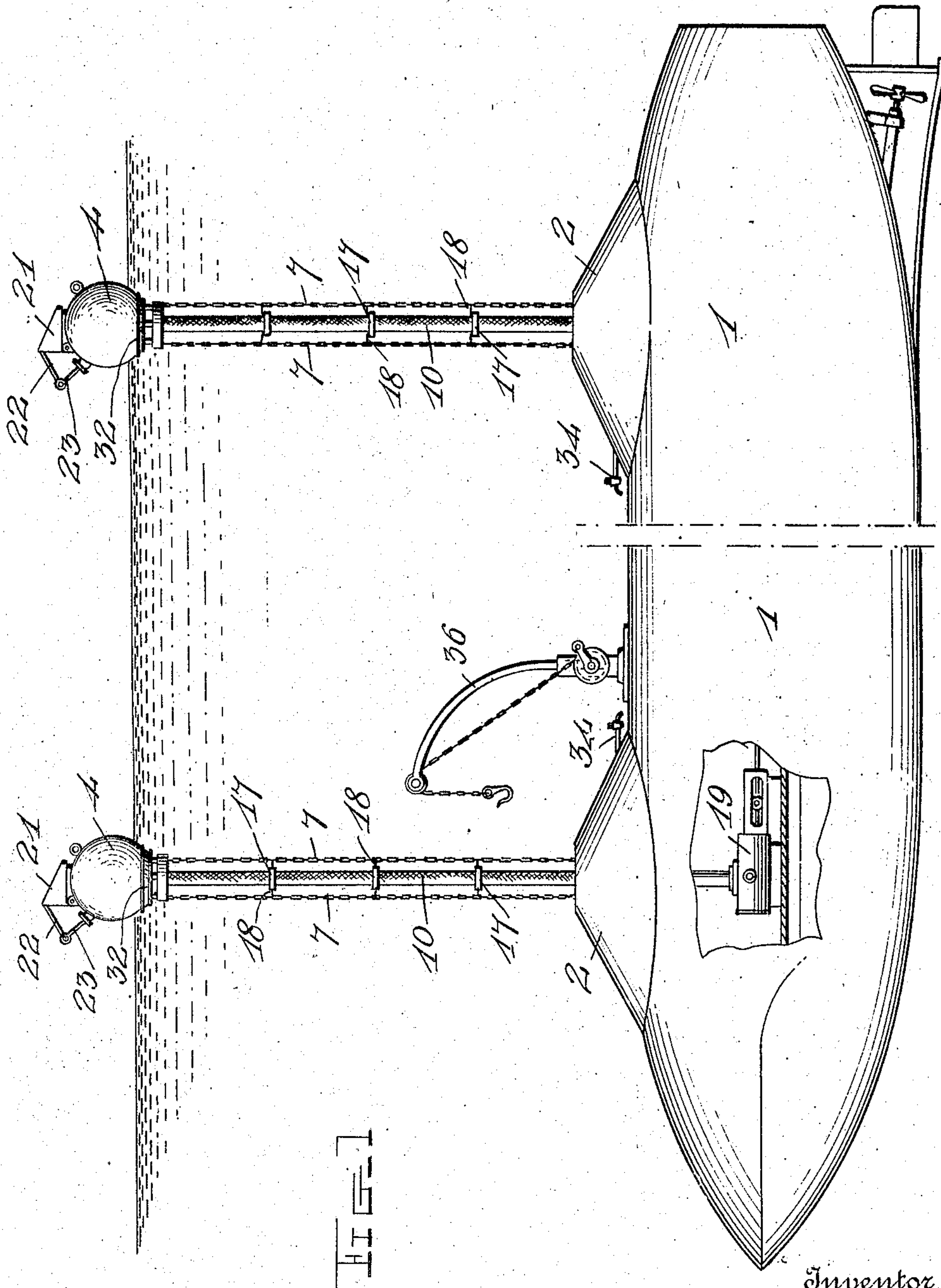


No. 814,869.

PATENTED MAR. 13, 1906.

W. J. O'HAIRE.
SUBMARINE BOAT.
APPLICATION FILED SEPT. 29, 1905.

2 SHEETS—SHEET 1.



Witnesses
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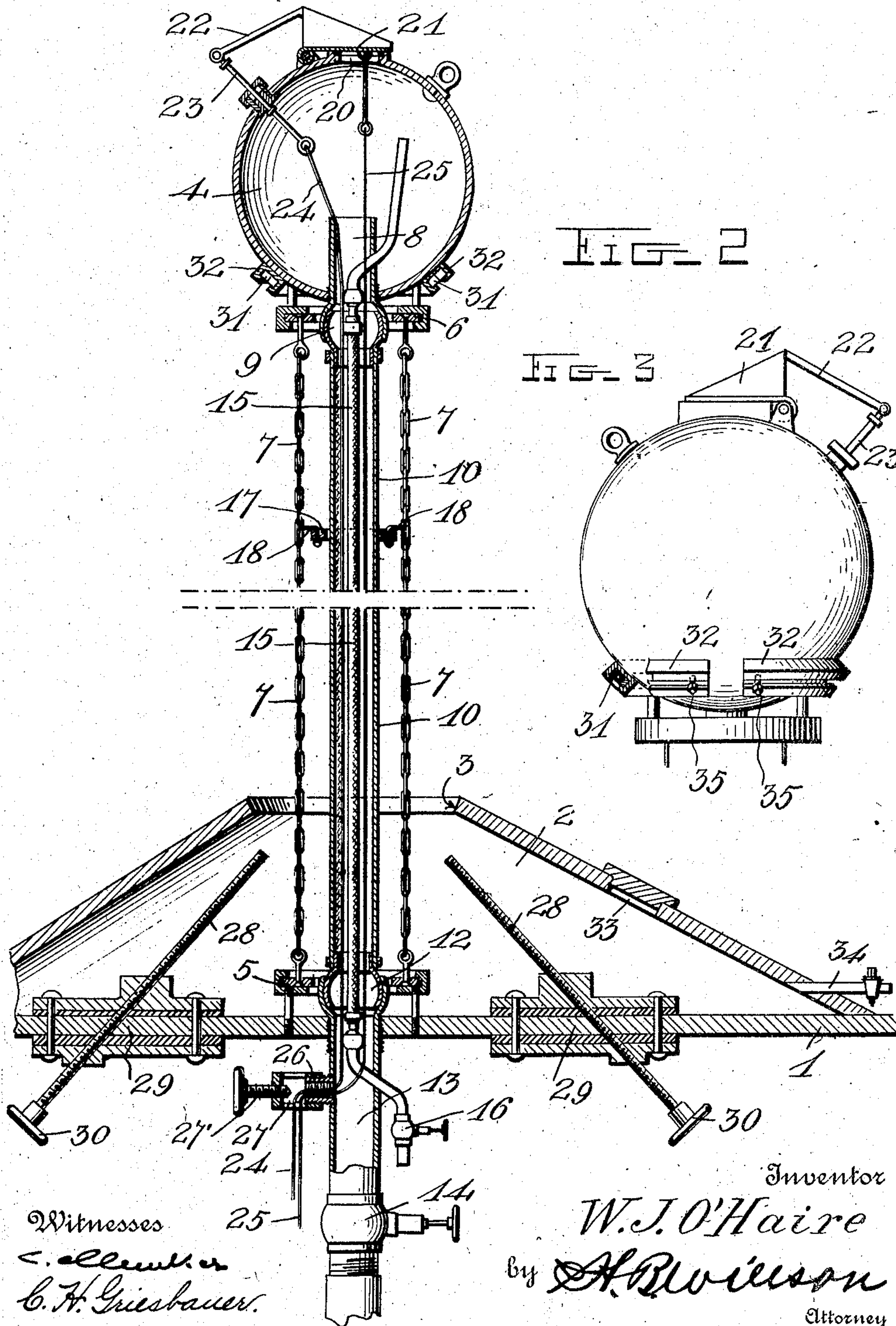
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

WILLIAM J. O'HAIRE, OF WASHINGTON, DISTRICT OF COLUMBIA,
ASSIGNOR OF ONE-HALF TO JEREMIAH O'CONNOR, OF WASH-
INGTON, DISTRICT OF COLUMBIA.

SUBMARINE BOAT.

No. 814,869.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed September 29, 1905. Serial No. 280,664.

To all whom it may concern:

Be it known that I, WILLIAM J. O'HAIRE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Submarine Boats; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in submarine torpedo-boats.

The object of the invention is to provide an improved construction of emergency-ventilator to supply air to the boat when the same is submerged and cannot rise.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangements of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of a submarine boat, showing the application of the invention thereto. Fig. 2 is an enlarged vertical sectional view through the ventilator and a portion of the boat; and Fig. 3 is a detail side elevation of the hollow float, showing the manner of attaching the float-securing nuts or blocks to the side of the float.

Referring more particularly to the drawings, 1 denotes the boat, which may be of the usual or any desired construction. On the top or deck adjacent to the front and rear ends of the same are arranged housings 2, in which are formed seats 3 to accommodate hollow floats 4, which are preferably spherical, but which may be of any suitable shape. Connected to the lower side of the float 4 is a swiveled or revolubly-mounted ring 5, and to the top of the boat, within the housings 2, is a swiveled or revolubly-mounted ring 6, said rings 5 and 6 being connected by two or more chains 7 of suitable length, whereby the floats are secured to the boat and allowed to float on the surface of the water. Arranged in the bottom of the float is a threaded hole, into which is adapted to be screwed a short section of metallic tubing 8, the upper end of which projects into the float, and to the lower outer end of which is connected, by means of a ball-and-socket joint 9, an outer flexible tube 10, said tube being connected at its lower end by

means of a ball-and-socket joint 12 to a short section of metallic tubing 13, which is adapted to be screwed into engagement with the top of the boat within the housings 2, said tubing 13 extending into the boat for a suitable distance and having in its extended end a valve 14. Within the outer tube 10 is arranged a small inner tube 15, the upper end of which projects through the side of the metallic tubing 8 and into the float, as shown. The lower end of the inner tube projects through the metallic tubing 13 and into the boat and is provided with a valve 16. Around the outer flexible tube are arranged at suitable intervals rings or collars 17, which are connected to the chains 7 by short links 18, thereby bracing said tubes and preventing the same from becoming twisted or tangled. On the lower end of the short metallic tubing within the boat are formed screw-threads, and to said threaded end is connected a pump 19, by which air is drawn through the tube and into the boat. The tube 15 permits vitiated air to be discharged from the boat and may be connected to the pump and used for supplying the air to the boat in the event that the outer tube 10 becomes injured.

In the top or upper side of the float is formed an air-inlet opening 20, which is adapted to be opened and closed by means of a door or valve 21, which is hingedly connected to the top of the float, as shown. To the door is connected a downwardly-projecting inclined arm 22, to which is loosely connected a short operating-rod 23, said rod being adapted to work through a stuffing-box arranged in the side of the float. Connected to the inner end of said rod 23 is an operating-rope 24, by which the door or valve 21 may be opened. To the door is also connected the upper end of a rope 25, which works through the opening 20 and is adapted to close the door. The ropes 24 and 25 are run through the outer tube 10 and pass out of the same through a threaded nipple 26, formed on the metallic tube 13 within the boat. On the threaded outer end of the nipple 26 is screwed a yoke 27, in which is mounted a screw-plug 27', adapted to be screwed into the nipple 26 to close the aperture therein through which the cords 25 pass out of the tube 13.

When the boat is floating on the surface of

the water, the floats 4 will be engaged with the seats 3 in the housings 2 and will be held in said seats by means of screws 28, which work through packed bearings 29 in the top of the boat, the inner ends of the screws being provided with heads 30, by which the same are operated from within the boat. The outer threaded ends of the screws are adapted to screw into the threaded apertures of nuts or blocks 31, which are secured to the lower opposite sides of the float, by means of annular flanged strips 32. When the floats are secured in the seats 3, the chains 7 and the air-tubes 13 and 15 are disposed within the housings 2. The housings are provided with suitably-closed manholes 33, through which the chains and tubes may be arranged therein, and with drain-cocks 34, by means of which the water may be drained therefrom.

The chains 7 are somewhat shorter in length than the air-tubes, thereby relieving the latter of all strain when the floats are in use. The loose connection of the tubes and chains with the floats and boat permits the floats to move freely in all directions and to revolve.

In Fig. 3 of the drawings is shown the manner in which the blocks or nuts 31 are inserted in the annular flanged strips 32, said strips having formed therein a break through which the blocks are inserted. The blocks are prevented from slipping out of said flanged strips by means of set-screws 35 arranged therein, as shown. By thus attaching the blocks to the float they may be readily shifted to bring them into position to be engaged by the screws 28.

On the top or deck of the boat are arranged one or more windlasses 36, by which the floats may be handled to seat the same properly in the openings of the housings 2.

A boat provided with air-supplying mechanism such as herein shown and described may remain submerged for an indefinite period of time without danger of the occupants being suffocated. It will be understood, however, that the device is intended for use only in case of an emergency.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. A submarine boat having a housing on its upper side forming a chamber and provided with a seat-opening, a float adapted to be seated in said opening, means to secure

the float when seated and to release the float, a flexible ventilating-pipe connecting the float and the boat, and flexible connections, independent of said pipe, between the float and the boat, said pipe and connections being secured to the boat within the chamber formed by the housing and passing through the seat-opening of the latter when the float is released.

2. A ventilating apparatus for submarine boats, consisting of hollow floats having formed in their upper sides an air-inlet opening, a door to open and close said opening, means to open and close said door from within the boat, inner and outer air-supply tubes connecting said hollow float with the interior of the boat, a universal joint arranged at each end of said outer tube to connect the same with the float and with the boat, chains to secure the float to the boat when the latter is submerged, and means to secure said float directly to the boat when the latter is afloat, substantially as described.

3. In a submarine boat, housings arranged on the top or deck of the same, seats formed in said housings, hollow floats adapted to be secured in said seats when the boat is floating on the surface of the water, means operated from within the boat to release said floats, chains to hold the floats when the same are released from the housings and the boat submerged, inner and outer flexible air-supplying tubes, short sections of metallic tubes secured to and projecting into said float and boat, universal joints to connect the opposite ends of said outer flexible tube with said short metallic tubes, valves arranged in the boat to open and close the inner ends of said tubes, a door hinged to the upper side of said float to open and close an air-inlet opening formed in the latter and means to open and close said door from within the boat, substantially as described.

4. In a submarine boat, housings arranged on the top or deck near each end thereof, seats formed in said housings, hollow floats adapted to be engaged with said seats, screws adapted to work through packed bearings in the top of the boat, nuts secured to said float and adapted to be engaged by said screws to hold the float in place in said seats, when the boat is afloat, chains to secure said floats to the boat when the former are released from the seats and the boat submerged, means whereby said chains are swiveled to the boat and to the float, inner and outer flexible air-supply tubes, universal joints to connect the opposite ends of said outer tube with said float and boat, a door hinged to the top of the float to open and close an inlet-opening in the latter, means to open and close said door from within the boat, and valves arranged in the inner ends of the tubes to open and close the latter, substantially as described.

5. In a submarine boat, housings arranged on the top or deck at each end of the same, hollow floats seated in said housings, screws, adapted to be operated from within the boat to secure the floats in said seats when the boat is afloat, drain-cocks arranged in said housings, chains to secure said floats to the boat when the latter is submerged and the floats released from their seats, rings connected to the outer ends of said chains, means whereby said rings are revolvably connected to said boat and float, inner and outer flexible air-supply tubes, universal joints arranged on the opposite ends of said outer tubes, metallic tube-sections connected to said joints and adapted to be screwed into the float and top of the boat, thereby connecting said outer tubes with the float and boat, bracing bands or collars arranged on said tubes and connected to said chains, valves arranged in the inner ends of said tubes to open and close the same, a pump

adapted to be connected to the inner end of said outer tube within the boat, a door hinged to the upper side of the float to open and close an inlet-opening therein and cords or ropes connected to said door and adapted to work through said outer tube whereby said door may be opened and closed from within the boat, substantially as described. 25 30

6. A submarine boat having a housing forming a chamber and provided with a seat-opening, a float adapted to be seated in said opening, a flexible element connecting the boat and the float, and means operated from within the boat, to secure the float to the housing and to release it therefrom. 35

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM J. O'HAIRE.

Witnesses:

JEREMIAH O'CONNOR,
ALBERT J. HAWKINS.