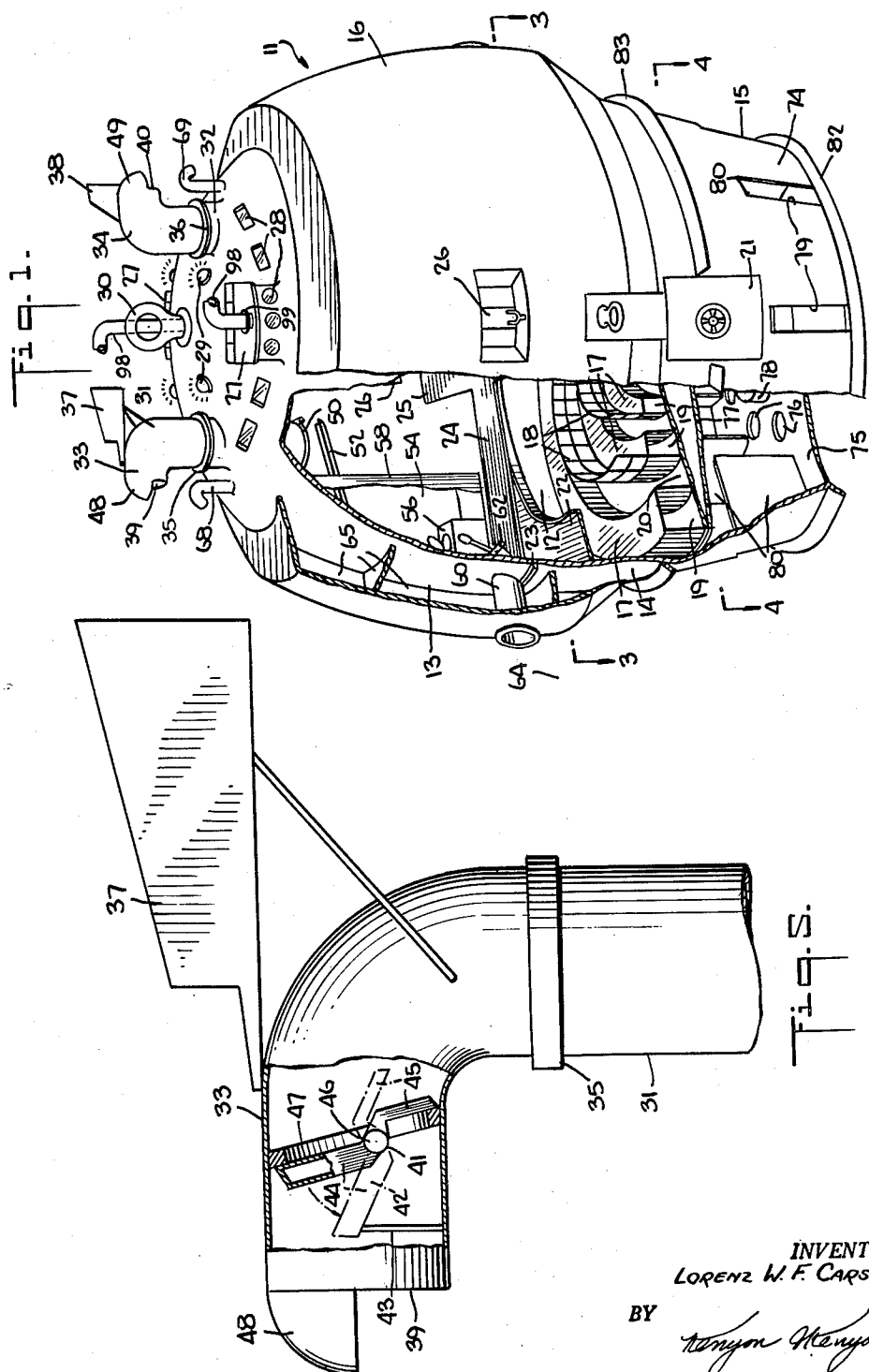


Filed June 8, 1959

LIFE GLOBE

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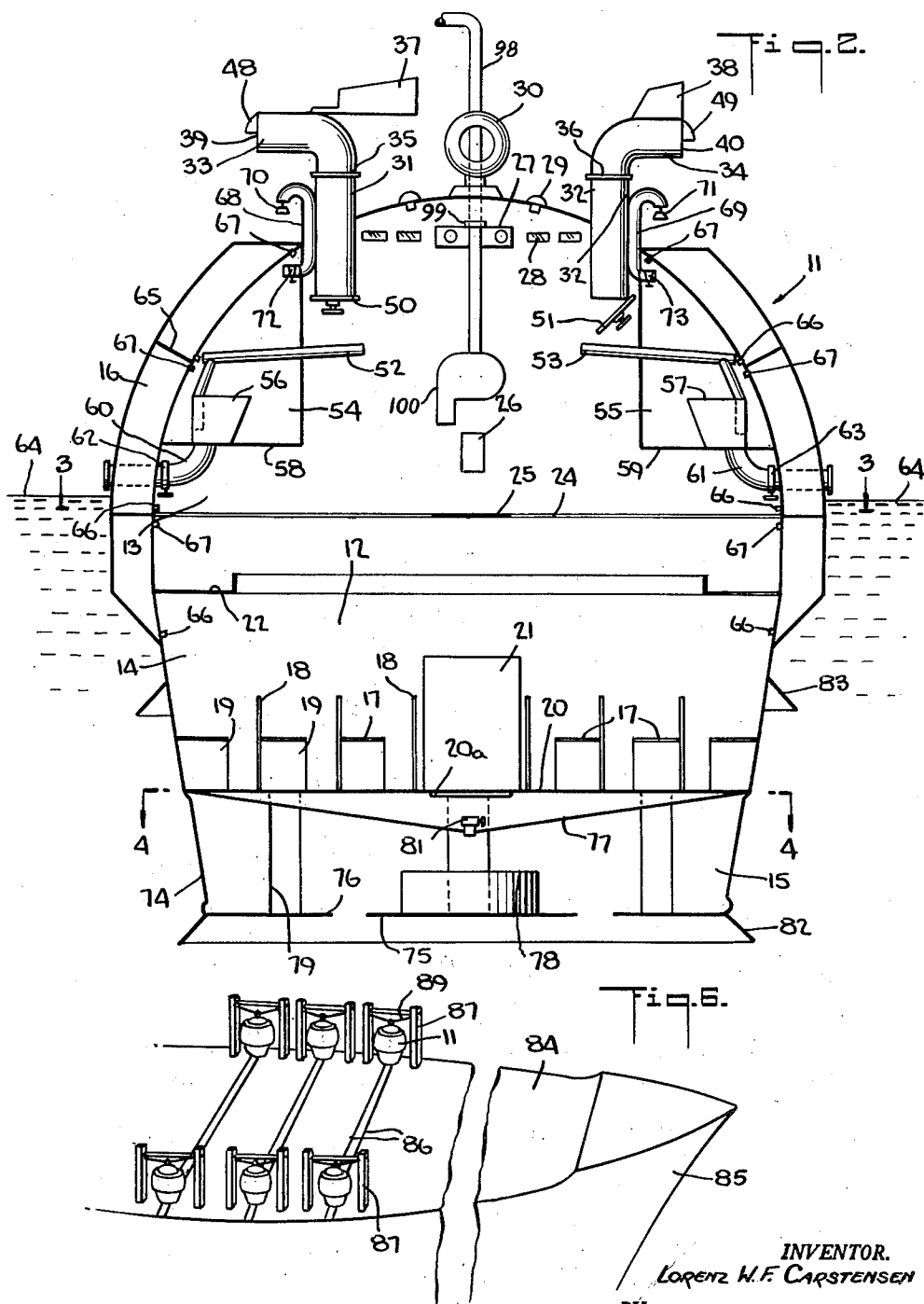
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Fig. 9.

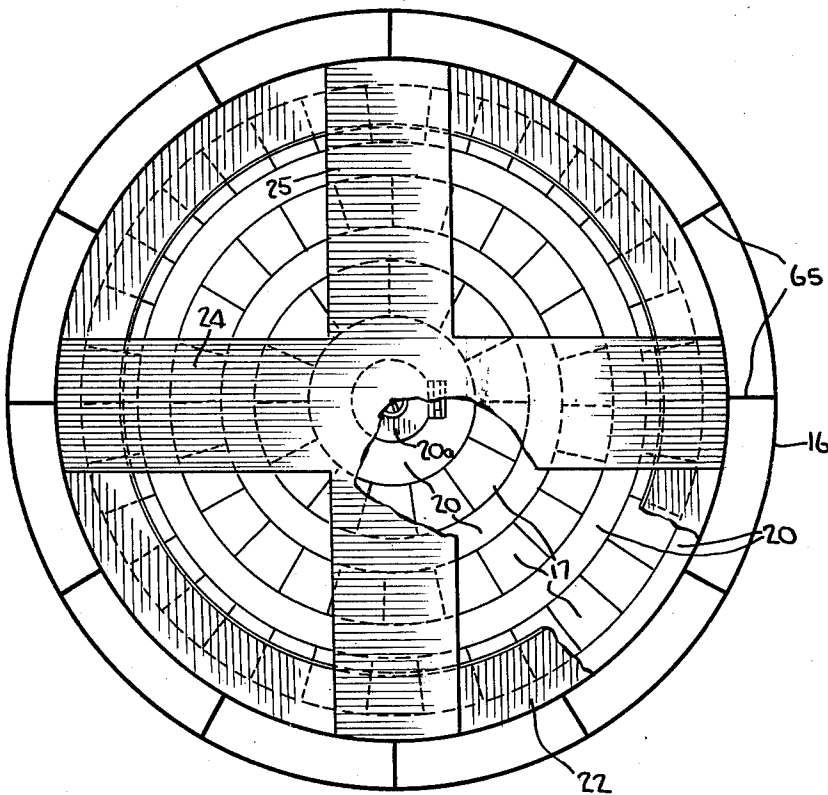
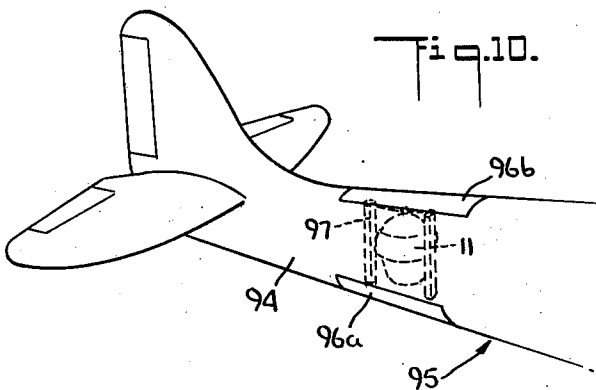


Fig. 10.



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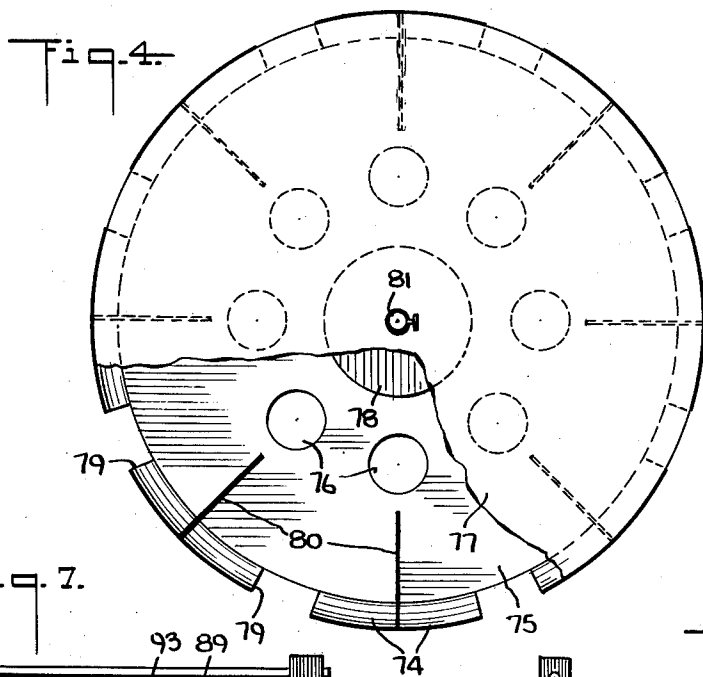
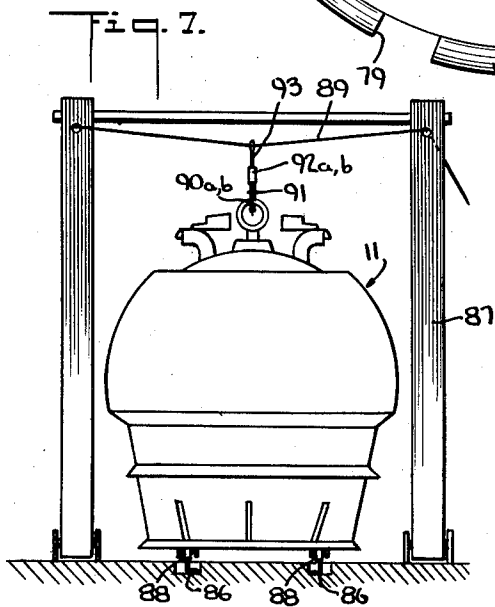
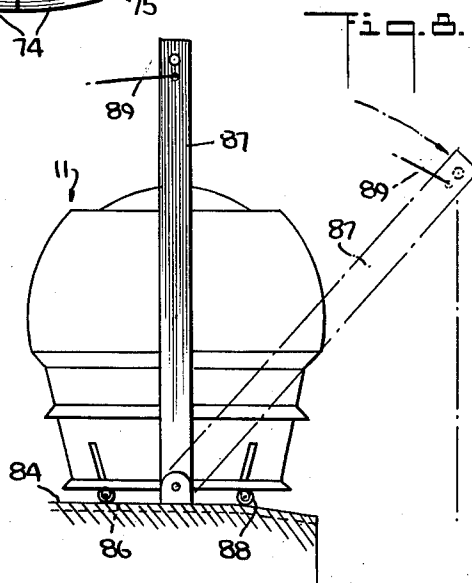
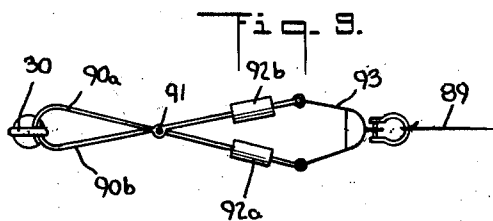
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LIFE GLOBE

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12 Claims. (Cl. 9—14)

This invention relates to life-saving apparatus to take the place of conventional lifeboats and liferafts on ocean-going ships, trans-oceanic airplanes, and the like. More particularly the invention relates to an enclosed buoy, or life globe in which a relatively large number of persons may be carried and maintained in safety until rescued from the sea upon abandoning the sinking ship or disabled airplane or similar vessel.

To abandon ship at sea in the event of disaster is, at best, a hazardous undertaking for passengers. Conventional life-boats which are lowered from the ship are usually of open construction, leaving passengers exposed to the elements and in danger of being washed overboard in high-running or breaking seas. Furthermore, because of its shape and construction, the conventional lifeboat is mounted on davits of the ship in a manner susceptible of fouling and of other causes of inoperation by the very same elements or factors of disaster which have necessitated operation of the lifeboat apparatus in the first instance. Even when operable, the usual davit mounting arrangement permits swaying movement of the lifeboat in response to the vicissitudes of the elements at the time when passengers are attempting to transfer thereaboard from the ship before the lifeboat is lowered. These and other inadequacies of present lifeboat construction tend to increase, rather than decrease, the hazards inherent in abandoning a ship at sea.

In the past, attempts to provide an enclosed construction for lifeboats, or similar life-saving apparatus, have met with little success. In most instances, all of the minimum requirements for such devices were not met, or the apparatus was impossible or difficult to carry on board a ship in a manner which would lend itself to simple, safe and efficient release from the ship in time of need.

Accordingly, the present invention is intended to provide life-saving apparatus, referred to as a life globe, in which passengers may be efficiently removed and safely carried clear of an ocean-going ship when abandoned at a time of emergency or disaster. Another object is to provide means whereby such a life globe may be safely loaded with passengers boarding from a deck of the ship and thereupon lowered into the sea without the difficulties which attend the same when conventional or other lifeboat means are used.

It is another object of the invention to provide such a life globe which may be of relatively light-weight construction suitable for carrying within a trans-oceanic airplane for release by parachute or otherwise in the event the airplane is downed at sea.

Lifeboats as well as enclosed life globe apparatus used heretofore have been susceptible to breaking-up upon striking turbulent water, such as a strong sea, when lowered thereinto. Even where the lifeboat is not so destroyed, the passengers and crew may be tossed violently at the time of sharp impact with the water, and control of the boat may be lost at such critical time. Accordingly, the present invention provides integral means for cushioning the effects of contact between the life globe and the water, thereby alleviating the referred-to difficulties.

Of course, the life globe is intended to be unsinkable and incapable of capsizing in the sea. The objects of the

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invention further include provision for adequate ventilation in the life globe, adequate passenger seating and emergency-ration storage facilities, and for signalling the presence and location of the life globe to searching rescue ships and planes. However, it is still another object to provide adequate toilet facilities in the enclosed life globe for the use of passengers, a feature not usually found or suitably provided in similar vessels.

Generally, the invention consists of a life globe which is circular in plan view and whose principal integral portions, or zones thereof, are a globe portion, a hull portion and a ballast portion. Together, the globe and hull portions form a watertight compartment for passengers, and the ballast portion extends therebelow. The globe portion is the uppermost zone of the life globe, extending about one-half the height of the entire vessel. The hull portion, immediately below the globe portion, accommodates most of the passengers. The ballast portion, aside from serving its function as a ballast compartment, provides other operational features of the life globe. Considered together, the hull portion and ballast portion has cross-sectional shape approximating that of a midship section of a conventional ocean-going ship.

On a level, watertight platform which is at the lowermost extremity of the hull portion, there is arranged in circular manner the bench-type seats for most of the passengers. The platform has a centrally located, watertight hatch for access to the ballast portion. Peripherally surrounding the uppermost extremity of the hull portion interior is a shelf for supplies, or for supporting stretchers in which injured passengers may be carried. A watertight side entrance door for passengers is provided through the wall of the hull portion.

An area in which fresh, potable water may be carried is formed immediately below the platform of the hull portion by a concave, conically shaped watertight top plate of the ballast portion. The shape of the top plate also assists in the operational functions of the ballast portion to be described. The ballast portion is essentially a peripherally extending skirt depending from the hull portion. It has a flat bottom plate on which may be supported a centrally located ballast container for fixed ballast of the vessel. The bottom plate also has spaced apart openings therein for admitting sea water at a restricted rate when the life globe is lowered into the sea. Together with a number of vertical openings through the peripheral walls which extend between the top and bottom plates, these bottom plate openings, as well as the conically shaped top plate, cause the ballast portion to provide a cushioning effect should the life globe be dropped from a height into the ocean. The semi-restricted passage of sea water through the ballast portion also tends to stabilize the vessel when floating in the sea. The ballast portion may also be provided with external surrounding bilge keels to diminish rolling of the vessel in the sea, and internal, radially extending vertical vanes to prevent excessive rotation or spinning of the life globe in the sea. A second peripherally extending bilge keel may be provided at a higher location such as at the middle of the hull portion height.

Cat walk grating extends in criss-cross fashion within the globe portion near its lower extremity, but at a suitable height above the peripheral shelf within the hull portion, the catwalk providing standing room for crew members who may serve as lookouts aboard the vessel. The lookouts peer through suitable portholes near the top of the life globe. Two toilets, which may be enclosed, are located within the globe portion, each attached to the interior walls of the life globe at an end of one of the catwalks. Suitable sewage disposal pipes, having valve apparatus, lead from the toilets out through the

walls of the vessel to the seat at a location above the load waterline. The globe portion has two watertight hatches for ingress and egress of passengers at the top of the vessel. In addition, two suitably-sized air ventilator pipes pass through the top of the globe portion, one ventilator for incoming air and the other for exhaust air. Each ventilator has a normally opened shutoff valve therewithin to prevent sea water from entering the vessel therethrough.

The life globe has ample buoyancy in itself to support its weight plus the passengers when fully loaded. However, a surrounding watertight air-tank jacket, which is internally subdivided, provides buoyancy for a special purpose to be described further on. The jacket extends peripherally from near the top of the vessel to within the zone of the hull portion, and is the principal protection for the vessel against sinking.

At the top of the life globe is a large ring bolt for hoisting the vessel. Ring bolts may also be provided at the sides for towing purposes. In addition, watertight oar ports may be formed in the side walls of the life globe so that oars may be projected outboard therethrough to be used to maneuver towards a rescue vessel. Several exterior dome lights at the top of the vessel are provided to assist in signalling the presence of the life globe to a rescue ship.

The life globe is carried on a ship supported on rollers mounted on rails located on an open deck. The life globe is suspended from the davit structure by cable means of the davit which include a pair of sister hooks of a type to be described, the sister hooks being connected through the ring bolt at the top of the life globe. The life globe will be launched into the sea outboard from either side of the ship.

Alternatively, the life globe may be carried aboard an airplane within, for example, the tail section thereof for release through a suitable opening at the bottom of the fuselage at a time when the plane is in distress over water. Of course, a parachute must be attached in the event of abandonment of the airplane from an altitude.

Where life globes are installed aboard ships in lieu of lifeboats, the mounting means may include rollers attached to the base of each life globe, and running on rails attached to the deck transversely thereof, for the movement of the life globes across the deck to either side of the ship. This is to enable any life globe to be launched alternately over either side depending on the listing of the ship. The deck at each side is notched, or cut away a short distance inboard to permit the rails to be bent and sloped downwardly at an angle to the horizontal so that the sister hooks and cable will take up the weight of the life globe as it descends the slope in its outboard progress. The tilt of the davit structure will allow the life globe to swing clear of the ship when being launched. The sister hook device, to be described, automatically releases the life globe from the davit structure to float free thereof in the water.

These and other objects and features of the invention will become more fully apparent by reference to the following detailed description thereof and by reference to the accompanying drawings in which:

FIGURE 1 is a perspective view, partially cut away, of a life globe built in accordance with the invention;

FIGURE 2 is a sectional elevation of the life globe of FIGURE 1;

FIGURE 3 is a plan view, partially cut away, of the hull portion of the life globe, taken at lines 3—3 in FIGURE 2;

FIGURE 4 is a plan view, partially cut away, of the ballast portion of the life globe, taken at lines 4—4 in FIGURE 2 which is below the level floor of the hull section.

FIGURE 5 is a sectional view showing in detail the butterfly valve arrangement within the ventilation means of the life globe.

FIGURE 6 is a perspective view of an installation arrangement for mounting the life globe, or several of them, aboard a ship;

FIGURE 7 is a front view of apparatus including a davit structure for mounting the life globe on the deck of a ship in condition ready for use;

FIGURE 8 is a side view of the davit structure and apparatus shown in FIGURE 7 to illustrate more of the details thereof;

FIGURE 9 is a view in elevation of a pair of sister hooks embodying automatic releasing means which may be incorporated when mounting the life globe within the davit structure shown in FIGURES 7 and 8; and

FIGURE 10 is a perspective view of the tail portion of an airplane fuselage to show how a life globe might be carried aboard an airplane.

Referring to the general arrangement as shown by FIGURES 1 and 2, a life globe 11 has a watertight passenger compartment 12 which is formed by a globe portion 13 and a hull portion 14. The life globe 11 also has an integral ballast portion 15 below the passenger compartment 12, and an air tank portion 16 which surrounds the passenger compartment 12. The entire life globe is constructed of steel or aluminum plating on a suitable metal framework, or entirely of fiberglass as that art is presently developed.

Referring more particularly to FIGURE 2, the hull portion 14 and ballast portion 15, considered as an integrated unit, has general cross-sectional shape approximating that of a mid-ship section of a conventional ocean-going ship. This shape imparted to these lower regions of the life globe 11 provides stability in the vessel and promotes seaworthy characteristics thereof to a greater degree than other shapes which have been used in the past in connection with life globes or life buoys having circular shape in plan view.

The hull portion 14 has a watertight flat bottom plate 20 on which are arranged in annular fashion the seats 17 for passengers. The seat arrangement is more clearly shown in FIGURE 3. Holding rails 18 for the passengers are provided in front of each row of seats, the rails preferably being found at the backs of the seats nearer the center, an additional holding rail 18 being provided centrally of the hull section for the convenience of passengers in the innermost row of seats. Supplies such as emergency rations, etc. may be stored in the spaces 19 below each of the rows of seats 17. A watertight hatchway 20a for access to the ballast portion therebelow is located centrally of the flat bottom plate 20.

While still in mounted position aboard a ship, passengers may board the life globe at the level of the flat bottom plate 20 in the hull portion 14 through a watertight door 21 provided in the wall of the hull section. Surrounding the interior at the upper region of the hull portion 14 is an annularly disposed shelf 22 which provides a convenient place for storage of additional supplies. The shelf 22 should be made wide enough to accommodate passengers who are injured and carried aboard on stretchers. The watertight entrance door 21 provides a convenient means for carrying stretcher cases aboard the life globe, and the shelf 22 provides a convenient place where these cases may be situated thereaboard without taking up seating capacity in the vessel.

The globe portion 13 is disposed above the hull portion 14. At the lowermost region of the globe portion 13 two catwalks 24 and 25 span the interior diameter, the catwalks arranged in criss-cross fashion. Members of the crew such as lookouts, etc., are stationed in the globe portion 13, and the catwalks 24 and 25 provide working space for them. The catwalks 24 and 25 also serve as a place from which oars (not shown) may be operated when projected through watertight oar ports 26 in the walls of the globe portion 13. In a life globe having a diameter of about 16 feet and a height of about

18 feet, the globe portion would extend to about 8 feet below the top of the globe, and the hull portion would be about 7 feet high. The catwalks 24 and 25 should each be about 3 feet wide.

At the top of the globe portion there are two watertight hatches 27 through which passengers may either enter into or emerge from the life globe. Portholes 28 are located in the peripheral walls of the globe portion to provide means for viewing the entire horizon. Emergency dome lights 29, about 4 in number, are located at the top of the globe portion for signalling purposes. Suitable watertight openings (not shown) may be provided through which other distress flares or rockets may project. The heavy ring bolt 30 is firmly attached at the top of the life globe and is used for launching or hoisting the life globe 11.

An air intake ventilator 31 and an air exhaust ventilator 32 extend into the life globe through the wall of the globe portion 13 near the top thereof. Each ventilator 31 and 32 has a cowl portion 33 and 34, respectively, which is rotatable on a watertight ballbearing arrangement 35 and 36, respectively. The air intake ventilator 31 has a weathervane 37 which is arranged and constructed so that the air inlet opening 39 of this ventilator will always be faced into the wind by natural movement thereof. Similarly, the air exhaust ventilator 32 has a weathervane 38 which is arranged and constructed to keep the air exhaust opening 40 of this ventilator faced away from the wind under normal conditions. In a life globe of the size described, each of these ventilators should be about 1 foot in diameter.

As more clearly shown in FIGURE 5, each of the ventilators 31 and 32 has an unbalanced butterfly valve 41 which will be normally in opened position to allow entrance of air in the one case and exhaust of air in the other. The butterfly valve 41 rests in a slightly inclined horizontal position, as shown by the dotted line 42 of FIGURE 5, and it is held in this position by a stopper peg 43. The upper part 44 of the valve 41 is made heavier than the lower part 45 to cause the valve to remain in its normally opened position. The valve 41 is rotatable about the horizontal axle 46 which may be located slightly below the center line of the ventilator as shown. The upper part 44 of the valve is hollowed to provide a watertight air space therewithin which imparts buoyancy to this half of the valve. The buoyancy of this part, together with its larger area, will cause the valve to close when sea water attempts to penetrate into the life globe 11 through either ventilator 31, 32. The slight horizontal incline of the valve 41 in its normally opened position 42 assists in causing the valve to close by assuring that the sea water strikes the underside of the upper part 44. When the valve has been closed by sea water, the valve parts 44 and 45 become seated against the inclined ring stop 47 which may be made of rubber or the like to promote a watertight seal. The incline of the stop 47 causes the valve to open quickly when sea water has been dissipated. Each of the cowls 33 and 34 has a hood 48 and 49, respectively, extending over the openings 39 and 40 so as to further assist the action of the sea water in closing the valve 41 by directing the force against the underside of the upper part 44 of the valve. Each air opening 39, 40 is faced with a grid arrangement (not shown) to prevent floatsam and the like from entering into either of the ventilators 31 and 32. In the interior of the globe portion 13, each ventilator 31 and 32 has a hinged watertight cover plate 50 and 51, respectively, for emergency closing of either ventilator. To carry off any sea water which may enter the life globe 11 through the ventilators 31, 32, spillways 52 and 53 are positioned, respectively, immediately below each of the ventilators 31 and 32. Two toilet vents 68 and 69 pass through the top of the globe portion 13 as indicated in FIGURE 2. The vents have suitable

float shut-off valves 70 and 71 as well as interior located main shut-off valves 72 and 73.

Life globe 11 has toilet facilities 54 and 55 for the passengers. There are two toilet facilities, each located at an opposite end of one of the catwalks 24. Suitable commodes 56 and 57 are supported within enclosures 58 and 59, respectively. The spillways 52 and 53 drain into the respective commodes 56 and 57, as shown more clearly in FIGURE 2. The enclosures 58 and 59 are of usual metal bulkhead construction. Beneath each of the commodes 56 and 57 is a sewage drain 60 and 61, respectively, each of the drains being equipped with a shut-off valve 62 and 63. The drains 60 and 61 may also have a scupper flap valve (not shown), located outboard of the shut-off valves 62 and 63, to prevent entrance of sea water. Sewage drains 60 and 61 discharge outboard of the life globe 11 at a location above the load waterline 64 of the vessel. The drainage from the spillways 52 and 53 assists in flushing the commodes 56 and 57.

In the event of interference with the functioning of the primary ventilators 31 and 32 as, for example, where external icing conditions have caused a sealing-off of the primary ventilators, there may be provided emergency air intake by means of a snorkel tube arrangement 98 through watertight plug openings 99 located in the covers of the two watertight hatches 27. The snorkel tubes can be extended to any reasonable height above a surging sea and connected with a portable air-pump 100 for intake, one tube acting as intake and the other, for exhaust.

The air tank portion 16 of the life globe 11 completely surrounds the life globe and extends in vertical height from near the top of the globe portion 13 to a location within the region of the hull portion below the line of juncture of the globe and hull portions as indicated by the means 23. The air tank portion 16 is about 1 foot in width and 10 feet in height in a life globe having a diameter of about 16 feet and a height of about 18 feet. The air tank portion 16 is watertight, and is subdivided into a number of separate compartments, about 36 in all, by vertical and horizontal subdivision means 65 for obvious safety reasons. Each of the subdivided compartments may be checked for air tightness from the inside of the vessel by means of water drainage pet cocks 66 at the bottom of each compartment and air inlet plugs 67 at the tops thereof. If leakage is discovered in any separate air chamber, the pet cock 66 would be closed and the upper plug 67 removed, whereupon a portable air pump may be connected by a hose to the plug seat to place the chamber under pressure to expel the leakage or prevent continued leakage.

The ballast portion 15 has a novel construction to provide a cushioning effect upon impact of the life globe with the water when being launched. It is essentially in the form of a peripheral skirt 74, depending from the hull portion 14, with a bottom plate 75 having water passages 76 therein. The ballast portion 15 also has a concave, conically shaped, watertight top plate 77 immediately below the bottom plate 20 of the hull portion 14, as more clearly appears in FIGURE 2. Attached to the bottom plate 75 within the hollow ballast portion 15 is a container 78 for fixed ballast. The skirt 74 has vertical openings 79 disposed about its periphery, each opening 79 extending the height of the ballast portion 15. Vertical vanes 80 are also located within the ballast portion 15, these extending radially from the skirt 74 to a location about midway across the radius of the bottom plate 75. A suitable valve 81 is located centrally of the top plate 77 for drainage of the space between top plate 77 and bottom plate 20 of the hull portion 14.

In a life globe of the size previously described, the ballast portion should be about 3 feet in height. About eight openings, each 18 inches in diameter, are formed in the bottom plate, and about eight vertical openings, each about 1 foot wide, are formed in the skirt of the

ballast portion. The fixed ballast container would be about 1 foot high and 3½ feet in diameter.

Fresh water for passengers may be carried within the watertight space provided between bottom plate 20 of hull portion 14 and the top plate 77 of the ballast portion 15. Suitable hand pumping or similar apparatus (not shown) should be provided.

At the time of launching, and of necessity caused by the pending emergency, life globe 11 may be dropped from a considerable height such as 20 feet, for example. Upon striking the water, the bottom plate 75 of the ballast portion will absorb a considerable portion of the initial force of impact. This is because sea water will immediately begin to enter the ballast portion in semi-restricted manner, through the water passages 76 and through the lowermost regions of the vertical openings 79. Entrapped air within the ballast portion 15 will begin to escape through the vertical openings 79 near the uppermost regions of these openings. The conical shape of the top plate 77 will further cushion the impact of the life globe upon the water by deflecting the water which enters the ballast portion 15. It is seen that the several features of the ballast portion 15 cushion the impact of the life globe 11 upon the water by restricting the flow of water into the ballast portion 15, thereby diminishing the rate of filling of that portion.

The life globe 11 may have two peripherally extending bilge keels 82 and 83, to impart additional stability to the vessel when in the sea. The bilge keel 82 surrounds the ballast portion 15 extending from the bottom thereof, and the bilge keel 83 is located in the region of the hull section, as more clearly appears in the drawings. The life globe 11 may also be provided with exterior ring bolts around its perimeter for towing purposes, in the manner shown on FIGURE 1, and also exterior ladders, railing handrails, and etc. (not shown) for obvious purposes.

In FIGURE 6, a general arrangement for mounting several life globes 11 on the deck 84 of a ship 85 is shown. Rails 86 are attached to the deck 84 to permit the life globe to be moved transversely across the deck 84 to either side of the ship. Details of the davit structure 87 and the manner of launching the life globe 11 are shown in FIGURES 7 and 8. The deck 84 at the extreme sides of the ship is notched, as more clearly shown in FIGURE 8. The rails 86 are angulated downwardly (within the notch) toward the side of the deck for launching purposes. When the life globe 11 is to be launched over the side of the ship, the ring bolt 30 at the top of the life globe will be brought in line with the davit structure. The lowering cable 89 with its sister hooks 90 are already attached to the davit structure 87. The sister hooks 90 are then attached to the ring bolt 30 and cable slack is taken up and as the life globe is moved slowly outboard and descends the slanting rails, the full strain and weight of the life globe being on the cable. Any farther movement outboard of the life globe brings the davit structure into play and will incline the davit structure outboard to about 45 degrees against a stop (not shown) whereupon the cable can be eased away thus launching the life globe. No motor power is needed for launching. Gravity will take over as soon as the davit structure gets off vertical dead center, swinging the davit structure gradually out to 45 degrees inclination whereupon lowering away of the life globe is accomplished by gravity. Suitable restraint of the davit structure is provided by manual control through a windlass and ratchet mechanism.

The davit structure 87 has operable cable means 89 from which the life globe 11 is suspended. The cable means 89 are lowered away in usual fashion when the life globe is launched. It is preferred that the life globe 11 be connected to the cable means 89 by the self-acting releasing device shown in FIGURE 9. This device is essentially a pair of sister hooks 90a and 90b which

pass through the ring bolt 30 from either side thereof at the top of the life globe 11. The sister hooks 90a and 90b are connected for pivotal movement at pivot point 91. Weights 92a and 92b are attached to the shaft of each sister hook, as shown. A saddle 93 connects the two open ends of the sister hooks and provides the means for suspending the device from the cable means 89. The weight of the life globe when suspended will hold the sister hooks in closed position. After the life globe 11 has been lowered into the water and is floating therein, the slack in the cable means 89 will cause a slacking of the saddle 93, whereupon the weights 92a and 92b will drop by gravity, causing the sister hooks 90a and 90b to open so as to release the life globe automatically. The life globe will then float free and clear of the ship.

Should a disaster cause the ship to sink rapidly, either before or after passengers are aboard the life globe, the automatic releasing means will effect detachment of the globe from its mounting, permitting it to float free and clear of the ship for later boarding by distressed persons swimming in the water. When the several access openings in the life globe are closed, as normally they should be, the globe will have sufficient buoyancy to eventually overcome any downward suction caused by the sinking ship, and its metal construction will provide strength to resist crushing by water pressure at depths to which it might be initially dragged by such suction. In any event, the life globe will bob up to the surface for use, having been automatically released from its mounting. The same features render the life globe an extremely effective life-saving apparatus in cases where the vessel might be dropped from a considerable height, either by accident during the disaster or intentionally when time may be of the essence. The novel ballast portion will cushion the impact of the life globe on the water. Conventional lifeboats ordinarily cannot withstand such abuse, and would, in any event, emerge in the sea in a swamped condition.

When the life globe is floating in the sea, the inertia of water passing into and out of the ballast portion 15 in semi-restricted manner through openings 76 and 79 therein, will tend to stabilize the vessel. The water moving through the ballast portion 15 will impinge upon the vertical vanes 80, whereupon, it will be noted, the vanes 80 tend to diminish any spinning movement which might be imparted to the vessel by the sea. When the life globe is to be hoisted out of the water, the novel ballast portion construction permits emptying of the water ballast compartment which is thereby provided, whereupon hoisting becomes easier.

The life globe construction may include features which, for clarity, are not shown on the drawings. For example, manually or electrically operated pumping means may be provided for pumping air into the passenger compartment 12 through emergency air inlet and exhaust snorkel tubes (not shown) extending through the two watertight plug openings (not shown) located in the covers of the two watertight hatches 27. A hose connection, with appropriate manual or electric pumping apparatus, may be provided through the side wall of the vessel for pumping in sea water as a primary means for flushing the toilet commodes 56 and 57.

It is further intended that the air tank portion 16 shall have air capacity sufficient to cause the life globe to float even at a time when the passenger carrying compartment 12 may be flooded. Thus, victims may hang on to the flooded but floating vessel if need be.

Thus, a very novel and useful life globe has been invented to replace conventional lifeboats on ocean-going ships.

As shown by FIGURE 10, the globe is also useful in airplanes where it may be released by parachute or otherwise in the event of emergency abandoning of the air-

plane over the sea. The fuselage 94 of an airplane 95 is equipped with bay-type doors 96a formed in its underside. The life globe 11 is mounted by suitable means 97 therewithin, the means 97 being similar to the davit structure 87 previously described. Suitable parachute means (not shown) might be attached to life globe 11 to permit its release from an altitude. Should the airplane be forced to land at sea, the tail section of the plane will normally extend out of the sea permitting the life globe 11 to be dropped therefrom into the water. The ballast portion 15 will cushion its landing. At the same time, a bay-type door 96b might be provided in the fuselage above the life globe to permit release thereof in upward direction from the fuselage in the event the plane has submerged. Thus, a life globe of the type described provides a novel life-saving apparatus to be carried aboard trans-oceanic airplanes.

It will be understood that the invention is not limited to the specific embodiment or size thereof described but encompasses equivalent apparatus, and modified forms of the invention which might be made by those having skill in the art.

What is claimed is:

1. A life globe floatable in water comprising a watertight compartment portion for carrying passengers therewithin and a ballast portion therebelow, said ballast portion comprising a skirt depending from said compartment portion and having entrance means for said water at the bottom thereof, said skirt having spaced apart vertical openings formed therein around the periphery thereof and extending substantially from the top to the bottom of said skirt.

2. A life globe floatable in water comprising a watertight compartment portion for carrying passengers therewithin and a ballast portion therebelow, said ballast portion comprising a skirt depending from substantially the periphery of said compartment portion and a bottom plate, said bottom plate having an opening formed therein for passage of said water into said ballast portion, said skirt having spaced apart vertical openings formed therein around the periphery thereof and extending from the top to the bottom of said skirt.

3. A life globe floatable in water comprising a watertight compartment portion for carrying passengers therewithin and a ballast portion therebelow, said ballast portion comprising a skirt depending from substantially the periphery of said compartment portion and a bottom plate, said bottom plate having an opening formed therein for passage of said water into said ballast portion, said skirt having spaced apart vertical openings formed therein around the periphery thereof and extending from the top to the bottom of said skirt, and a fixed ballast container of said life globe within said ballast portion attached to said bottom plate centrally thereof.

4. A life globe floatable in water comprising a watertight compartment portion for carrying passengers therewithin and a ballast portion therebelow, said compartment portion having a flat bottom plate, and said ballast portion comprising a concave conical top plate underlying said flat bottom plate of the compartment portion, a skirt depending from substantially the periphery of said compartment portion, and a flat bottom plate having spaced apart openings formed therein for passage of said water into said ballast portion, said skirt having spaced apart vertical openings formed therein around the periphery thereof and extending from the top to the bottom of said skirt.

5. A life globe floatable in water comprising a watertight compartment portion for carrying passengers therewithin and a ballast portion therebelow, said ballast portion comprising a skirt depending from substantially the periphery of said compartment portion and a bottom plate, said bottom plate having an opening formed therein for passage of said water into said ballast portion, said skirt having spaced apart vertical openings formed

therein around the periphery thereof and extending from the top to the bottom of said skirt, and said ballast portion having interior located radially extending vertical vanes.

6. A life globe floatable in water comprising a watertight compartment portion for carrying passengers therewithin and a ballast portion therebelow, said compartment portion having a flat bottom plate, and said ballast portion comprising a concave conical top plate underlying said flat bottom plate of the compartment portion, a skirt depending from substantially the periphery of said compartment portion, and a flat bottom plate having spaced apart openings formed therein for passage of said water into said ballast portion, said skirt having spaced apart vertical openings formed therein around the periphery thereof and extending from the top to the bottom of said skirt, and said life globe having peripherally extending exterior located bilge keels at the bottom of said ballast portion and within the zone of said compartment portion.

7. A life globe floatable in water and having a circular shape in plan view comprising a globe portion, a hull portion below said globe portion, a ballast portion below said hull portion, said globe portion and said hull portion together forming a watertight compartment for carrying passengers therewithin, an air tank portion exterior of and surrounding said globe portion, and an air intake ventilator and an air exhaust ventilator each passing through the top of said globe portion, each of said ventilators having an exterior rotatable cowl and weather-vane means for natural directing of the intake opening of said intake ventilator into the wind and of the exhaust opening of said exhaust ventilator away from the wind and a normally opened butterfly valve having a hollowed portion above its horizontal axis of rotation, said butterfly valve arranged and constructed to close momentarily at a time when said water would enter said life globe through said ventilator.

8. A life globe floatable in water and having a circular shape in plan view comprising a globe portion, a hull portion below said globe portion, a ballast portion below said hull portion, said globe portion and said hull portion together forming a watertight compartment for carrying passengers therewithin, and an air tank portion exterior of and surrounding said life globe and extending in vertical height from near the top of said globe portion to a location below the peripheral line of juncture between said globe portion and said hull portion, said ballast portion comprising a peripherally disposed skirt depending from substantially the periphery of said hull portion and a flat bottom plate having spaced apart openings formed therein for passage of said water into said ballast portion, said skirt having spaced apart vertical openings formed therein around the periphery thereof and extending from the top to the bottom of said skirt.

9. A life globe floatable in water and having a circular shape in plan view comprising a globe portion, a hull portion below said globe portion, a ballast portion below said hull portion, said globe portion and said hull portion together forming a watertight compartment for carrying passengers therewithin, and an air tank portion exterior of and surrounding said life globe and extending in vertical height from near the top of said globe portion to a location below the peripheral line of juncture between said globe portion and said hull portion, said air tank portion having internal means for subdividing the same vertically and horizontally into separate watertight air compartments, said hull portion having a watertight flat bottom plate, annularly arranged seating for said passengers attached to said bottom plate, a watertight passenger entrance door in the wall of said hull portion, and a peripherally extending shelf attached to said wall near the top of said hull portion, said globe portion having two interior catwalks each extending across the diameter thereof disposed in criss-cross relation one to the

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other, toilet means for passengers at each end of one of said catwalks, and an air intake and an air exhaust ventilator each passing through the top of said globe portion, and said ballast portion depending from said hull portion and having means formed therein for the passage of said water therethrough in semi-restricted manner.

10. A life globe floatable in water and having a circular shape in plan view comprising a globe portion, a hull portion below said globe portion, a ballast portion below said hull portion, said globe portion and said hull portion together forming a watertight compartment for carrying passengers therewithin, and an air intake ventilator and an air exhaust ventilator each passing through the top of said globe portion, each of said ventilators having an exterior rotatable cowl and weathervane means for natural directing of the intake opening of said intake ventilator into the wind and of the exhaust opening of said exhaust ventilator away from the wind and a normally opened butterfly valve in each of said ventilators, said openings facing substantially unidirectionally into and away from the wind, respectively, and said butterfly valves being disposed adjacent said openings and being adapted to be closed automatically upon a wave washing thereagainst and being self-opening upon recession of the wave.

11. A life globe according to claim 10 which comprises, in addition to said intake and exhaust ventilators, means for pumping air into said life globe from the exterior atmosphere with return of exhaust air from said globe to said atmosphere, by means of snorkel tube ex-

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tensions through plug openings located in each cover of two watertight hatches in the top of said life globe.

12. A life globe according to claim 10, which comprises toilet means for passengers within said life globe, sewage drainage means for said toilet means leading to discharge outboard of said life globe at a location above the load waterline thereof, and drainage means for draining any water emerging from the inner ends of said air intake and air exhaust ventilators into said toilet means.

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