

969,020.

F. WOODS.
LIFE BUOY.

APPLICATION FILED JULY 7, 1909.

Patented Aug. 30, 1910.

3 SHEETS-SHEET 1.

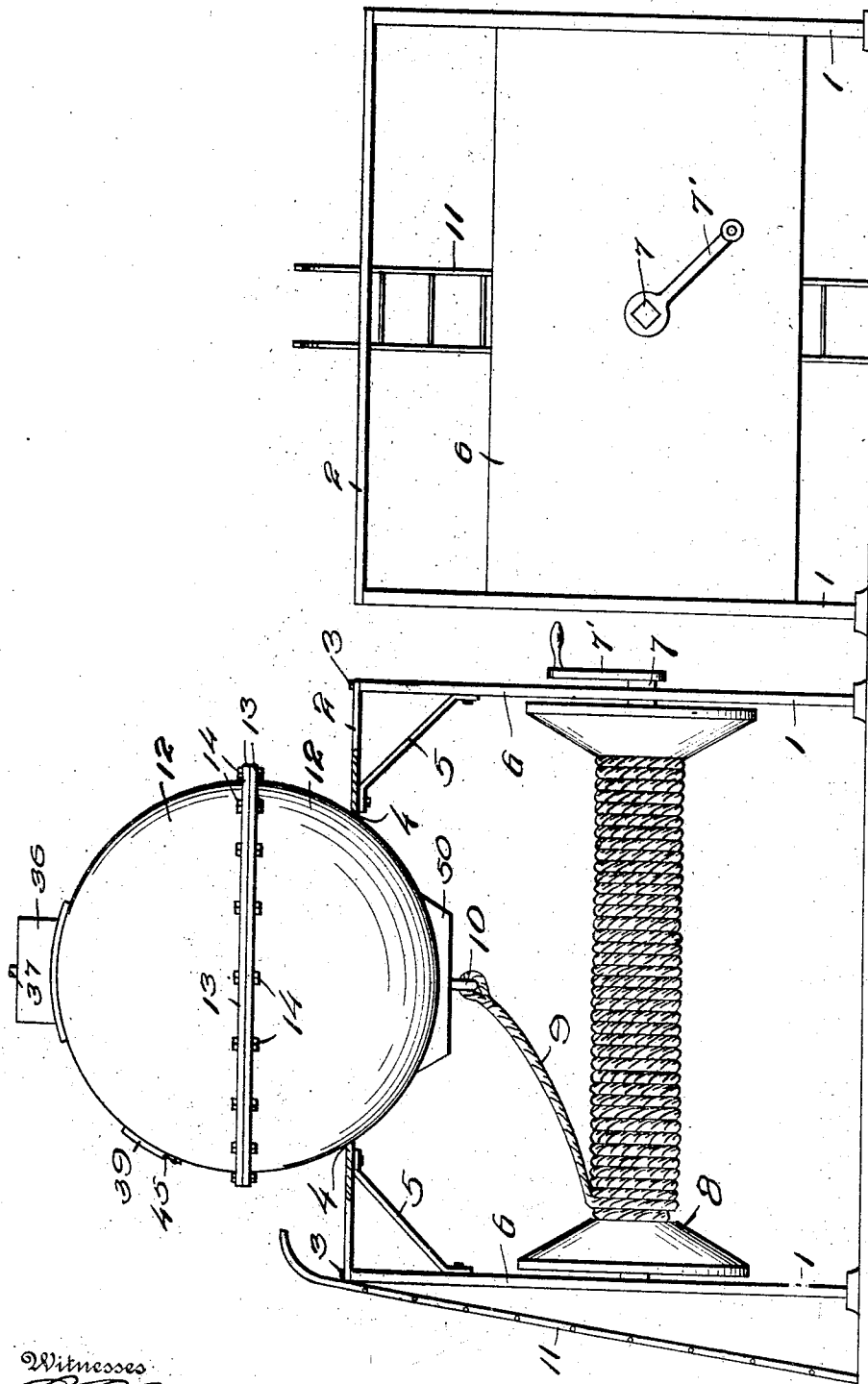


FIG. 8.

FIG. 1.

Inventor

Witnesses
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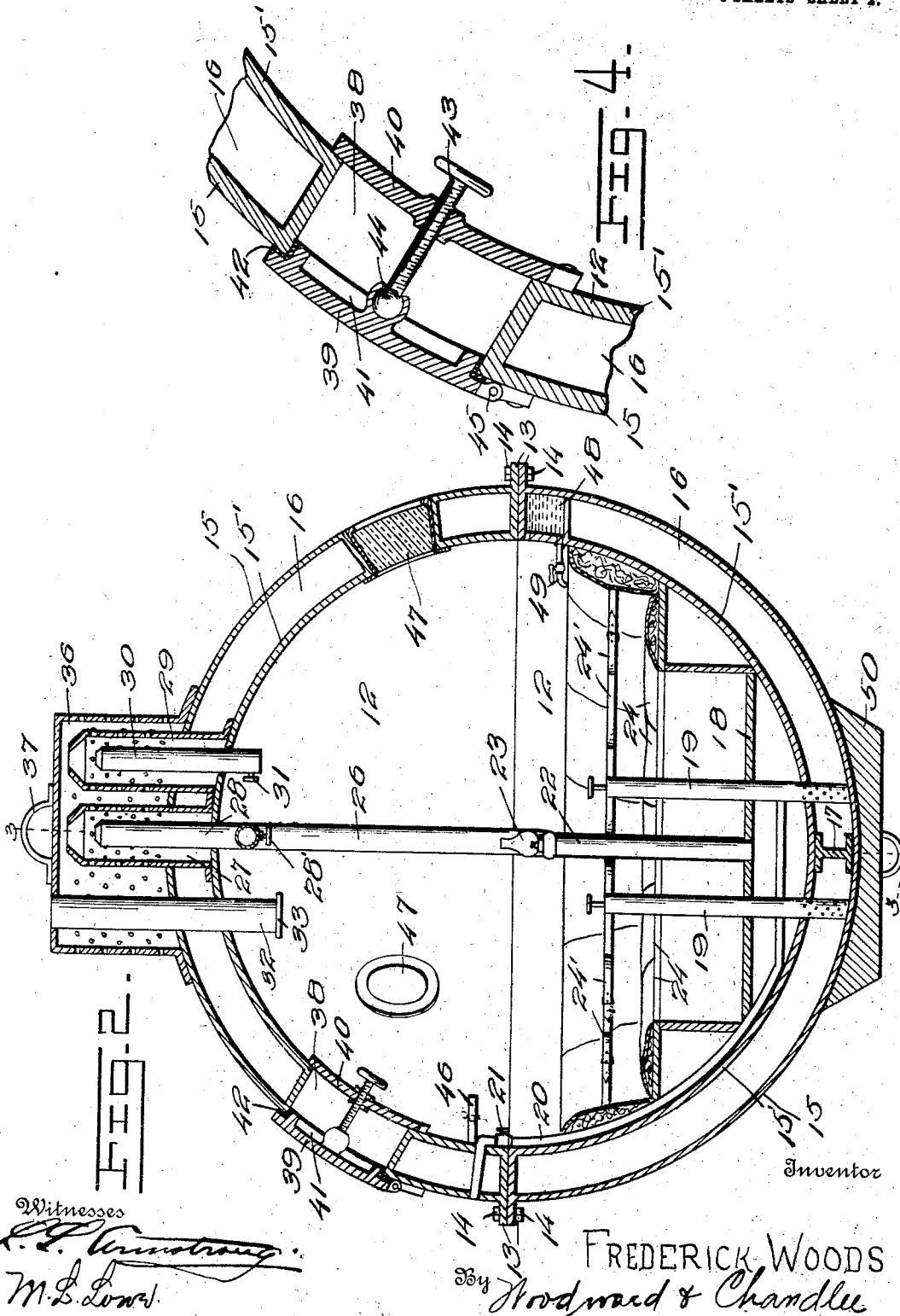
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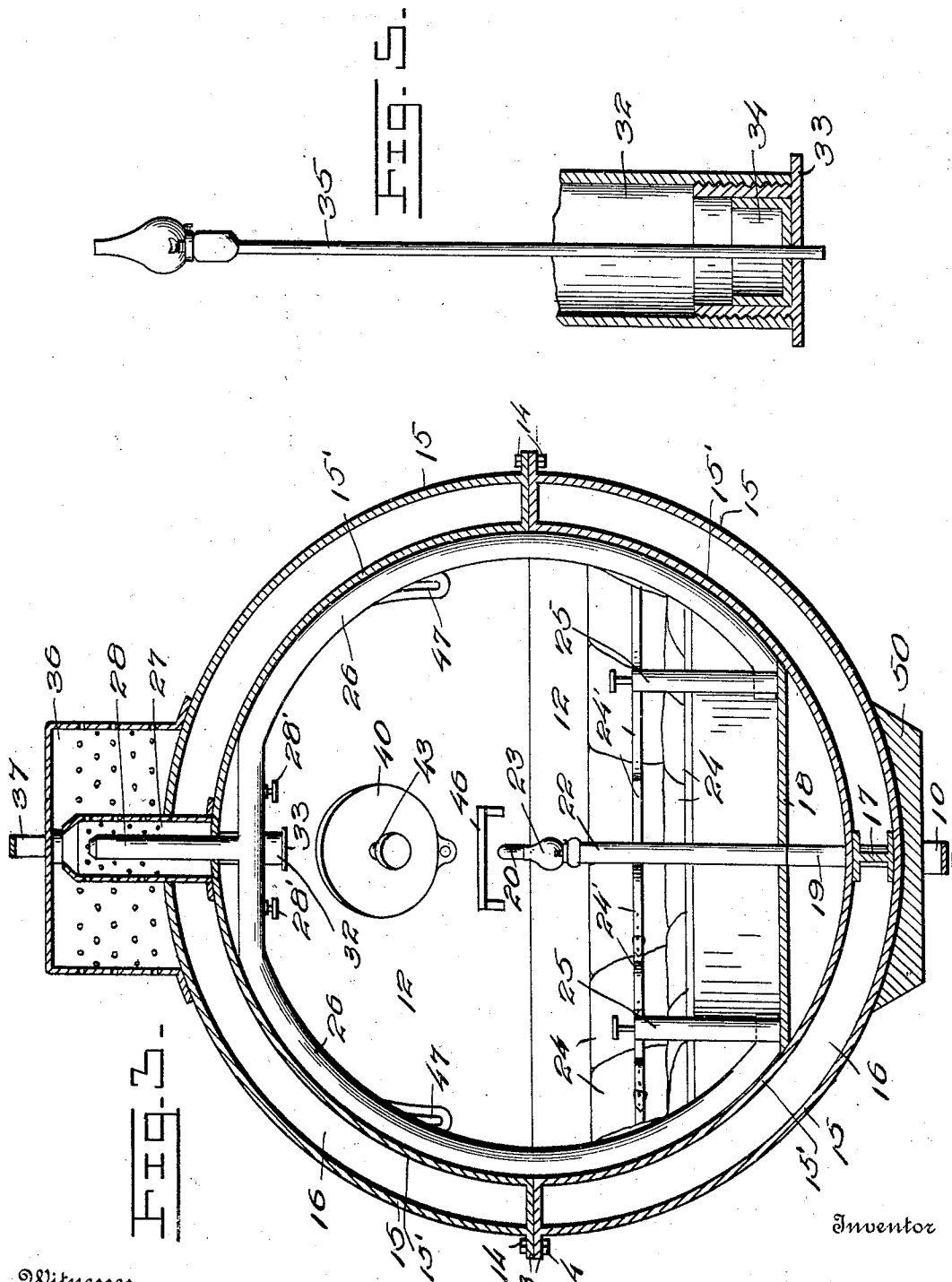
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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LIFE-BUOY.

969,020.

Specification of Letters Patent.

Patented Aug. 30, 1910.

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To all whom it may concern:

Be it known that I, FREDERICK WOODS, a citizen of the United States, residing at Lakewood, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Life-Buoys, of which the following is a specification.

This invention relates to new and useful improvements in life buoys and is designed to be carried upon ships or other passenger vessels and to replace the life boats as at present employed.

The object of my invention is to provide a device of this character, which is so mounted and supported upon the deck of the vessel that it may be very quickly launched therefrom in cases of emergency or disaster.

Another object is to provide a life buoy of spherical construction and having suitable air chambers to give it the required buoyancy, thus obviating the liability of the same being sunk during storms.

A further object is to provide a life buoy having an air-tight entrance port, and means operable from within, whereby pure air may be allowed to enter the buoy, and the vitiated air exhausted therefrom.

A still further object is to provide suitable means by which distress signals may be displayed from the buoy, suitable water pumps being provided by means of which any water which may enter the interior of the same may be rapidly pumped therefrom.

With these and other objects in view, the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claims, it being understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a part of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevation of my improved life buoy, showing the same mounted upon the deck of a vessel, Fig. 2 is an enlarged vertical section through the life buoy, Fig. 3 is a similar view taken on the line 3-3 of Fig. 2, Fig. 4 is an enlarged fragmentary section showing the means employed to close the entrance port, Fig. 5 is

an enlarged detail section of the signal supporting tube, Fig. 6 is an end view of the buoy support.

The life boat is spherical in form and is supported upon the deck of a vessel by a suitable frame as shown in Fig. 1 of the drawings. This frame comprises the four vertical posts or standards 1, upon the upper ends of which a plate 2 is secured and clamped thereon by means of suitable clamping nuts 3. The plate 2 is formed with a central circular opening 4, which receives the spherical life buoy, the detail of construction of which will be later set forth. Suitable rods 5 are secured to the standards 1 on either side of the plate 2. The supporting frame is square in plan, and upon opposite sides thereof a transverse plate 6 is secured to the standards 1. A shaft 7 extends centrally through this plate and has secured thereto between the plates 6 a suitable reel 8 upon which the cable 9 is wound. One end of the shaft 7 is provided with a suitable operating handle 7', by means of which the reel may be operated. One end of the cable 9 is secured to a staple fixed in the bottom of the life buoy, the other end thereof being secured to the reel 8. A stairway 11 is secured to one side of the supporting frame, by means of which passengers may ascend to the top of the frame and enter the life buoy. Having thus described the manner in which the life buoy is supported upon the deck of the vessel, the detailed construction of the same will now be set forth.

The life buoy comprises the two semi-spherical sections 12, each of which is provided with an exterior peripheral flange 13, by means of which the sections are connected and secured together, suitable clamping bolts 14 being employed for this purpose. The sections 12 each comprise the concentrically arranged inner and outer shells 15 and 15' respectively, an air space 16 being thus provided by means of which the required buoyancy is secured. The shells are sustained in spaced relation by means of a semi-circular eye-beam 17, which is secured between the shells. A base or floor 18 is secured in the lower section, and suitable water pumps 19 extend through the same and communicate with the air space 16 between the shells. A pipe 20 communicates with each of the pumps 19 and extends up-

wardly in parallel relation with the inner surface of the sections and is extended through the shells of the upper section to the exterior of the life buoy. A cut-off valve 21 is arranged in the pipe 20 and is adapted to prevent the entrance of water through the same which might occur in a high sea. A support 22 is centrally arranged in the floor 18 and has secured to its upper end the illuminating lamp 23. Circularly arranged upon the inner shell of the bottom section are the seats 24, straps 24' being secured to the backs thereof by means of which the passengers may be held in the seats during the rolling or pitching of the life buoy. Air pumps 25 are also supported upon the floor 18, adjacent to the seats 24, and have the air pipes 26 connected thereto. A housing 27 extends exteriorly of the upper section and is provided with a plurality of perforations through which the air is admitted. Within this tube the upper end of the air pipe 28 is disposed, and cut-off valves 28' are located therein, whereby the supply of fresh air may be regulated. A second housing 29, similar to the housing 27 also extends through the upper section and an exhaust pipe 30 is located therein. A valve 31 is located in the pipe 30 whereby the foul or vitiated air may be exhausted from the interior of the life buoy.

A tube 32 extends through the top of the life buoy, adjacent to the tubes 27 and 29, and has the closure cap 33 threaded into the end thereof. Through this tube 32 a flag or lamp may be extended, as a signal of distress, and is supported therein by means of the ferrule 34, secured to the standard 35, and disposed within the cap 33. A dome 36 is secured to the exterior of the upper section, and is arranged to cover the various tubes extending therethrough. The lower portion of this dome is perforated, to allow of the free entrance of the air to the tube 27. An opening is, of course, provided in the top of the dome 36, through which the signal is extended. A bail 37 is secured to the top of the dome, in which the end of a chain or cable is hooked when it is desired to elevate the life buoy to the deck of the vessel.

An entrance opening 38 is provided upon one side of the upper section, and closure plates 39 and 40 are pivoted upon the outer and inner shells respectively. Upon the underside of the outer plate 39 an annular flange 41 is formed. A washer or gasket 42 is secured to the outer edge of this flange and extends between the plates 39 and the edge of the entrance opening 38. The washer 42 is formed of any suitable waterproof material and forms an air-tight closure for the opening 38, so that the entrance of water therethrough will be effectually prevented. A screw threaded rod 43 extends centrally through the plate 40 and is

in threaded engagement therewith. A ball 44 is formed upon the outer end of the rod 43 and is disposed in a socket integrally formed with the plate 39. The outer plate 39 is also hinged at one side of the opening as shown at 45, so as to allow sufficient vertical movement thereof for the flange 40 to be raised above the outer shell of the section. The plates 39 and 40 may then be swung to one side so that entrance may be readily had to the interior of the life buoy. After the passengers have entered the plates are positioned over the opening 38, and the rod 43 is rotated until the outer plate 39 is drawn down into secure engagement with the periphery of the life buoy. Immediately below the entrance opening 38, a shelf or step 46 is secured to the inner shell 15. The passenger may easily step from the shelf 46 to the seat 24. Windows 47 are arranged between the shelves of the upper section and are in the form of a truncated cone. A metallic casing is provided for these windows, and the outer and inner edges thereof are flanged down upon the edge of the glass, whereby the same will be securely retained in position. A water chamber 48 is provided between the inner shell and the outer shell of the lower section and is designed to contain drinking water for the use of the passengers within the life buoy. A suitable pipe communicates therewith and is provided with the faucet 49. In the upper edge of the lower section, a suitable filling opening is provided by means of which the water chamber may be readily filled. Space may also be provided beneath the seats 24, in which provisions may be stored. A bottom plate 50 is secured to the lower section and is sufficiently heavy to maintain the life buoy in an upright position at all times.

From the foregoing, it will be seen that I have provided an extremely simple construction of life buoy which is so constructed that the same may be constantly supplied with fresh air and the vitiated air readily exhausted, thereby preserving the health of the occupant and materially adding to the buoyancy of the vessel. When the ship is in distress and in imminent danger of sinking, the life buoy is lifted from the opening 4 in the top plate 2, and as the vessel descends the cable 9 will unwind from the reel 8 and the life buoy will be sustained upon the surface of the water. By providing a closure for the entrance opening 38, as above described, all danger of the water entering therethrough is overcome, and should the outer shell 15 be injured during the descent of the vessel, the water pumps 19 may be worked and the water which may have entered by the air space 16 rapidly exhausted therefrom. It will thus be seen that every possible exigency has

been provided for and that the ultimate rescue of the occupants of the life buoy is practically assured. The life buoy is, moreover, very strongly constructed and the various

5 elements thereof can be readily assembled. My improved construction of support is also very simple and extremely inexpensive and occupies but little space upon the deck of the vessel, forming no obstruction to the

10 movements of the passengers or the crew.

The exterior of the life buoy should be painted a brilliant color so that it may be easily seen; and thus it will be noticeable for many miles and attract rescuing parties.

15 What is claimed is:

1. A spherical life buoy having an air chamber formed therein, an entrance opening communicating with the interior of said life buoy, air inlet and exhaust pipes

20 extending exteriorly thereof, a perforated housing for each of said pipes, a dome secured to the periphery of said life buoy and covering said housings, said dome being perforated, and means for supporting said

25 life buoy upon the deck of a vessel.

2. A spherical life buoy comprising outer and inner shells forming an air space, air pipes extending through said shells and communicating with the interior of the life

30 buoy, a perforated housing arranged over each of said pipes, a tube extending through said shells, a signal removably supported in said tube, a perforated dome secured upon the outer shell and inclosing said housings,

35 an entrance opening communicating with the interior of said life buoy, closure plates arranged upon either side of said opening, a washer secured to the under side of the outer plate, a rod pivotally connected to said

40 plate, and threaded through the inner plate, windows arranged between the inner and outer shells, a spacing member secured between said shells, and means for supporting said life buoy upon the deck of a vessel.

3. A spherical life buoy comprising two

45 semicircular sections each consisting of two outer and inner shells, said sections being connected and secured together by bolts extending through exterior flanges formed

50 thereon, an exhaust air pipe extending through said shells, an inlet pipe through said shells, a perforated housing arranged over each of said pipes, a flooring secured in the lower section, air pumps supported

55 upon said floor and connected to said inlet air pipe, an entrance opening extending through the upper section, closure plates arranged upon either side of said opening, means for securing said plates against move-

60 ment, water pumps communicating with the space between said shells, a pipe extending from said pumps to the exterior of said life

buoy, and means for supporting said life buoy upon the deck of a vessel.

4. A spherical life buoy comprising two 65 semispherical sections, each of said sections consisting of an inner and outer metallic shell, an I-beam disposed between said shells spacing the same, seats circularly arranged in the interior of the lower section, 70 windows disposed at diametrically opposite points in the upper section between said inner and outer shells, an entrance opening extending through said shells, a flooring arranged in said lower section, an illuminat- 75 ing lamp centrally supported thereon, a bottom plate secured to the exterior of said lower section, inlet and exhaust air pipes extending through the upper section at the top thereof, a perforated housing arranged 80 over each of said pipes, a signal extended through said upper section and removably supported therein, a perforated dome arranged over said housings and secured to the exterior of the upper section, water 85 pumps arranged in said lower section, air pumps arranged in the lower section and connected to said inlet air passages, a step secured to said upper section beneath the entrance opening, a water tank arranged in 90 said lower section between the outer and inner shells, and means for supporting the said life buoy upon the deck of a vessel.

5. A spherical life buoy having inlet and exhaust air passages extending therethrough, 95 an entrance opening communicating with the interior thereof, signal supporting means extending through the top of said life buoy, a protecting dome disposed over said air passages and the signal supports, windows 100 arranged in the wall of said life buoy, a weight plate secured to the bottom of said life buoy, in combination with a support comprising vertical standards having a plate secured upon their upper ends, a central 105 opening in said plate adapted to receive said life buoy and support the same, transverse plates secured to said vertical standards, a shaft mounted in said plates and having a reel secured thereon, a cable 110 having one of its ends connected to the bottom of said life buoy, the other end thereof being secured to said reel, a handle upon one end of said shaft for operating said reel, and a stairway secured to one side of 115 said support and extending from the bottom to the top thereof.

In testimony whereof I affix my signature, in presence of two witnesses.

FREDERICK WOODS.

Witnesses:

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EMMA OLSON.