. 1 and 12, terminating in a loop through an eyelet near the edge of one of the plies of the shield 47, preferably the lower ply. When the static line is tensioned the stitch 50 is first broken. Usually the frictional resistance created by the uncoiling of the static line from within the envelope is sufficient to break the stitches 48 and free the envelope from the straps 34. However, if one or more of the stitches failed to break the envelope might interfere with releasing those straps. The branch 55 of the static line insures against such a mishap as it will break all or any of the stitches 48 which may remain unbroken and draw the envelope out of the way before the straps 34 are released. The stitch 50 may, of course, be broken manually before the loop 45 is connected to the airplane.

After the shield 47 is opened and the static line is extended, the tension of the line breaks the cover strap holding cords 36 to free the cover for removal. This is accomplished by the arrangement best shown in Fig. 9. For this purpose the static line has three branches 57, 58 and 59 having loops on their ends each engaging over a flexible tube 63 on one strand of each of the cords 36. These tubes distribute the stress applied through the static line and its branches in such a way that the loops will be certain to break the cords 36 and at the same time the tubes insure against any likelihood that the cords might cut through the ends of the loops while leaving the cords unbroken. As illustrated in the drawings, the branches 57, 58 and 59 are of different lengths so that when the strain comes on the static line and the branches the cords 36 are broken one after another or in sequence, thereby making it possible to use lighter cords 36 than if all of the straps were held by a single and possibly heavier cord and to distribute the work of releasing the cover to better advantage than if a single cord were used to hold all of the cover straps under tension.

Within the casing is a means operable to break the seal 43 and throw off the cover 21. In the form shown, this means is in the form of a strap 64 (Figs. 3, 6 and 10) having branches 65 and 66 secured at their ends by threads or stitches 67 extending through loops on the ends of the branches 65 and 66 through the adjacent straps 34 at the points where the straps are exposed through the slots 37 or 39 previously mentioned. When the wire balls 38 are used the threads 67 may be passed around the balls. The strap 64 and its branches are normally wholly within the casing but a looped end 68 of the strap 64 is connected to a branch 70 of the static line extending through a clearance 71 (Fig. 3) in the edge of the cover. A strip of wax 72 is employed to hold the branch 70 temporarily in place on the cover, it being torn or stripped off when the branch 70 is tensioned. The strap 64 and its branches may be placed either under or over the parachute in packing. When the tension of the static line is applied through the branch 70 of the static line to

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the strap 64 the loop 68 on the end of the strap engages the edge of the cover with sufficient force to break the seal 43 between the cover and the container and throw the cover off of the container. As the strap 64 straightens out the stitches or threads 67 will be ruptured and the strap carried away from the pack far enough to insure against interference with the opening of the parachute (see Fig. 12).

The static cord 41 is extended beyond the branch 70 to provide a connection between the static cord and the parachute. This connection includes a weakened link or section 73 (Fig. 12), usually a cord of predetermined strength, which snaps as soon as the static line has twitched the hem of the parachute 25 open far enough to make it certain that the air will enter under the parachute and inflate it as soon as the weight of the load is imposed on the parachute shroud lines.

From all of the foregoing it is believed to be clear that in putting the apparatus in operation the loop 45 on the end of the static cord or line 41 is attached or connected to the airplane and the sealed pack with the load attached in any suitable way to the eye 32, is then cast out into the air stream. This will tension the static cord and, in succession remove the shield 47 and uncoil the static line, apply tension in succession to the branches 57, 58 and 59 to break the cover strap holding cords one after the other, actuate the split strap 64, 65, 66 to break the seal 43 between the cover and the container and throw off the cover, and then act through the weakened link 73 to insure opening of the parachute.

As so far described the lower part of the casing, which has usually been referred to herein as the container, remains with the parachute and the load after the parachute has been set free.

In another, and, in many respects, a preferred embodiment the shroud lines 19 of the parachute are bunched or grouped as illustrated in Fig. 13, there usually being eight shroud lines in each group. The lines of each group may be connected by rings 75 to cords 76. In packing the parachute the cords 76 are placed mainly within the casing with their free ends extending out through clearances (Fig. 14) cut in the flange 24 on the cover and the flange 23 forming a part of the channel around the container. The outward or free ends of the cords 76 may be brought together and connected to a load ring or similar device to which the load may be attached in any suitable way or the cords 76 may be kept separate and separately attached at different points on the load.

When the cover 21 is unsealed and removed as previously described, the weight of the load on the cords 76 will draw the parachute out of the container and both the container and its cover will be thrown entirely free from the parachute. Usually no other provision is necessary to insure opening of the parachute but the connection to the static line consisting of weakened link 73, Fig. 12, may be employed to insure further prompt and full opening of the parachute canopy.

In respects other than the ones just stated the construction and operation of the unit illustrated in Figs. 13 and 14 is substantially identical with the construction shown in the other figures, particularly as to the way the cover is released and unsealed and then removed by a continuous pull on the static line.

As shown in the drawings the parts are so molded as to provide external recesses 79 and 80 in the container and cover and grooves 81 and 82

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extending vertically of the container and the cover side walls and across the bottom of the container and the top of the cover. The grooves 32 in the cover are used to seat the cover holding straps 34 and incidentally stiffen the cover. The main purpose of the grooves 31 in the container section of the casing is to stiffen the structure. The purpose of the recesses 79 and 80 is apparent. Obviously the making of the casing can be simplified by omitting some or all of these grooves and recesses where the material of which the casing is composed is strong and stiff enough to make such reinforcements unnecessary.

Various ways of connecting the load to the unit are shown in the drawings, but they need not be described in detail. The double looped cord 84 (Fig. 3), the automatic release 85 (Figs. 10 and 12) and the combined snap hook 86, automatic release 85 and cord 84 (Fig. 13) are all well known and illustrate the fact that any arrangement suitable for the purpose may be employed.

In commercial practice the parachute container is secured against the load with any connecting devices such as, for example, the ones shown at 76, 84, 85 and 86, coiled or held flat between them. Such a construction is illustrated in Fig. 12A. As there shown, the container 20, 21, is fastened in close relation to and on top of the load 89. This permits handling the load and the container as a unit and insures against disarrangement or mis-operation of the connecting devices, particularly against premature operation of an automatic parachute release such as the one shown at 85, those connecting devices being inaccessible or unexposed until the container and the load separate far enough to bring the connecting devices into play. In the embodiment of this feature illustrated in the drawings, four ribbons or straps 90 are each secured at one end by rivets 91 to the base portion 20 of the container. Preferably the base portion has recesses 92 (Figs. 2 and 10) to receive ends of the straps so as to give substantially a smooth over-all exterior surface. Adhesive or wax may be applied to the ends of the straps or in the bottoms of the recesses before the strap ends are riveted into place. In making the attachment the straps are drawn tightly around the load and their ends secured together in pairs by tying, stitching or any other suitable manner. The straps when installed are long enough to accommodate loads of various dimensions.

The straps are composed of a material having a tensile strength low enough to insure that they will break under the strain imposed upon them when the parachute opens to take up the load. In some instances this may happen earlier in the operation as, for example, when the branch 79, Fig. 10, of the static line actuates the arrangement for unsealing and removing the cover 21. Instead of straps, cords of selected tensile strengths may be employed. It will be apparent that the use of the straps 90 does not in any way interfere with the operation of the static line in opening the parachute pack.

While the invention has been described with specific references to the features illustrated in the drawings, it is to be understood that it is not the desire to be limited by the description or the drawings except to the extent indicated in the claims which follow.

What is claimed is:

1. A parachute pack comprising a container for the parachute, a cover for the container, said container and said cover having engaging wall

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portions and together forming an enclosure for containing a parachute, said cover being completely removable from said container, a plurality of means normally holding the cover in place on the container, and a releasing means common to said holding means operable to disable said holding means one at a time to free the cover for removal.

2. A parachute pack comprising a container for the parachute, a cover for the container, said container and said cover having engaging wall portions and together forming an enclosure for containing a parachute, a plurality of means normally holding the cover in place on the container, releasing means common to the holding means operable to disable said holding means in sequence to free the cover for removal, and means extending between the walls of said container and cover for removing the cover, said cover removing means being connected to said releasing means for actuation thereby.

3. A parachute pack comprising a container for the parachute, a cover for the container, said container and said cover together forming an enclosure for containing a parachute, said cover being entirely removable from said container for setting free the parachute, a plurality of means normally holding the cover on the container, releasing means operable to disable said holding means in sequence to free the cover for removal, means actuated by the releasing means for removing the freed cover, and a connection between said releasing means and the parachute for drawing the parachute at least partly out of the container after said cover is removed.

4. A parachute pack comprising a container for the parachute, a cover for the container, said container and said cover having engageable wall portions and together forming an enclosure for containing a parachute, means extending through the wall of the container for connecting a load to the parachute within the container, a plurality of means normally holding the cover in place on the container, said cover-holding means being anchored to said container and extending over the exterior of said cover, means under the cover operable to remove the cover, said cover-removing means having extensions lying between adjacent wall portions of said cover and container, a static line, and branches from said static line so constructed and connected that a continuous pull on the static line will disable the cover holding means in sequence and actuate the cover removing means to free the parachute to support the load.

5. A parachute pack comprising a container for the parachute, a cover for the container, said container and said cover having engaging wall portions and together forming an enclosure for containing a parachute, connections to the parachute shroud lines extending outward between the container and the cover to which the load may be attached, a plurality of means normally holding the cover on the container, said cover-holding means being anchored to said container and extending over the exterior of said cover, means under the cover operable to remove the cover, said cover-removing means having extensions lying between adjacent wall portions of said cover and container, a static line, and branches from said static line so constructed and connected that a continuous pull on the static line will disable the cover holding means and operate the cover removing means thereby freeing the parachute to assume support of the load.

6. A parachute pack comprising a container for the parachute, means extending through the bottom of the container for connecting a load to the parachute within the container, a cover for the container, said container and said cover together forming an enclosure for containing a parachute, said cover being entirely removable from said container for setting free the parachute, a plurality of means normally holding the cover in place on the container, a release cord and connections therefrom to said holding means, said connections being so constructed and arranged that a pull on the cord will disable the holding means in sequence and remove the cover to expose the parachute.

7. A parachute pack comprising a moisture impermeable container for the parachute, a moisture impermeable cover for the container, said container and said cover having engaging wall portions and together forming an enclosure for containing a parachute, said cover being completely removable from said container, a plurality of means normally holding the cover on the container, a seal between the edge of the cover and adjacent portions of the container, said seal being separate from said cover-holding means, a release cord, and connections to said cord so constructed and arranged that a single pull on the cord will disable the cover holding means one at a time, destroy the seal and remove the cover.

8. A parachute pack comprising a moisture impermeable container for the parachute, a parachute in the container, a moisture impermeable cover for the container, a plurality of means normally holding the cover on the container, a seal covering the junction between the edge of the cover and the container, said seal being separate from said holding means, means under the cover operable to remove the cover, a release cord, and connections to said cord so constructed and arranged that a single pull on the cord will sequentially disable the cover holding means one after another, destroy the seal, remove the cover, and draw at least part of the parachute out of the container.

9. A parachute pack comprising a container for the parachute, a cover for the container, a plurality of pairs of straps each attached at one end to the container, rupturable means joining together free ends of the straps of each pair over the cover to cause said straps to hold the cover in sealing relation on the container, a static line, and connections operated by a pull on the static line for breaking the rupturable means in a predetermined sequence to free the cover for removal.

10. A parachute pack comprising a container for the parachute, means extending through the bottom of the container for connecting a load to the parachute, a cover for the container, a plurality of pairs of straps each secured at one end to the container, cords connecting the other ends of the straps of each pair together under tension to hold the cover in sealing relation on the container, a substantially air and moisture proof seal around the edge of the cover and adjacent parts of the container, means under the cover operable to break the seal and remove the cover, a static line, and branches from the static line so constructed and connected that a single continuous pull on the static line will break the aforesaid cords one after another and operate the means for breaking the cover seal and removing the cover.

11. A parachute pack comprising a container for a parachute, a parachute within said con-

tainer, means extending through the container wall for connecting a load to the parachute, a cover for the container, said cover being removable from the opening of said container for setting free said parachute, means under the cover operable to remove the cover, a static cord coiled in a flat coil on the top exterior of the cover, a shield holding said coils against accidental disturbance, rupturable means for holding said shield in place on the cover with an end of the cord exposed outside of the shield, a connection between said shield and said cord whereby a pull on the exposed end of the cord will rupture said means and open the shield, and another connection between the static cord and the cover removing means whereby a continuation of the pull on the static cord will actuate the cover removing means to expose the parachute.

12. A pack for a parachute comprising a container for the parachute constructed to provide a channel around its edge, a cover for the container constructed to provide a flange cooperating with a wall of the channel, means for securing the cover on the container in such manner as to force said flange and said wall into close engagement, and a sealing compound in the channel covering the lower edge of the flange and adjacent portions of the channel.

13. A pack for a parachute comprising a container for the parachute constructed to provide a channel around the edge of the container consisting of a portion inclined downward and outward and an upwardly extending flange, a cover for the container having its edge constructed to provide a flange extending downward and outward fitting with a wedging action against the downward and outwardly inclined wall of the channel, a seal of rupturable material in the channel extending well above the edge of the flange on the cover in such manner as to exclude moisture and the like from a parachute packed in the container.

14. A parachute pack comprising a container for the parachute, a cover for the container, a plurality of pairs of straps each attached at one end to the container, cords joining together the free ends of the straps of each pair over the cover in such manner as to cause the straps to hold the cover in sealing relation on the cover, means for connecting a load on the exterior of the container to the parachute within the container, a seal covering the juncture of the cover edge and the container, means between the container and the cover operable to break the seal and remove the cover, a static line, branches from said line so constructed and connected as to break the aforesaid cords in sequence and then operate the seal breaking and cover removing means, and a connection including a weakened section connecting the static line to the canopy of the parachute.

15. A parachute pack comprising a substantially rigid casing, said casing being constituted of two parts comprising a container and a cover having engageable walls and together forming an enclosure for containing a parachute, means attached to said container and overlying said cover for holding the casing closed, said cover-holding means including rupturable means by which said holding means may be parted to render the same ineffective for holding the casing closed, a static line having connection with said rupturable means for rupturing the same by a pull on the static line, and means for mounting said static line in transportable form on the exterior of said casing.

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16. A parachute pack comprising a substantially rigid casing, said casing being constituted of two parts comprising a container and a cover having engageable walls and together forming an enclosure for containing a parachute, a parachute within said casing, means attached to said container and overlying said cover for holding the casing closed, said cover-holding means including rupturable means by which said holding means may be parted to render the same ineffective for holding the casing closed, a sealing compound forming a seal between contacting edges of said container and of said cover for preventing access of moisture to the interior of said casing, strap means for breaking said seal, said strap means normally lying between the cover and parachute and extending over opposite edges of said container and cover and through adjacent portions of said sealing compound, and a static line having connection with said cover-holding means and also with said strap means to rupture said rupturable means and tension said strap means

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to part the cover from the container and relieve their sealed relationship whereby the parachute is freed.

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