

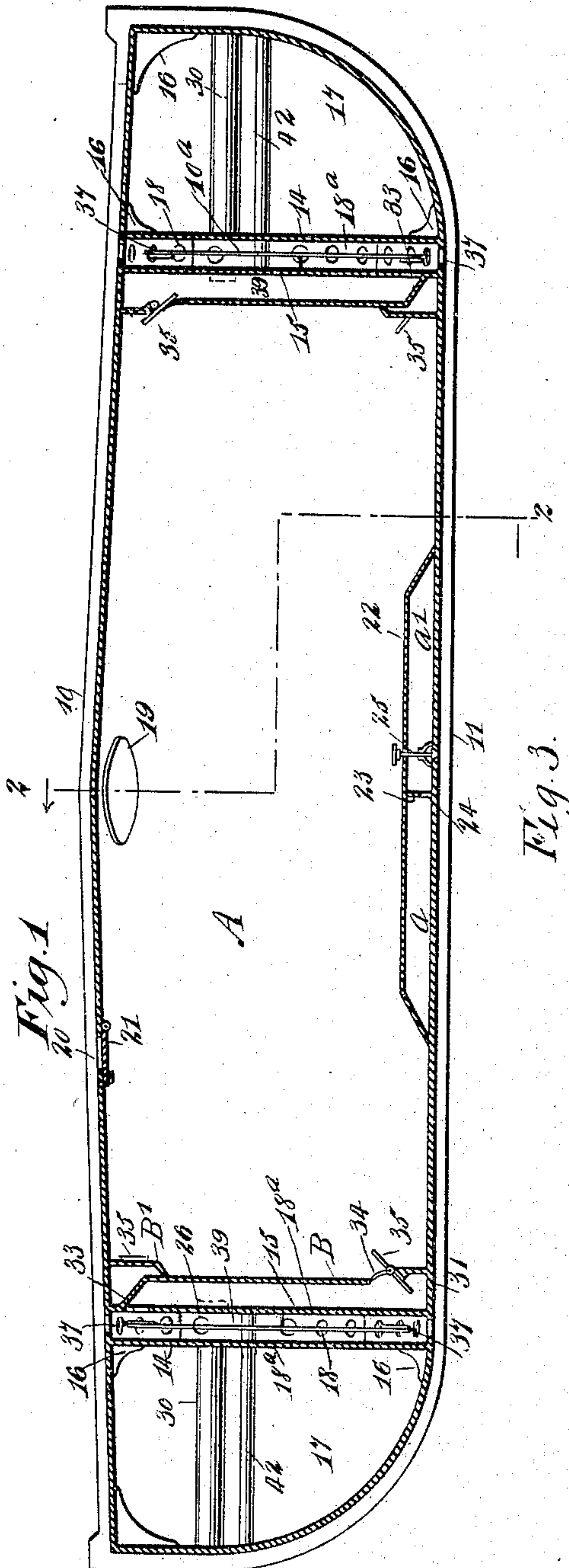
(No Model.)

R. D. MAYO.
LIFE BOAT.

2 Sheets—Sheet 1.

No. 565,768.

Patented Aug. 11, 1896.



WITNESSES:

Edward Thorpe.
Fred A. Ker.

Fig. 4.

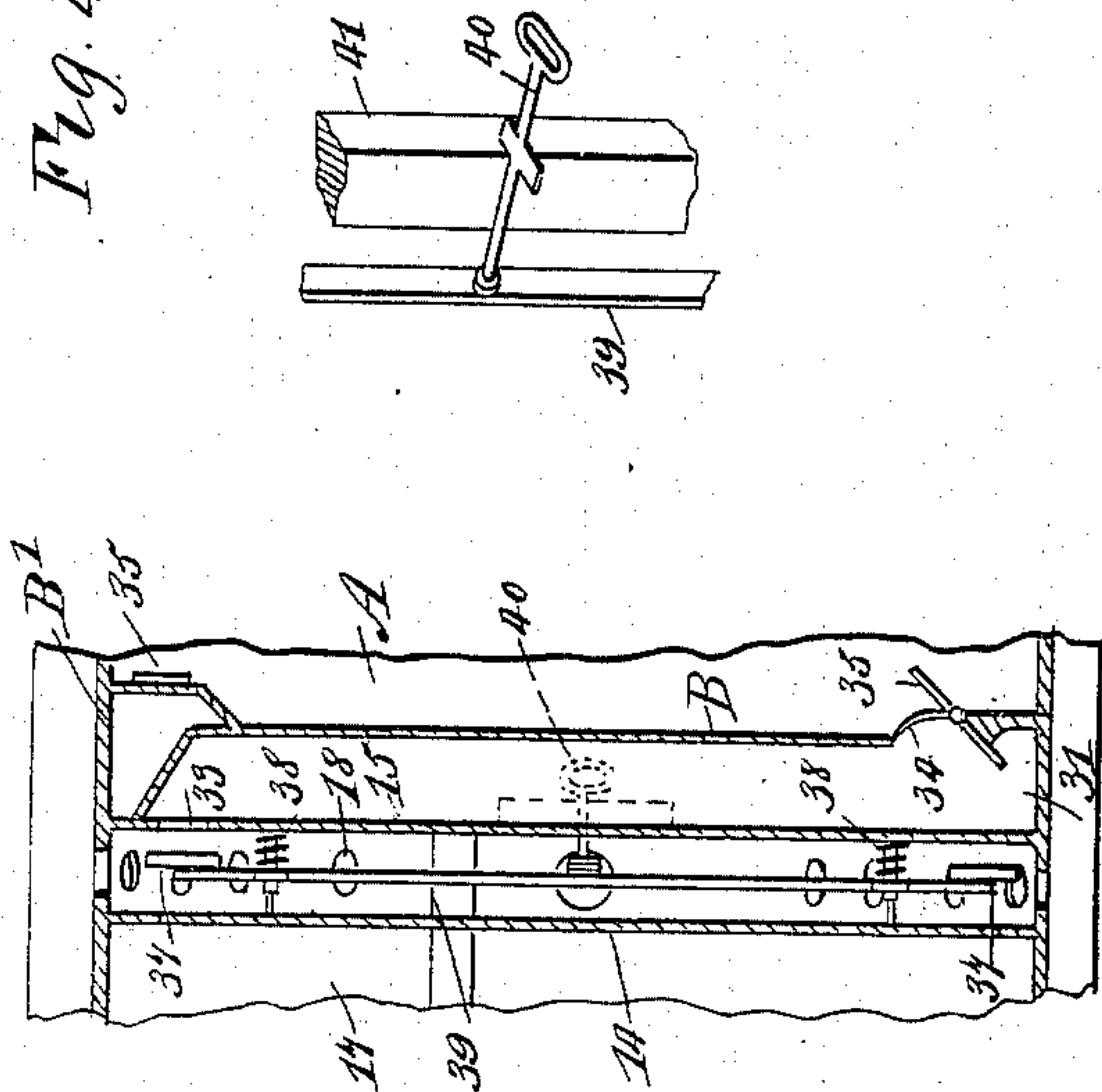
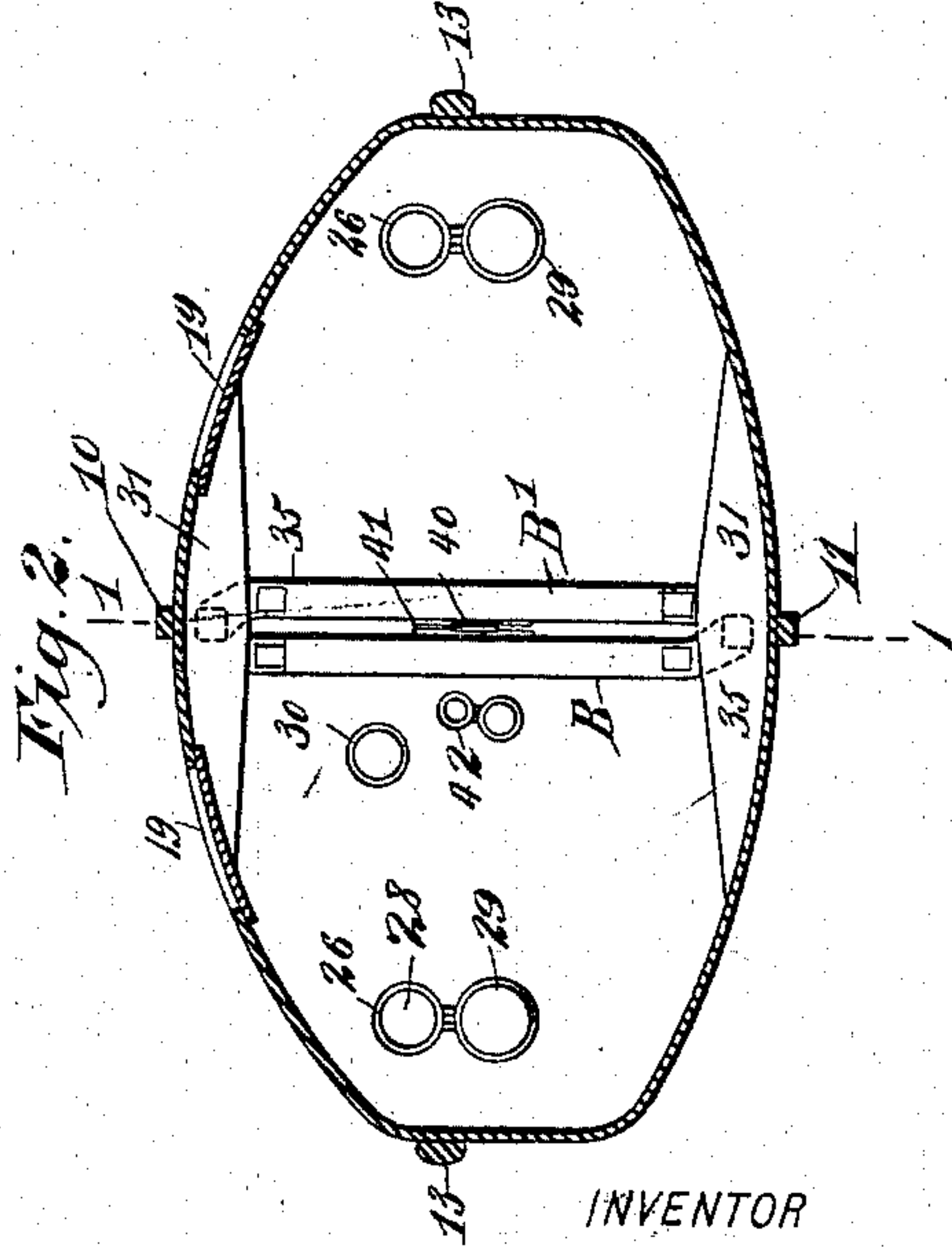


Fig. 3.



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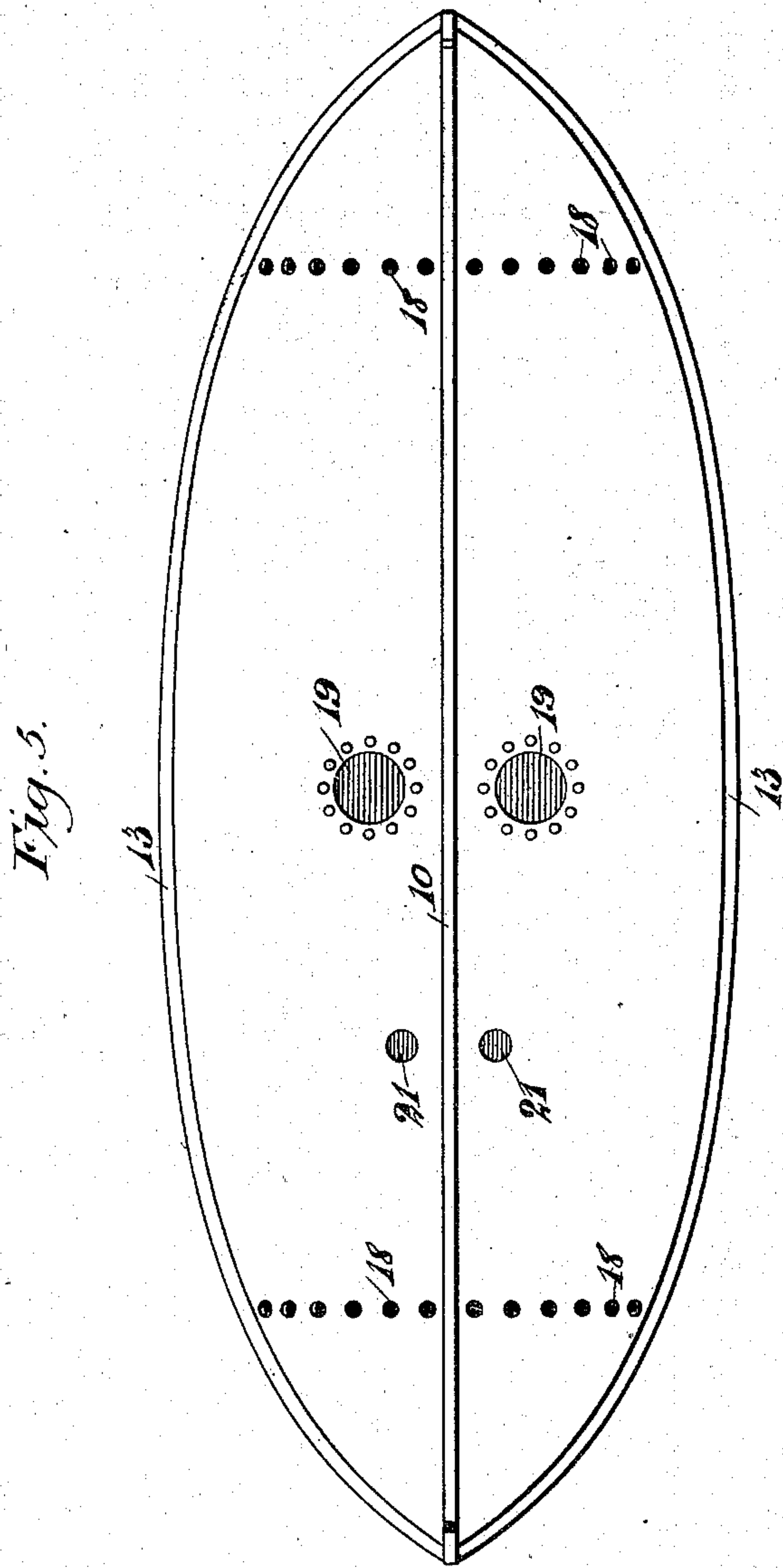
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UNITED STATES PATENT OFFICE.

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DONALD A. McLEOD, OF MANISTEE, MICHIGAN.

LIFE-BOAT.

SPECIFICATION forming part of Letters Patent No. 565,768, dated August 11, 1896.

Application filed July 25, 1895. Serial No. 557,145. (No model.)

To all whom it may concern:

Be it known that I, ROBERT D. MAYO, of Frankfort, in the county of Benzie and State of Michigan, have invented a new and Improved Life Boat or Float, of which the following is a full, clear, and exact description.

My invention relates to an improvement in life-floats or like boats, and the object of the invention is to provide a receptacle adapted to accommodate a predetermined number of persons, and which receptacle will be capable of floating in any kind of weather, and also capable of progression whether floating on its top or on its bottom surface.

A further object of the invention is to provide means for supplying the interior with suitable quantities of air no matter what the position of the boat may be, and whereby, further, when the boat is entirely submerged all communication from the outside may be instantly cut off.

A further object of this invention is to provide for signaling by means of rockets or otherwise from the interior of the vessel, and to construct the vessel in the strongest, lightest, and most economic manner possible.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal vertical section through the boat or float, taken at one side of its center, and on the line 1 1 in Fig. 2. Fig. 2 is a transverse section taken transversely on the line 2 2 of Fig. 1, looking in direction of one of the bulkheads. Fig. 3 is a longitudinal section taken through one end of the boat, illustrating the valves adapted for closing the air-inlets; and Fig. 4 is a detail view of the device for controlling the inlets of the air-tubes. Fig. 5 is a plan view of the boat.

In carrying out the invention the hull may be constructed of any light or durable material, as, for example, aluminium, or a metal of any suitable description. In plan view the hull is substantially pointed at its ends,

and it is provided with a rib 10 running fore and aft upon the upper deck, connecting with the keel 11 at both of its ends, as shown particularly in Fig. 1, and at the sides of the boat or float fenders 13 are secured in any suitable or desired manner. In cross-section the boat is of greater width than height and depth, as illustrated in Fig. 2, and as both the deck and the bottom of the hull slope to the sides from the center, the boat will right either with its deck uppermost or its deck undermost with perfect ease, the rib 10 serving as a keel when the boat rides deck down.

At both ends of the boat two bulkheads 14 and 15 are formed, of any strong material, and these bulkheads fit snugly to the sides, top and bottom of the hull, being secured thereto by knees 16, or their equivalents. The spaces between the outer bulkheads and the extremities of the hull are perfectly sealed, and are virtually air-chambers 17, while in that portion of the hull located between the two bulkheads 14 and 15 a number of openings 18 is made for the admission of air, the water which would likewise be admitted being provided against in a manner to be hereinafter set forth.

Access is obtained to the living-compartment A of the vessel, which is located between the inner bulkheads 15, through the medium of hatches 19 located, preferably, in the deck at each side of the deck-rib, and these hatches are provided with suitable covers, which are battened down from the interior of the boat and sealed in a water-tight manner, the hatches being ordinarily screwed to place, and at one or more points in the deck openings 20 are provided, covered by doors 21, opening from the inside of the boat, and said openings 20 are adapted for signaling purposes, since rockets or equivalent signals may find an exit through them.

At the central portion of the bottom of the body within the living-chamber A a ballast-chamber 22 is formed. This chamber is adapted to receive a water ballast in order that the boat may be buried in the water a desired distance, and the said ballast-chamber is preferably divided into two compartments *a* and *a'* by means of a central parti-

tion 23, having an aperture or apertures therein, designated as 24 and shown best in Fig. 1. The valve 25, operated from the living-chamber A, is seated in the bottom of the hull, and by opening this valve to a greater or to a less extent the amount of water ballast will be under control, the water passing freely from one compartment to the other.

The interior of the living-chamber is upholstered or is otherwise fitted up for the comfort of the occupants, and it is lighted by windows 26 located in the inner bulkhead 15, at the sides thereof, and the said windows are placed at the inner extremities of tubes 28 of suitable diameter, which extend out to the end portions of the hull through the air-chambers 17. These windows are provided with caps 29, adapted to be screwed on the window-casing in order that should the window become broken the lighting-tube connected therewith may be closed to prevent water entering the living-compartment.

A third tube 30, located near the center of each inner bulkhead 15, is passed out to the end of the hull, and is adapted as a sight-tube, as through it observations may be taken, and all of these tubes may be simply passed through the bulkheads 14, the windows being placed in registering openings in the inner bulkheads 15, so that in the event water should enter these tubes when the vessel is on end, for example, or is tossing in the sea the water will simply fall into the air-receiving compartment contained between the bulkheads.

Two air-tubes B and B' are erected upon the inner face of each inner bulkhead 15, preferably at the center of the said bulkhead, the air-tube B being at the starboard and the tube B' at the port side, as shown in Fig. 2, and at the top and bottom of the boat adjacent to each of the inner bulkheads a centrally-located reservoir 31 is formed, and the tube B, for example, communicates at one end with the lower reservoir, or that at the bottom, its upper end communicating with the air-receiving space between the two bulkheads, while the lower end of the opposite tube communicates with the aforesaid air-receiving space and its upper end is in communication with what may be termed the "deck-reservoir" 31. The two tubes, while extending parallel side by side for the greater portion of their length, are brought virtually one over the other at their extremities.

An opening 33 is made in each inner bulkhead 15 where the air-tubes connect with the air-receiving space between the bulkheads heretofore referred to and now designated as 18^a. The air is intended to enter the air-receiving tubes through their inlets 33, and at the opposite end of each of the air-receiving tubes, that is, adjacent to the reservoir, an opening 34 is made in each of the said tubes communicating with the living-compartment A, and these outlets 34, as the air passes into the said compartment through them, are provided with gravity or balance valves 35, and

the valves extend both inward and outward from the openings they are intended to close, so that their inwardly-extending members form sheds to prevent any water that might have accumulated in the lower reservoir from passing out at the outlet 34 of the tube. Thus, for example, when the boat is floating on its bottom keel, as shown in Fig. 1, the air will enter at the inlet-opening 33 of that tube at each end of the vessel having its inlet uppermost or near the top of the vessel, and the air will then find entrance into the living-compartment through the outlets 34 of the same tubes, the valves in the other tubes being closed. If, for example, the position of the boat should become reversed, some water may find its way into the air-tubes B and B' from either the sight-tube 30 or the lighting-tubes 28, and as the position of the vessel changes the reservoir of the tubes B, for example, that formerly supplied the air will be carried at the top of the vessel, and the reservoirs of the tubes B' that were inactive will then be at the bottom of the vessel, since the vessel will float with its bottom keel upward, and any water that may have entered the air-tubes will flow into the lowermost reservoirs, while at the same time the outlet-valves of the said air-tubes B' will automatically open and the corresponding valves of the air-tubes B will be closed.

Thus it will be observed that there will be a constant supply of air to the living-compartment, no matter in what position the vessel may float, as long as a portion of the air-receiving chambers 18^a are out of the water.

In the event the vessel is to be entirely submerged, or should accidentally be submerged, the air-inlets 33 communicating with the air-receiving compartments 18^a should at once be closed, and this is accomplished, preferably, as shown in Fig. 3.

A valve 37 is provided in each air-receiving compartment 18 for each inlet 33, being normally held from these openings by means of springs 38, acting in an outwardly direction upon a rod 39 connecting the two valves. This rod is also attached to a key 40, which extends within the living-compartment through a suitably-packed opening in the inner bulkhead between the air-receiving tubes B and B'. When the key is drawn inward, the valves 37 will be closed over the inlet-openings, and by turning the key so as to bring its head over a rack 41, of any approved construction, the valves will be held closed, and the moment the key is released the springs 38 will act instantly to open the valves, it being understood that a key and a set of valves controlled thereby are located in each air-receiving compartment.

A drogue-pipe 42 extends from each end of the boat through the inner bulkheads 15, in order to receive a drogue-line for the purpose of holding the vessel's head up to the sea. Any approved form of sea anchor or drag may be carried by this line, and it may

be readily manipulated by any person in the living-compartment.

It will be understood, as shown in Fig. 2, that the drogue-pipe 42 may be provided with
5 a cap of any approved design capable of sealing it in a water-tight manner at the living-compartment, the cap being shown as open in the aforesaid figure, and that the drogue-line may be secured within the space between
10 the bulkheads of the living and air-tight compartments in any desired manner.

This boat is exceedingly simple in its construction, and it practically needs no one skilled in seamanship to take care of it.

15 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a life-boat, air-supply tubes in communication with the living-compartment, and
20 in communication with the exterior of the boat, a water-reservoir connected with each tube, and valves controlling air-outlets located near the said water-reservoirs, as and for the purpose specified.

25 2. In a life-boat, air-supply pipes or tubes each provided with an inlet near one end in communication with the outside atmosphere, and an outlet near the opposite end in communication with the living-compartment of
30 the vessel, and gravity-valves located at the outlets of the said supply-tubes, substantially as and for the purpose set forth.

3. A life-boat having openings in its hull between its air-compartments and inner bulk-
35 heads, air-supply tubes in communication at one end with the said apertured compartments, the opposite ends of the tubes being in communication with the living-compartment of the vessel and provided with a res-
40 ervoir for water, an outlet for air adjacent to the reservoir, and valves located at the said outlets and adapted to form a partial cover for the reservoir near which they are located, the said valves being further adapted
45 for automatic action, as and for the purpose specified.

4. A life-boat having openings in its hull between its air-compartments and inner bulk-
50 heads, air-supply tubes in communication at one end with the said air-compartments, the opposite ends of the tubes being in communication with the living-compartment of the vessel and provided with a reservoir for water, an outlet for air adjacent to the reservoir,
55 valves located at the said outlets and adapted to form a partial cover for the reservoir near which they are located, the said valves being further adapted for automatic action, valves located in the open compartment between the
60 air-compartments and inner bulkheads and adapted to close the inlets of the air-supply tubes, and means, substantially as described, for operating the said valves from the living-room of the vessel, as and for the purpose
65 specified.

5. In the construction of life-boats, a hull having a keel, the said hull being provided at each end with an air-tight compartment, interior bulkheads between which the living-
70 compartment is located, a valve-controlled air-duct communicating with the living-compartment and the space between the air-compartment and the bulkheads, which space is in communication with the outside atmosphere, as and for the purpose specified. 75

6. A life-boat having two water-compartments, a passage-way communicating with each water-compartment and with the atmosphere, each passage-way having an air-open-
80 ing adjacent to the respective water-compartments, valves respectively capable of closing said air-openings, and additional valves capable of closing the passages for communication with the atmosphere, substantially as described. 85

7. A life-boat having two air-admitting passages, a valve capable of closing each pas-
90 sage, a rod connecting the valve to move in unison, and a key attached to the rods, substantially as described. 90

8. A life-boat, the hull of which is provided with a series of air-inlet openings, a single compartment with which the openings
95 communicate, two tubes respectively communicating with the single compartment at opposite parts thereof, and two water-reservoirs with which the tubes respectively communicate, the tubes having air-outlet orifices, substantially as described.

9. A life-boat, having air-inlet openings, a
100 single compartment with which the openings communicate, two tubes communicating with the single compartment and at opposite points thereon, two water-compartments with which
105 the tubes respectively communicate, the tubes having outlet air-orifices, and means for closing the communication between the tubes and the single compartment, substantially as described.

10. A life-boat having air-inlet orifices, a
110 single compartment with which the air-openings communicate, two tubes communicating with the single compartment and at opposite points on the same, two water-compartments with which the tubes respectively
115 communicate, the tubes having air-outlet openings, two valves respectively closing the communication between the tubes and the single compartment, a rod connected to the valves to operate the valves in unison, and a
120 key attached to the rod, substantially as described.

11. A life-boat, having two bulkheads forming a compartment between them and also forming at one side a living-compartment
125 and at the opposite side an air-tight compartment, a tube extending through the air-tight compartment and through the adjacent bulkhead, and a vision-glass in the remaining bulkhead and aligned with the two, said re- 130

maining bulkhead being adjacent to the living-compartment, substantially as described.

12. A life-boat having five compartments formed by two parallel bulkheads at each end
5 of the boat, each pair of bulkheads forming a separate compartment communicating with the atmosphere and with the compartment between each pair of bulkheads, the spaces

outward from the respective pairs of bulkheads forming air-tight float-compartments, 10 substantially as described.

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