

July 6, 1948.

M. J. STURTEVANT

2,444,859

INFLATABLE CONTAINER AND PACK THEREFOR

Filed Jan. 17, 1946

3 Sheets-Sheet 1

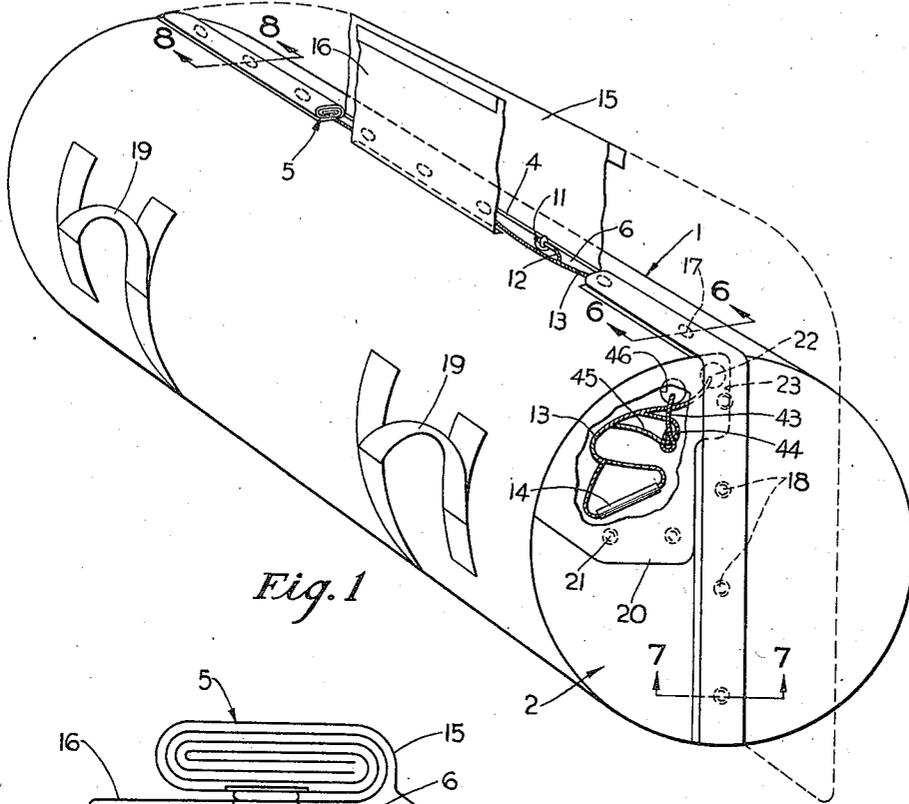


Fig. 1

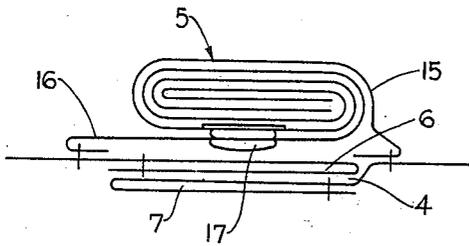


Fig. 6

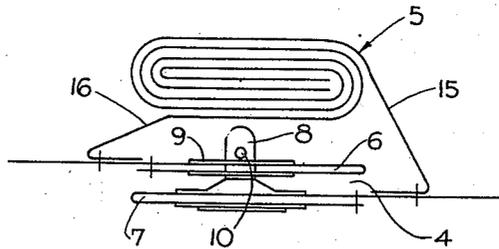


Fig. 8

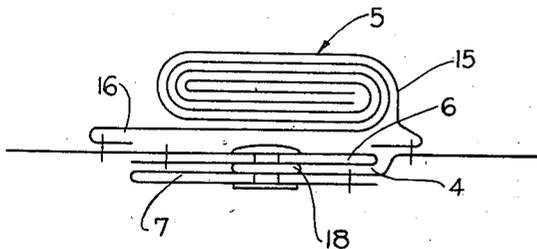


Fig. 7

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3 Sheets-Sheet 2

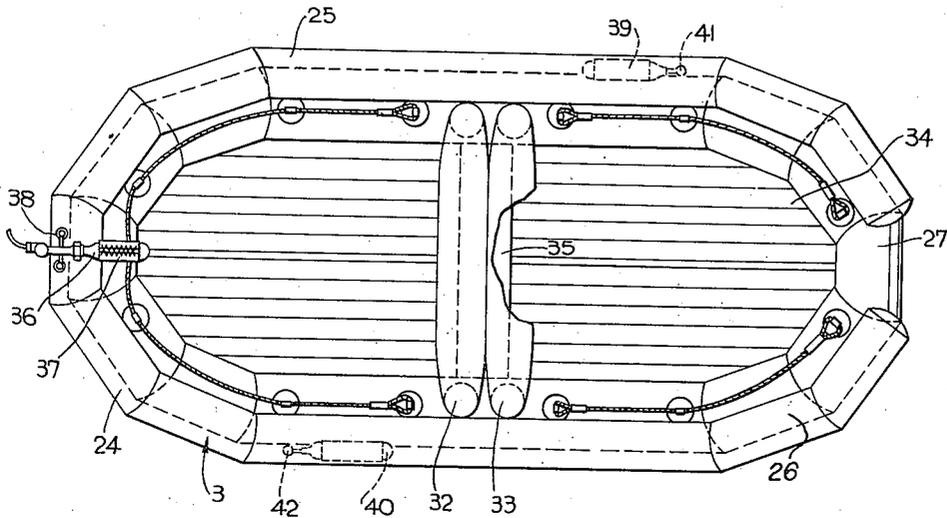


Fig. 2

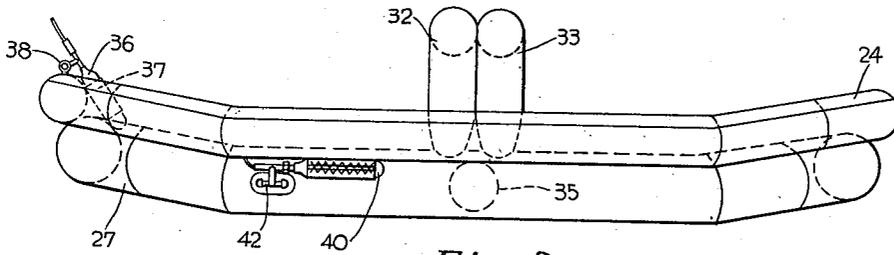


Fig. 3

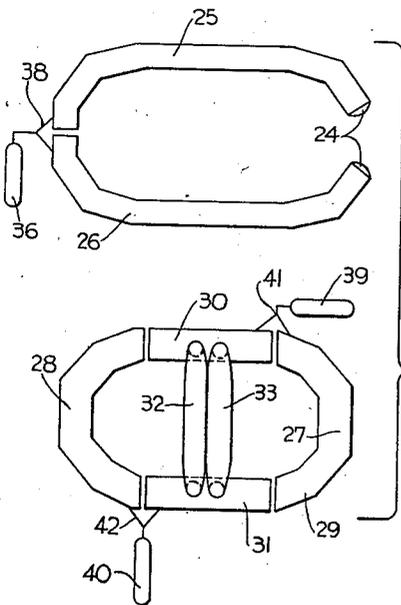


Fig. 5

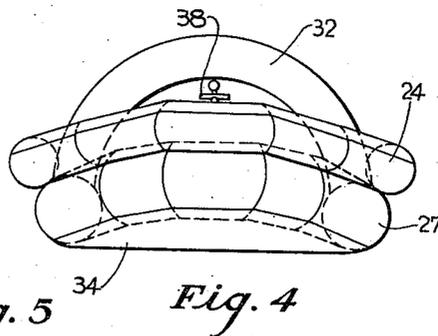


Fig. 4

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INFLATABLE CONTAINER AND PACK THEREFOR

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3 Sheets-Sheet 3

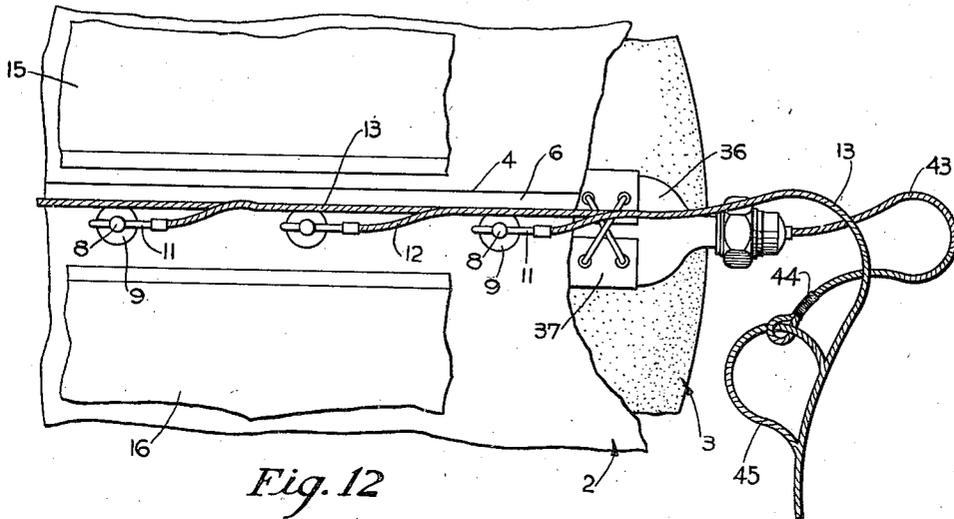


Fig. 12

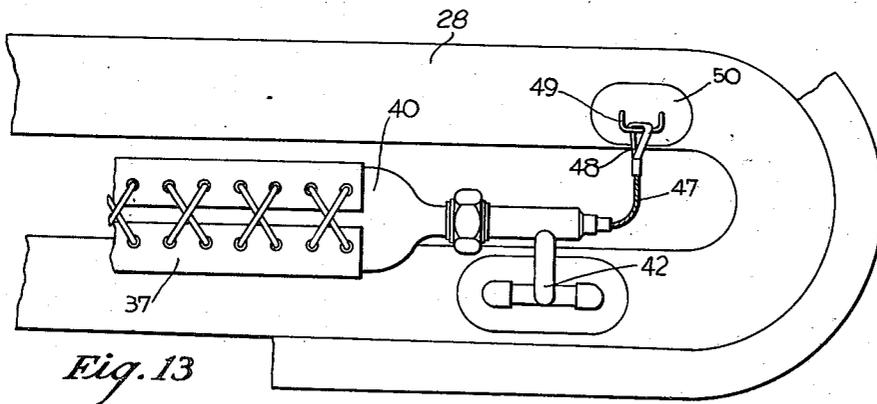


Fig. 13

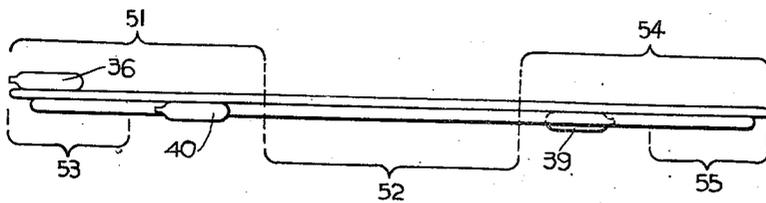


Fig. 9

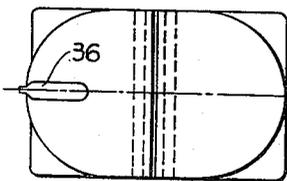


Fig. 11

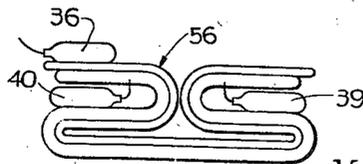


Fig. 10

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UNITED STATES PATENT OFFICE

2,444,859

INFLATABLE CONTAINER AND PACK THEREFOR

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Application January 17, 1946, Serial No. 641,817

15 Claims. (Cl. 9—2)

1

The present invention relates to a novel form of pack embodying an inflatable container and an envelope which, when opened, will free the container and cause it to be automatically inflated. More particularly, the invention pertains to a multi-compartment inflatable container such, for example, as a life raft, boat, pontoon, and the like, and an envelope therefor which is provided with means for quickly opening the envelope and contemporaneously performing the operation of inflating at least one of the compartments and additional means for completely inflating the several remaining compartments of the container in predetermined sequential relation.

It is an object of the present invention to provide an assembly which, in case of emergency, will be capable of substantially instantaneous use.

It is a further object of the present invention to provide a multi-compartment inflatable container, the inflation of one compartment of which will initiate the sequential inflation of the remaining compartments to cause the container to be completely inflated in a minimum of elapsed time.

It is a still further object of the present invention to provide a form of inflatable multi-compartment container which embodies a plurality of supply means for providing fluid under pressure to inflate the compartments thereof in predetermined sequential relation. Other objects and advantages will be apparent from the following detailed description of a typical form of assembly embodying the inventive concept.

In the drawings, Figure 1 is a perspective view illustrating a typical form of pack assembly embodying the teachings of the present invention and having parts broken away for the sake of clearness. Figure 2 is a plan view of one form of inflatable multi-compartment container, in this case, an inflatable boat or raft such as is employed on aircraft, on shipboard, etc. Figures 3 and 4 represent a side elevation and an end elevation, respectively, of the boat illustrated in Figure 2. Figure 5 is a diagrammatic representation of portions of the boat structure in disassembled relation to illustrate the compartmentation. Figure 6 is a diagrammatic representation of a section as it appears from the line 6—6 in Figure 1 being taken through the seal of the envelope. Figure 7 represents a diagrammatic cross section corresponding generally to Figure 6 as it appears from line 7—7 in Figure 1. Figure 8, which is generally similar to Figures 6 and 7, represents a diagrammatic cross section along

2

the line 8—8 in Figure 1. Figures 9, 10, and 11 illustrate the manner of folding the boat structure of Figure 2 to prepare it for insertion in the envelope. Figure 12 is a fragmentary view illustrating a portion of the boat structure and its envelope on an enlarged scale. Figure 13 is a fragmentary view illustrating a part of the boat on an enlarged scale.

Referring first to Figure 1 of the drawings, the reference character 1 represents an assembly embodying an enclosure or envelope 2 in which is disposed an inflatable container or boat 3 (see Figure 2). The boat 3 is deflated and folded in a manner to be described hereinafter to enable it to be inserted in the envelope 2. The envelope 2 is advantageously of generally cylindrical form, being closed at both ends and having an opening 4 which extends both axially along the body of the envelope and diametrically across one of the ends thereof. A water-tight closure 5 serves to seal the opening 4 against the entrance of moisture to the interior of the envelope 2 during the period of storage of the boat 3 therein.

The envelope 2 is advantageously fabricated from a rubberized fabric material and is so constructed that it provides the overlapping edges or margins 6 and 7 (see Figures 6, 7, and 8) which cooperate to close the opening 4 in said envelope. Any suitable form of readily disengageable fastening means may be employed to close the opening 4 of the envelope 2. One form of fastening means employs a plurality of studs 8 (see Figure 8) which are secured to the margin 7 of the opening 4 and arranged in equally spaced relation from one end to the other of the axially extending portion of said opening. A corresponding number of grommets 9 are inserted in the margin 6 of the opening 4 for registration with the studs 8 to close the opening.

Each of the studs 8 has a hole 10 drilled diametrically therethrough substantially equidistant from the ends thereof for the reception of a pin 11 (see Figure 12). Each pin 11 is adapted to be connected, as by means of short flexible cable segments or connections 12, to a rip cord or flexible cable 13 of a length which is substantially coextensive with the axially extending portion of the opening 4. When the opening 4 of the envelope 2 is to be closed, each of the studs 8 is inserted in its corresponding grommet 9 and one of the pins 11 is inserted in the hole 10 so as to prevent the separation of the margins 6 and 7 of the fabric at the opening 4. The flexible cable 13 is provided with a handgrip 14 at one end thereof.

3

The margin 7 adjacent the opening 4 is provided with a fabric strip 15 which is secured in any suitable fashion such, for example, as by stitching to the outer surface of the fabric envelope 2 as shown in Figure 1. The margin 6 of the opening 4 of the envelope 2 has a similar fabric strip 16 which is adapted to cooperate with the strip 15 to provide a water-tight seal which extends over the entire length of the opening 4 in the envelope 2. As indicated in Figure 1, the strips 15 and 16 are arranged to overlay the disengageable fastening means embodying the studs 8, grommets 9, and the flexible cable 13 with its pins 11.

The fabric strips 15 and 16 are advantageously adapted to be interfit by rolling or folding one upon the other until they closely fit the outer surface of the envelope 2 immediately above the opening 4 therein. A number of detachable fastening means or snap fasteners 17, which may advantageously be of the glove fastener type, are provided between the strips 15 and 16 and arranged in alternate spaced relation with respect to the studs 8 and the grommets 9 to insure against unauthorized unfurling of the strips forming the seal. The snap fasteners 18 serve to secure in place those portions of the margins 6 and 7 extending across the end of the envelope 2. (See Figures 1 and 7.) No fastening means are required to secure the corresponding portions of the strips 15 and 16 inasmuch as the strips are tightly stretched in assembling from their end stitching at the base of the end of the envelope 2 as seen in Figure 1 to the first fastener 17 on the uppermost side of the envelope.

To facilitate transporting the assembly 1, a plurality of handles 19 are secured to the outer peripheral wall of the envelope 2 in the manner illustrated in Figure 1. A means for temporarily housing the handgrip 14 and the excess portion of the cable 13 employed in the disengageable fastening means for closing the opening 4 is provided in the cover patch 20 which may be stitched or otherwise hingedly secured to the end of the envelope 2 adjacent the opening 4 therein. The snap fasteners 21 are arranged on the cover patch 20 to serve to temporarily retain the latter in closed position and prevent the handgrip 14 from being inadvertently pulled until such time as it is desired to open the envelope 2 and to free the boat 3 therefrom.

As will be noted from Figure 1 of the drawings, the cable 13 advantageously extends through an opening 22, in the end of the envelope 2 adjacent the portion of the opening 4 which extends diametrically thereacross. The cover patch 20 has a flap 23 projecting from one of its marginal edges to seal the opening 22 against the entrance of moisture to the envelope 2. The portion of the closure 5 embodying the fabric strips 15 and 16 and extending across the end of the envelope in which the opening 22 is disposed serves to hold the flap 23 in place when the opening 4 of the envelope 2 is sealed shut.

The boat 3 which, as previously indicated, comprises the inflatable container embodied in the pack assembly 1 of Figure 1 is advantageously of a type commonly referred to as a twin-rail raft. The boat 3 (see Figures 2, 3, and 4) has a top rail 24 which is generally U-shaped in a horizontal plane and comprises side compartments 25 and 26 which are symmetrical about the longitudinal axis of the boat. The bottom rail 27 of the boat 3 is advantageously separated by a plurality of vertical bulkheads (not shown) into

4

an arcuate fore compartment 28 and an arcuate stern compartment 29, together with side compartments 30 and 31 located amidships. In each of the rails each of the several compartments are sealed off from adjoining compartments by vertical bulkheads, thereby forming sealed individual containers.

In addition to the structure previously described for the boat 3, a pair of righting tubes 32 and 33, arranged in tandem, are disposed amidships and extending thereacross between the side compartments 30 and 31 of the bottom rail 27. One of the righting tubes 32 disposed nearest the fore compartment may be inflated simultaneously with the side compartment 30 while the other righting tube 33 is inflated from the right hand compartment 31. Disposed beneath the righting tubes 32 and 33 on the floor 34 of the boat 3 is an inflatable thwart 35 which may be employed as a seat to facilitate the maneuvering of the boat once it is inflated.

Any suitable supply of fluid under pressure may be employed in the inflation of the boat 3, cylinders of carbon dioxide gas under pressure being the most commonly used type of inflating means. In order to facilitate the inflation of the top rail 22 of the boat 3, a single cylinder 36 is disposed at the fore peak of the boat defined by the base of the U-shaped top rail. The cylinder 36, secured in place thereon as by means of the laced pocket 37, is interconnected with the two compartments 25 and 26 as by means of a spreader connection 38 in the form of a T for introducing the gas, when released from the cylinder 36, equally into each of the compartments which it serves.

Additional inflating cylinders 39 and 40, secured to the outer walls of compartments 30 and 31, respectively, in a manner similar to that of the cylinder 36, are provided for the inflation of the bottom rail 27. The cylinder 39 serves to inflate the stern compartment 29, side compartment 30, and the associated righting tube 32. The cylinder 40 positioned diagonally across the boat 3 from cylinder 39 similarly inflates the fore compartment 28, side compartment 31, and the righting tube 33. The spreader connections 41 and 42 are provided for each of the cylinders 39 and 40, respectively, to direct the gas to the several compartments.

Although similar inflating means may be employed to inflate the floor 34 and the thwart 35 of the boat 3, it has been found to be satisfactory to provide simple manual inflation means, such, for example, as a hand pump which may be attached to a suitable valve provided in the floor for inflating these parts after the top rail 24, the bottom rail 27, and the righting tubes 32 and 33 have been properly inflated. Suitable conventional valve means (not shown) are provided in each of the several compartments comprising the boat structure for the attachment of the hand pump thereto. This arrangement is provided for the purpose of replacing with air any of the gas which may have diffused from the several compartments during the period that the boat is required to be totally inflated.

The actuation of the cylinder 36 in the fore peak of the boat 3 is achieved by the use of a manual release means embodying the flexible cable connection 43 which is advantageously attached as at 44 (see Figure 12) to the loop 45 secured to the cable 13. The cable connection 43 extends through an opening 46 in the end wall of the envelope 2 across which the opening 4

5

extends. Said opening 46 is disposed adjacent the opening 22 and is closed, when the pack is assembled, by the cover patch 20. The operation of actuating the release mechanism for the cylinder 36 is substantially contemporaneous with the removal of the pins 11, which serve to hold the studs 8 and grommets 9 in assembled relation, when the boat 3 is to be released from the envelope 2 and made ready for use by the pulling of the handgrip 14 of the rip cord 13 as will be explained hereinafter.

As will be seen from Figure 13, suitable release mechanism are provided for the operation of the cylinders 39 and 40, the mounting and actuation of which are identical. The cylinder 40 is securely attached to the outer wall of the compartment 31 of bottom rail 27 by means of the laced pocket 37 and is connected with the spreader 42. The cylinder release has attached thereto a flexible cable connection 47 which has on the end thereof a spring type disengageable fastener 48. A D-ring 49 is advantageously attached to the outer wall of the adjacent compartment, in this instance, the fore compartment 28 as by means of a patch 50.

The spacing between the position of the D-ring 49 and the end of the cylinder 40 is advantageously greater than the over-all length of the cable connection 47 for the releasing of the gas from the cylinder. The cable connection 47, as we shall presently see, is capable of being connected by means of the fastener 48 to the D-ring 49 when the boat 3 is folded and rolled to be inserted into the envelope 2. As a result of the arrangement, the gas will be released from the cylinder 40 when the boat 3 unfolds, thereby causing the D-ring to pull the connection as the folded portions of the boat straighten out, the unfolding of the boat being initiated by the inflation of the top rail 24 by the cylinder 36 in a manner to be described. It is to be noted in particular that the rip cord 13 is so constructed that when the handgrip 14 is pulled, all of the several pins will be withdrawn from their respective holes 10 in the studs 8 to insure that the opening 4 is free before the release cable 43 causes the cylinder 36 to begin to inflate the compartments 25, 26 of the top rail 24.

In order to enable the boat 3 to be inserted in the envelope 2, it must be folded and rolled upon itself into a compact pack. To this end, the deflated boat 3 is first spread out on a flat surface. The first step in preparing boat 3 involves the folding of approximately one-third of the over-all length thereof, indicated by the reference character 51 at the left in Figure 9, including all of the fore compartment 28 of the bottom rail and portions of the adjoining compartments in both rails back upon the middle third 52 of the boat. Next, one-half 53 of the folded third 51 is folded back upon itself as indicated in Figure 10.

The last-mentioned operation brings the cylinder 40 between the folded sixth and the fore peak cylinder 36 on the upper side of the pack (see Figure 10). To complete the folding of the boat 3, the third portion 54, including all of the stern compartment 29 of the bottom rail and portions of the remaining top and bottom rail compartments, is folded back upon the middle third 52 and one-half thereof, indicated by numeral 55, is thereafter doubled back upon itself. This now completes the folding of the pack to correspond with the arrangement shown in Figure 10 in which the cylinder 39 is positioned between the folded segments of the boat.

6

Before the folded pack 56, including the boat 3 and waterproof containers (not shown) containing supplies, first aid necessities, and the like, is rolled to cause it to pass through the opening 4 in the envelope 2, the cable connections for the operation of cylinders 39 and 40 are connected as by means of the snap fasteners 48 to the D-rings 49. The pack 56 of Figure 10 is then rolled about the longitudinal axis 57 of the folded boat 3. The rolled pack is then inserted in the envelope 2 through the opening 4 therein. The studs 8 are then inserted in the grommets 9 and the pins 11 inserted through the holes 10 to hold the margins 6 and 7 of the opening 4 closed.

The cable 13 connected to the several pins 11 and the cable connection 43 for the cylinder 36 are carefully threaded through the respective openings 22 and 46 in the end of the envelope 2 so as to enable the handgrip 14 on the end thereof to be enclosed in the pocket formed by the buttoned down patch 20. Then the portions of the margins 6 and 7 extending across the end of the envelope 2 are secured together by engaging the snap fasteners 18 thereon. The fabric strips 15 and 16 are next rolled or folded upon each other to form the water-tight closure 5. The folded strips 15 16 forming the closure 5 are secured in place by the glove fasteners 17. In this form the finished pack or assembly 1 is ready for use in any emergency.

It should be noted, in passing, that a suitable number of paddles and other additional items of equipment may be inserted in the envelope or suitable wall pockets formed therein, as may be desired. Other forms of inflatable containers embodying a plurality of individual compartments which may be inflated in any suitable fashion may advantageously be substituted for the boat 3 employed in the foregoing description of the inventive concept.

The assembly or pack 1 is highly advantageous for use on shipboard for the reason that it possesses far less weight and bulk than standard rigid life boat equipment. The packs may be stored at specific stations along the decks of a ship where, in case of emergency, they may be released and in a matter of a few seconds prepared for immediate use. It will be readily understood from Figure 12 that when the handgrip 14 on the rip cord 13 is pulled, the fastening means embodying the studs 8 and grommets 9 will be released due to the removal of pins 11.

Contemporaneously with the withdrawal of pins 11 and the freeing of the opening 4 of the envelope 2, the cylinder 36 is released and the compartments 25 and 26 of the top rail 24 of boat 3 are fully inflated. The inflating of the top rail 24 causes the boat to unfold itself and this action unsnaps the fasteners 17 and 18 thereby unfolding the fabric strips 15 and 16. The boat 3 is immediately released from the opening 4 of the envelope 2. The release and unfolding of the boat 3 automatically results in the pulling of the cable connections 47, causing the release of the gas from the cylinders 39 and 40 into the compartments of the bottom rail 27 and the righting tubes 32 and 33.

As previously indicated, the boat 3 will readily float in upright position when the top rail 24, the bottom rail 27, and the righting tubes 32, 33 are inflated. Once this is achieved, the hand pump included in the equipment (not shown) is attached to the above mentioned valve in the floor 34 and said floor and the thwart 35 may be inflated to the desired extent.

The inflation of the top rail 24 of the boat 3 and the drawing of the pins 11 from studs 8 may, if desired, be accomplished by a suitable hydrostatic release means (not shown) of conventional design for each assembly 1. This sort of arrangement would obviate the necessity of manually pulling the rip cord 13 by attaching the handgrip 14 to some such device. Thus, in the event that a ship carrying a number of the assemblies 1 on its decks is sunk, the hydrostatic release means may be set to act under predetermined water pressure to pull the rip cord and initiate the operation of freeing and inflating the life boats as the ship descends below the surface of the water.

Other similar modifications may be made in the apparatus employed in the delineation of the inventive concept without in any way departing from the spirit or scope of the present invention.

While in accordance with the patent statutes one best known embodiment of the invention has been illustrated and described in detail, it is to be particularly understood that the invention is not limited thereto or thereby, but that the inventive scope is defined in the appended claims.

I claim:

1. An assembly comprising an inflatable container, an envelope having a sealable water-tight closure defining an opening therein for receiving the container in folded form, disengageable fastening means on said envelope for securing the closure, means for at least partially inflating the container, manual means for releasing the inflating means and contemporaneously disengaging the fastening means, means completing the inflation of the container, and means for automatically releasing the last-mentioned inflating means, said release means being actuated upon the partial inflation of the container.

2. An assembly comprising an inflatable container, an envelope having an opening therein for receiving the container in folded form, flaps adjacent the margins of the opening which are mutually interfitting to provide a water-tight seal, disengageable fastening means on said envelope for securing the flaps in sealed relation, means for at least partially inflating the container, manual means for releasing the inflating means to initiate inflation of the container and contemporaneously disengaging the fastening means to cause the container to emerge from the envelope as it is inflated, means completing the inflation of the container, and means for automatically releasing the last-mentioned inflating means, said release means being actuated upon the partial inflation of the container.

3. An assembly comprising an inflatable container, an envelope having an opening therein for receiving the container in folded form, flaps adjacent the margins of the opening in the envelope, said flaps being arranged to be rolled together a number of times to form a water-tight sealing closure for the opening, disengageable fastening means on said enclosure for securing the flaps in interfitting relation, means for at least partially inflating the container to cause it to unfold, manual means for releasing the inflating means and contemporaneously disengaging the fastening means, means completing the inflation of the container, and means for automatically releasing the last-mentioned inflating means, said release means being actuated by the unfolding of the container.

4. An assembly comprising an inflatable multi-compartment container, an envelope receiving

the container in folded form, said envelope having a water-tight sealable closure, fastening means on said envelope for securing said closure, a first means on the container for inflating at least one of the compartments of the container, manual means for disengaging the fastening means and for releasing the first inflating means to begin the inflation of the container, additional means for inflating the remaining compartments of the container, and means operable automatically upon inflation of one of the compartments of the container to release the additional inflating means.

5. An assembly comprising an inflatable multi-compartment container, an envelope having an opening therein for receiving the container in folded form, a closure embodying a pair of flaps adjacent the edges of the opening which mutually interfit to provide a water-tight seal for the opening, fastening means on said envelope for securing said closure, a first means on the container for inflating at least one of the compartments of the container and unfolding the same, manual means for disengaging the fastening means and for releasing the first inflating means to begin the inflation of the container, additional means for inflating the remaining compartments of the container, and means actuated automatically by the unfolding of the container to release the additional inflating means.

6. An assembly comprising an inflatable multi-compartment container, an envelope having an opening therein for receiving the container in folded form, a water-tight sealable closure on said envelope embodying flaps adjacent opposed edges of the opening, said flaps being arranged to be folded over each other a number of times to provide a positive seal for the opening, fastening means on said envelope for securing said closure, a first means on the container for inflating at least one of the compartments of the container, manual means for disengaging the fastening means and for releasing the first inflating means to begin the inflation of the container and to cause it to unfold, additional means for inflating the remaining compartments of the container, and means secured to adjacent portions of the container itself operable upon by the action of unfolding of the container to release the additional inflating means for completing the inflation of the container.

7. An assembly comprising an inflatable multi-compartment container, an envelope for receiving the container in folded form, mutually interengaging flaps defining an opening in the envelope and forming when interfitted a water-tight closure for the envelope, fastening means cooperating with the closure flaps to secure the flaps in place and close the opening in the envelope, a first means on the container for inflating at least one of the compartments of the container, manual means for actuating the first inflating means and contemporaneously disengaging the fastening means, additional means for inflating the remaining compartments of the container, and means for actuating the additional inflating means the operation of which is automatically initiated by the operation of inflating one of the compartments of the container.

8. An assembly comprising an inflatable multi-compartment container, an envelope for receiving the container in folded form, mutually interengaging flaps defining an opening in the envelope and forming when interfitting a water-tight closure for the envelope, fastening means

cooperating with the closure flaps to secure the flaps in place and close the opening in the envelope, a first supply cylinder of gas under pressure on the container for inflating at least one of the compartments of the container, which causes the container to unfold itself, manual means for actuating the first inflating cylinder and contemporaneously disengaging the fastening means to open the opening and release the container as it unfolds additional supply cylinders of gas under pressure for inflating the remaining compartments of the container, and means secured to adjacent portions of the container when it is folded for actuating the additional supply cylinders the operation of which is automatically initiated by the unfolding of the container.

9. An assembly comprising an inflatable multi-compartment container, such as a twin rail boat and the like, an envelope for receiving the boat in folded form, mutually interengaging flaps on the envelope defining an opening therein and forming upon being folded upon each other a water-tight closure for the envelope, fastening means cooperating with the closure flaps to close the opening in the envelope, a first cylinder of gas under pressure on the container for inflating at least the top rail of the boat causing it to unfold, manual rip cord means for releasing the first cylinder and contemporaneously disengaging the fastening means to open the opening in the enclosure and release the boat as it unfolds, additional cylinders of gas under pressure for inflating the remaining compartments forming the bottom rail of the boat, and means for releasing the additional cylinders, the operation of the releasing means being automatically initiated by unfolding of the boat with the operation of inflating the top rail thereof.

10. In combination, a pneumatic container embodying a plurality of cooperatively arranged inflatable compartments, a first means for inflating at least one of the compartments of the container, manual means for releasing said first inflating means, additional means for inflating the remaining compartments of the container, and means for automatically releasing the additional inflating means, the operation of said last-mentioned release means being initiated by the inflation of the first of said compartments.

11. In combination, a pneumatic container embodying a plurality of cooperatively arranged inflatable compartments, a first means for inflating at least one of the compartments of the container, manual means for releasing said first inflating means, a second means for inflating one of the remaining compartments of the container, a third means for inflating another of the compartments of the container, and sequentially operable release means for actuating the second and third inflating means to complete the inflation of the container, said last-mentioned release means being automatically operated by the action of inflating the container by the first inflating means.

12. In combination, a pneumatic container embodying a plurality of cooperatively arranged inflatable compartments, a first supply cylinder of fluid under pressure for inflating at least one of the compartments of the container, manual means for releasing said first cylinder to begin the inflation of the container, additional supply cylinders of fluid under pressure for inflating the remaining compartments of the container, and a release mechanism secured to a portion of the container for automatically releasing the fluid in the additional supply cylinders to complete the

inflation of all of said compartments, said release mechanism being actuated to release the fluid in the additional supply cylinders in predetermined sequential relation to each other by the inflation of first of the compartments of the container.

13. A rubberized fabric boat structure comprising a top rail and a bottom rail each of which embodies a plurality of inflatable compartments, means associated with the top rail for providing fluid under pressure to inflate the same, manual means for releasing the inflating means, means associated with the bottom rail for providing fluid under pressure to the compartments of the bottom rail, and means for automatically releasing the means inflating the bottom rail, said releasing means being actuated by the unfolding of the boat.

14. A pack comprising a rubberized fabric boat structure embodying a top rail and a bottom rail each of which is formed of a plurality of individual compartments, an envelope of generally cylindrical shape, an opening in the envelope for the reception of the boat in folded and rolled form, said opening extending axially of the envelope and diametrically across an end thereof and having overlapping margins, a plurality of studs arranged in spaced relation along a portion of one of the margins of the opening, a corresponding number of grommets on a portion of the other margin for registration with the studs to close the opening in the envelope, disengageable means securing the grommets and studs in assembled relation, means supplying fluid under pressure for the inflation of the top rail of the boat, means supplying fluid under pressure for inflating the bottom rail of the boat, a manually operable rip cord interconnecting the several disengageable means and actuating the fluid supply means serving the top rail, and means actuated by the unfolding of the boat for releasing the fluid supply means serving the bottom rail of the boat.

15. A pack comprising a rubberized fabric boat structure embodying a top rail and a bottom rail each of which is formed of a plurality of individual compartments, an envelope of generally cylindrical shape having an opening therein extending in an axial direction along the envelope and diametrically across an end thereof for the reception of the boat in folded and rolled form, said opening having overlapping margins extending from end to end thereof, a plurality of studs arranged in spaced relation along a portion of one of the margins of the opening, a corresponding number of grommets on a portion of the other margin for registration with the studs to close the opening in the envelope, disengageable means securing the grommets and studs in assembled relation, means supplying fluid under pressure for the inflation of the top rail of the boat, means supplying fluid under pressure for inflating the bottom rail of the boat, means on each of the fluid supply means for releasing the fluid to inflate the several compartments forming the boat, a manually operable rip cord interconnecting the several disengageable means and the release means for the fluid supply means serving the top rail, means secured to the bottom rail of the boat for interconnection with the release means actuating the fluid supply means serving the bottom rail of the boat, interengaging strips secured to the envelope along the edge of the opening which are foldable one upon the other to form a water-tight closure for the opening, and disengageable

11

fastening means interspersed with the studs and grommets along the axially extending portion of the opening and disposed in spaced relation along that portion of the opening extending diametrically across an end of the envelope to secure the folded strips in place.

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12

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