

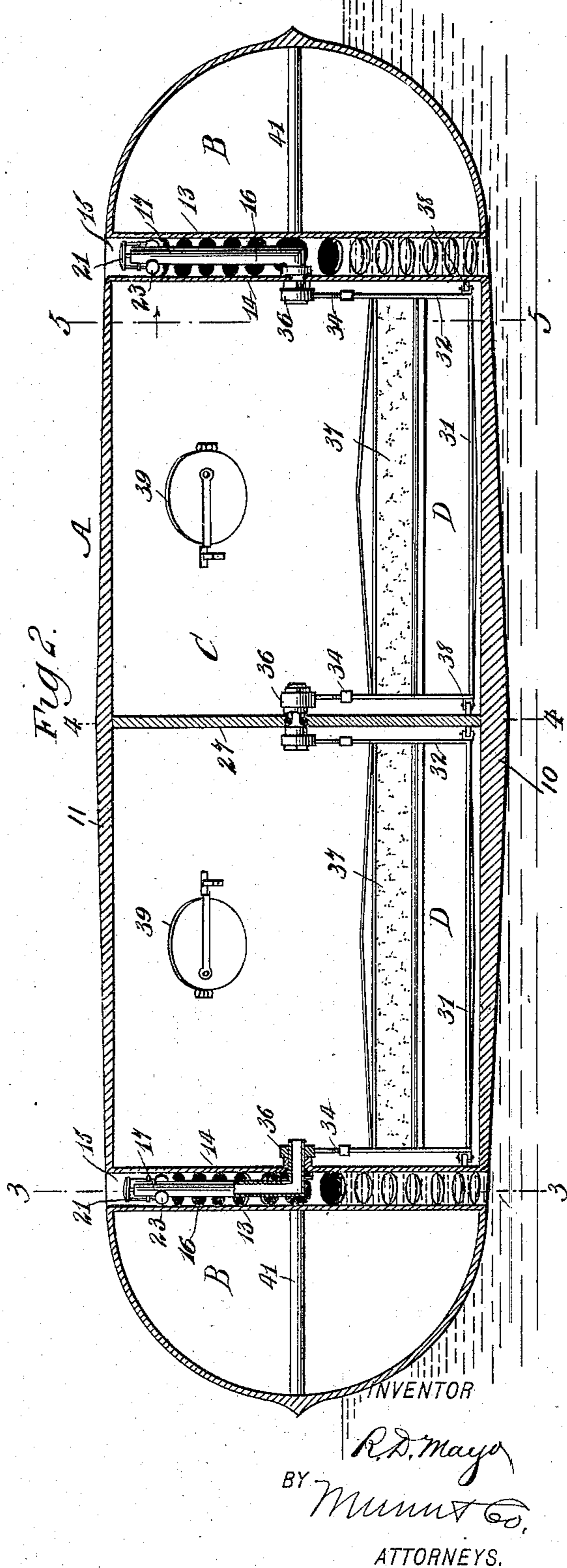
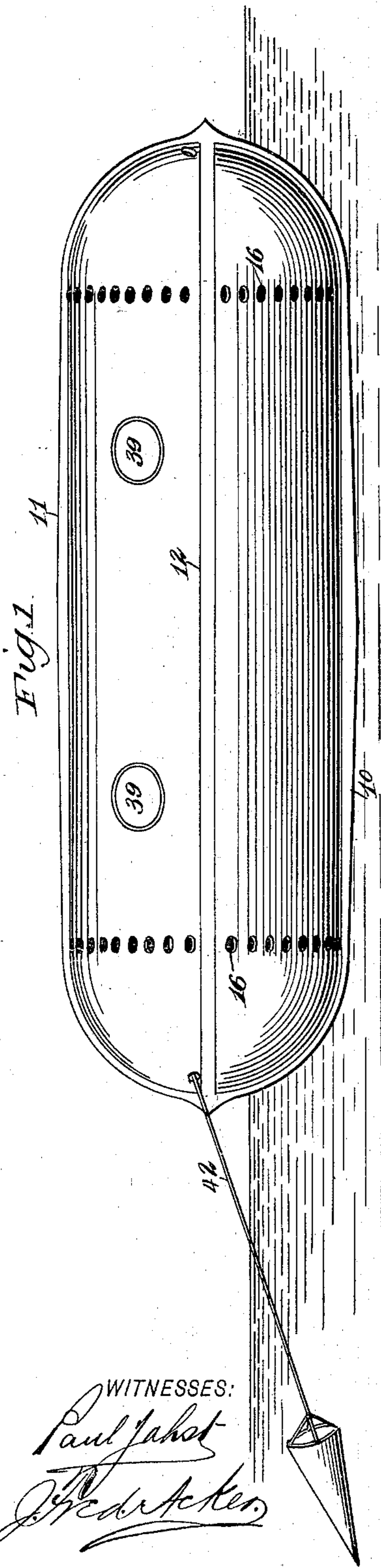
(No Model.)

2 Sheets—Sheet 1.

R. D. MAYO.
LIFE BOAT.

No. 565,769.

Patented Aug. 11, 1896.



WITNESSES:

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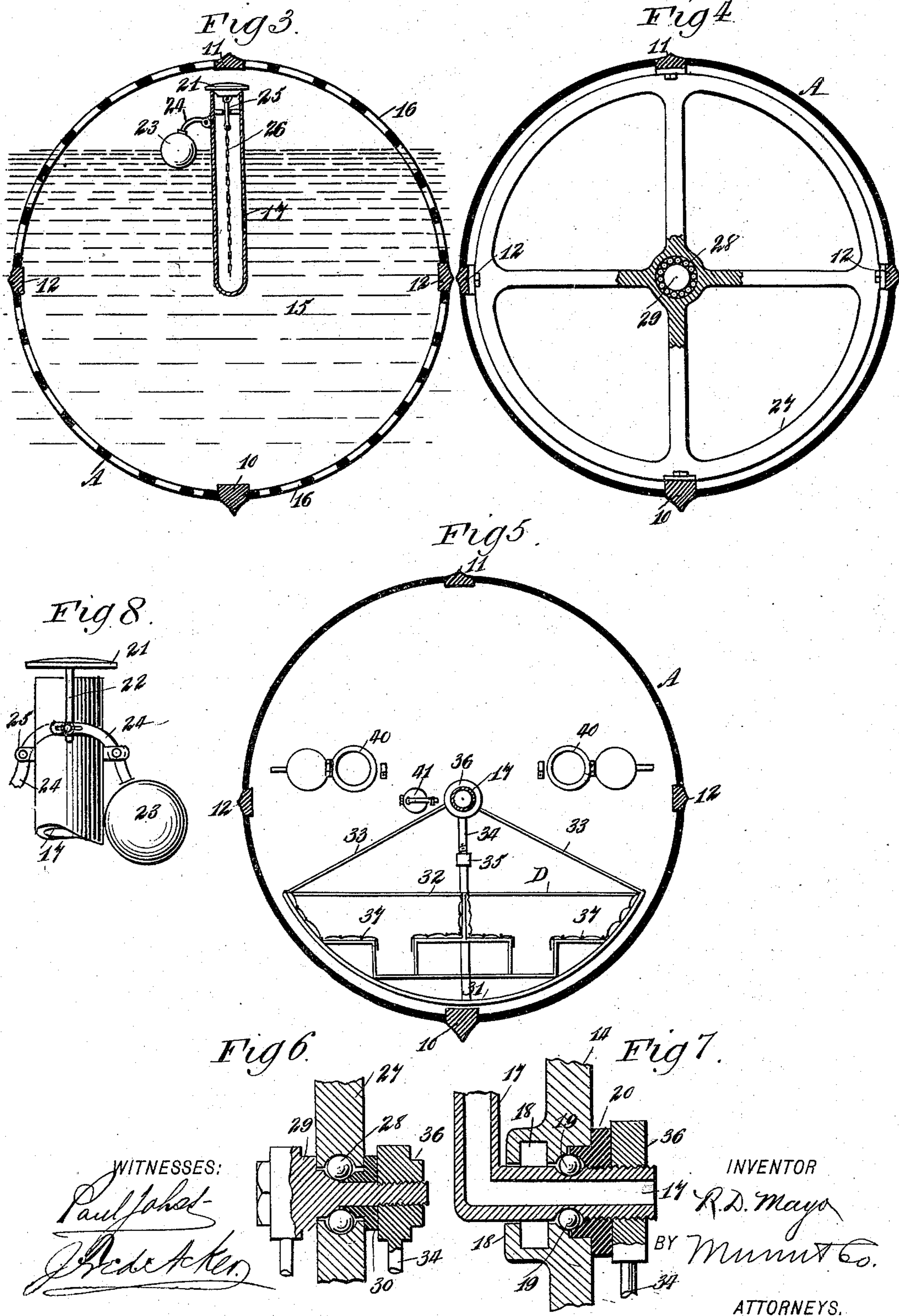
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UNITED STATES PATENT OFFICE.

ROBERT D. MAYO, OF FRANKFORT, MICHIGAN, ASSIGNOR OF ONE-HALF TO
DONALD A. MCLEOD, OF MANISTEE, MICHIGAN.

LIFE-BOAT.

SPECIFICATION forming part of Letters Patent No. 565,769, dated August 11, 1896.

Application filed July 25, 1895. Serial No. 557,146. (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 useful
5 Improvement in Life Boats or Floats, of which the following is a full, clear, and exact description.

My invention relates to an improvement in life boats or floats, and has for its object
10 especially to improve upon the construction shown in the application for a patent for a similar device filed of even date.

Another object of this invention is to provide a life boat or float in which the cage or
15 carriage in which the persons are seated or contained will be unaffected by the movement of the hull, enabling the hull to turn upside down or stand upon either side without carrying the cage out of the perpendicular.

20 Another object of this invention is to provide a means for supplying air to the living-compartment of the boat, the supply being unobstructed no matter in what position the boat may be placed, except when submerged,
25 and whereby when the boat passes below the surface the water will automatically act to close the air-inlet temporarily, the valve through the medium of which the inlet is closed being automatically opened the moment that the vessel is above the surface or
30 a portion of the said vessel is so situated.

Another object of the invention is to provide ball-bearings for the cage or car contained in the boat, so that friction will be
35 reduced to a minimum.

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.

40 Reference is 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 side elevation of the improved
45 boat. Fig. 2 is a vertical longitudinal section through the same. Fig. 3 is a transverse section on the line 3 3 of Fig. 2. Fig. 4 is a similar view on the line 4 4 of Fig. 2. Fig. 5 is a like section on the line 5 5 of Fig. 2. Fig. 6
50 is a detail sectional view of a partition and ball-bearing supports located therein and

adapted as partial supports for the car. Fig. 7 is a detail sectional view of a portion of an inner bulkhead and that portion of an air-inlet tube which passes through the bulk-
55 head; and Fig. 8 is a partial side elevation of the upper portion of the air-inlet tube, illustrating the manner in which the valve is controlled by the action of the water.

In carrying out the invention the hull A of
60 the boat is preferably circular in cross-section and is tapering at its ends, being provided with a keel 10, which extends upward at its ends to meet a deck-rib 11, while centrally between the deck-rib and keel side ribs
65 12 are formed on the hull, which meet the combined end portions of the aforesaid deck-rib and keel, as shown in Fig. 1. Under this construction no matter the boat rides upon
70 its top, bottom, or side faces, it will be guided by a keel surface.

Near each end of the boat two bulkheads 13 and 14 are erected, a space intervening each pair of bulkheads for the purpose of admitting air, and this air-receiving chamber
75 15 is provided with apertures 16, made in the hull and extending circumferentially thereof. The inner bulkhead 13 at each end forms at each extremity of the boat an air-tight compartment B, and between the inner bulkheads
80 14 the living-compartment C of the boat is contained. Within each of the air-receiving chambers 15 an upright air-supply pipe 17 is placed, being contained wholly within said
85 chamber, except that the lower end of each of the air-supply pipes or tubes is carried through an inner bulkhead 14, as shown best in Figs. 2 and 7.

The bulkheads 14 are provided with suitable packing 18 around the elbow portion of
90 the said air-supply pipes in order that water shall not enter the said living-compartment. Ball-bearings 19 are introduced between the elbow-section of each air-supply pipe and the bulkhead through which it passes, so that the
95 hull of the boat may turn bottom up or upon its side without affecting the position of either of the said air-supply pipes. The balls are kept in place by lock-nuts 20, screwed upon the inner ends of the air-supply pipes, which
100 are exteriorly threaded.

A valve 21 is located at the top of each of

the air-supply pipes, and the valve is provided with standards 22, extending downward at each side of the pipe with which it is connected, and the standards of each valve are
 5 connected through the medium of stems 24 with floats 23, the stems being pivoted to the said pipes at opposite sides, and the weight of these floats will normally keep the valves open. The valves are guided by a central
 10 stem 25, (shown in Fig. 3,) and may be operated if anything should happen to the floats or when they are not brought in action by means of a chain 26 or its equivalent, attached to the stem of a valve and carried down
 15 through the air-inlet pipe and out at its inner or delivery end, as shown in Fig. 3. If in practice it is found desirable, but one float 23 may be used in operating the valve.

The living-compartment C is divided, preferably, by one or more skeleton partitions 27, (shown best in Fig. 4,) a single central one being illustrated in the drawings. The partition 27 contains an opening at its center in which ball-bearings 28 are placed for engage-
 25 ment with a stud 29, loosely passed through the aforesaid opening, the balls being held in place by a cap or nut 30, as shown in Fig. 6.

In each subcompartment of the living-compartment a car or cage D is located, comprising a frame 31, corresponding in general contour to the bottom portion of the hull, and since the hull is preferably circular in cross-section the bottom of the frame is somewhat circular or segmental. The frame is provided
 30 with end sections 32, and the end sections have arms 33 attached to their side portions, the said arms being made to converge about centrally over the foot-sections and meet an upright 34. The upright at each end of the
 35 cage or car is made in sections connected by an adjusting-sleeve 35 or its equivalent, so that the bottom of the cage or car may be raised or lowered with respect to the bottom of the hull.

Each of the uprights 34 terminates at its upper end in an eye 36, and these eyes are interiorly threaded in order that the uprights at the outer ends of the car may be screwed upon the inner ends of the air-delivery tubes, while the eyes at the inner ends
 45 of the cars are screwed upon or otherwise secured to the stud or shaft 29, journaled in the partition 27. The framework of each car or cage is provided with any desired number of seats 37, conveniently arranged. Thus it will be observed that, no matter in what direction the hull may be turned, it will move without affecting the equilibrium of the cars or cages, which remain pendent, and if they
 50 have any motion at all have a slight pendulum one. In order that the cars shall have no end movement, guide-wheels 38 are placed at the ends of the car-frame for engagement, one set with the inner bulkheads and the
 55 other set with the partition 27. It is also evident that in the event the boat should become submerged for a short while and the

water should therefore enter the air-receiving chambers 15, as shown in Fig. 3, the water would raise the floats 23 and thereby automatically close the outer ends of the air-conducting tubes. 70

Suitable hatchways 39 are provided, whereby access may be had to the interior of the boat, and windows 40 are made in the inner bulkheads, receiving light from the air-receiving chambers 15, and a tube 41 is passed through each of the air-compartments B in order that a drogue line 42 may be attached to the vessel to keep its head to the sea. 80

This vessel is exceedingly simple and durable. It is economic in its construction, and will afford a comfortable and safe means of travel in the event of disaster at sea.

Having thus described my invention, I claim 85 as new as far as completed—

1. In a life boat or float, a hull circular in cross-section and provided with a keel and a deck-rib and side ribs connected with each other and with the keel, and a cage or car pivoted within the said hull, whereby the said cage or car will remain in substantially perpendicular position below its axis no matter in what direction the hull may roll, and whereby also the hull will have a keel surface as a guide thereto whether it floats on its top, bottom or side faces, substantially as shown and described. 95

2. In a life boat or float, a hull provided with a living-compartment, air-compartments at its ends, and an air-supply compartment between the living and air compartments, communicating with the outside atmosphere, and air-inlet tubes located in the air-receiving compartments and leading into the living-compartment, the hull being adapted to revolve around said tubes, as and for the purpose specified. 100

3. In a life boat or float, a hull provided with a living-compartment, air-compartments at its ends, and an air-supply compartment between the living and air compartments, communicating with the exterior atmosphere, air-inlet tubes located in the air-receiving compartments and leading into the living-compartment, the hull being adapted to revolve around said tubes, and a car or cage having a pendulum suspension from the inner ends of the said air-inlet tubes, as and for the purpose set forth. 110

4. In a life boat or float, the combination, with a hull provided with a living-compartment, sealed air-compartments at its ends, and an air-receiving compartment between each sealed compartment and living-compartment, the air-receiving compartments being provided with openings extending out through the hull and practically around the same, air-supply tubes located in the air-receiving compartments, being passed through the bulkheads thereof into the living-compartment, the hull being capable of revolving around the inner portions of said tubes, and valves operated by the action of the water, located 120 125 130

in the said air-receiving compartments and adapted to close or to open the air-supply pipes, as and for the purpose set forth.

5 In a life boat or float, the combination, with a hull provided with a living-compartment, sealed air-compartments at its ends, and an air-receiving compartment between each sealed compartment and living-compartment, the air-receiving compartments being
10 provided with openings extending out through the hull and practically around the same, air-supply tubes located in the air-receiving compartments, being passed through the bulkheads thereof into the living-compartment,
15 the hull being capable of revolving around the inner portions of the said tubes, valves operated by the action of the water, located in the said air-receiving compartments and adapted to close or to open the said air-supply pipes, and a cage or car pendent from
20 and pivotally connected with the inner walls of the said living-compartment, substantially as and for the purpose set forth.

6. In a life boat or float, the combination,
25 with a hull provided with a living-compartment, sealed air-compartments at its ends, and an air-receiving compartment between each sealed compartment and living-compartment, the air-receiving compartments being
30 provided with openings extending out through the hull and practically around the same, air-supply tubes located in the air-receiving compartments, being passed through the bulkheads thereof into the living-compartment,

the hull being capable of revolving around 35 the inner portions of said tubes, valves operated by the action of the water, located in the said air-receiving compartments and adapted to close or open the air-supply pipes, a cage or car pendent from and pivotally con- 40 nected with the inner walls of the said living-compartment, guides attached to the car or cage, and ball-bearings located at the junction of the support of the car or cage with the supports provided for them in the interior of 45 the hull, as and for the purpose specified.

7. A marine vessel of circular shape in cross-section and having conical ends, a keel, a deck-rib and side ribs, the said deck and side ribs extending longitudinally of the hull 50 and all of them being connected at their ends with the end portions of the said keel, as and for the purpose specified.

8. A marine vessel, consisting of a hull having two bulkheads therein forming a 55 chamber having atmospheric communication, a cage pivotally suspended within the hull and inclosed thereby, the cage being capable of having the hull rotate around it, and an air-tube axially coincident to the hull and 60 passed from the cage into the compartment having atmospheric communication, substantially as described.

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Witnesses:

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