(No Model.)

O. R. INGERSOLL.

BOAT.

No. 421,170. Patented Feb. 11, 1890.

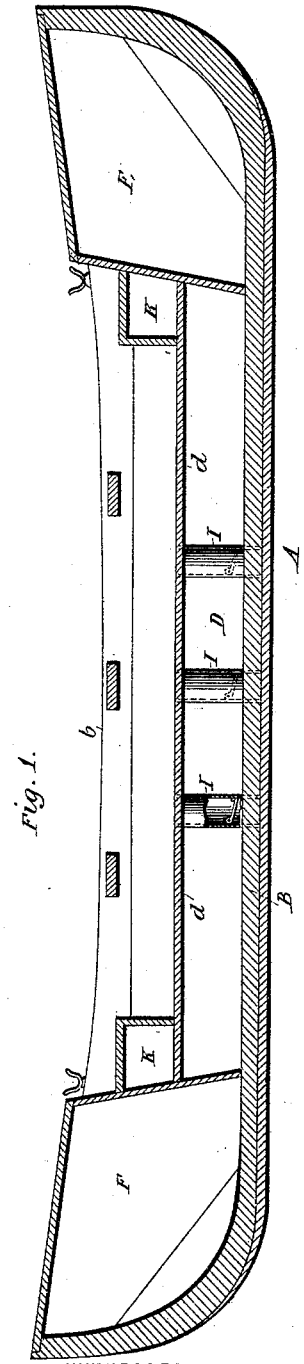

Fig. 1.

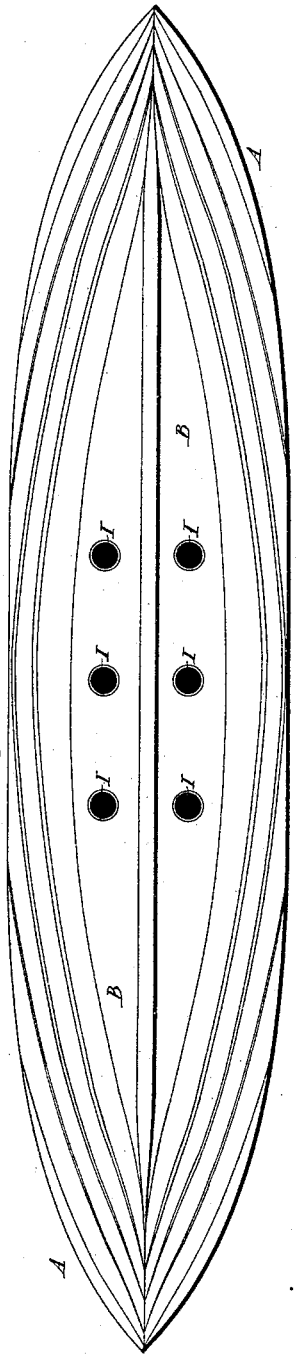

Fig. 2.

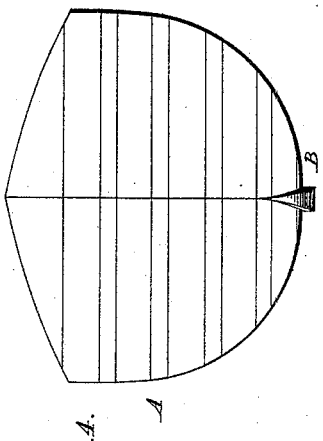

Fig. 4.

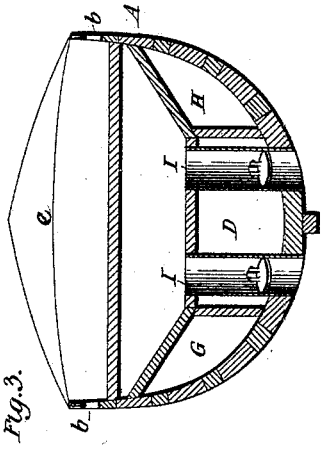

Fig. 3.

WITNESSES:

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HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

OLIVER ROLAND INGERSOLL, OF BROOKLYN, NEW YORK.

BOAT.

SPECIFICATION forming part of Letters Patent No. 421,170, dated February 11, 1890.

Application filed November 7, 1889. Serial No. 329,537. (No model.)

To all whom it may concern:

Be it known that I, OLIVER ROLAND INGERSOLL, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Boats, of which the following is a specification.

The objects of my invention are to produce a boat that will always right itself and free itself of water, no matter how rough the sea or how strong the wind may blow. This I accomplish without the ordinary weighted keel and great universally cumbersome boats now employed, and without the heavy ballast and weights sometimes used, thus producing a light metallic life-boat that can be used on shipboard and on the coast readily, as the ordinary whale-boat. I attain these objects by producing the action of self-righting by gradually increasing the thickness of the outer plating or planking of the boat from the gunwale to the center line of the bottom of the keel-line, and thereby increase the weight of the plating in a special manner, so as to balance and self-right the boat.

My boat has a very flat central bottom and cross-section, with very sharp water-lines toward the bow and stern, which are both of the same form, so as to make the boat what is termed "double-ended."

Referring to the accompanying drawings, Figure 1 is a longitudinal section of the improved life-boat. Fig. 2 is a bottom view of the boat. Fig. 3 is a vertical cross-section of the boat taken through the vent-tubes. Fig. 4 is an end view of the boat.

The hull of the boat has its outer plating B made of gradually-increasing thickness and of correspondingly-increasing weight from the gunwale *b* to the center line *c* of the boat, whereby it is always rendered self-righting.

The base-line of the boat is a horizontal line, and the midship section is very full, and from it the cross-sections are gradually reduced in each direction, as shown in Fig. 2, so as to make the shape of the bow and stern the same, and thereby form a double-ended boat, which can go in either direction with the same facility. The water-lines are very fair and sharp, and thereby much less power is required to row the boat through a rough sea or breakers. Under the floor *d* of the boat is formed a longitudinal central air-chamber D, which may be used as a locker for provisions or water, if desired, or it may be only an air-chamber. At each end of the boat is also formed an air-chamber E and F, and in them may be arranged a cockpit of suitable size and depth for a man to stand in and steer the boat. On each side of the air-chamber D are arranged longitudinal air-chambers G and H, having their upper sides made inclined, as seen in Fig. 3, by which means any water that may be shipped will readily escape into the sea. All of these air-chambers should be hermetically sealed to prevent any air from escaping. Passing through the chamber D are the vent-tubes I, which extend through the bottom of the boat to allow all the water breaking into the boat to escape through the bottom, and these tubes may be provided with suitable self-closing valves to prevent any water from entering through the bottom, while at the same time permitting it to escape from above. The upper sides or tops of the air-chambers E and F are rounded off crosswise, as seen at *e* in Fig. 3, so as to offer no resistance to the water or wind and form cylindrical trip-surfaces.

The boat can be thrown from the side of a vessel or launched regardless of ordinary precautions, for it will right itself and free itself of water in ten seconds.

My improved life-boat does not require the use of horses and wagons when used on shore, and not so many men when it is desired to launch it, and can be much easier handled, and will float in much shallower water than those now employed, and, being of light iron, corrugated, so to speak, with the hammer, possesses enormous strength, rendering it proof against the concussion from the firing of guns on shipboard or damage from swinging against the sides of the vessel, and it is unaffected by the weather, and hence will not shrink, swell, or rot, or become leaky, as do wooden boats. The inside bottom or floor of the boat being by its buoyancy always above the water-line, the water having been shipped must of necessity escape through the vent-tubes into the sea. If desired, at each end of

the boat may be arranged small lockers K, serving at the same time for seats.

While the capacity of the boat to right itself is chiefly and certainly due to the peculiar construction of the hull, as I have stated, yet the buoyancy of the end chambers co-operate to render such self-righting action quicker. In this action the tripping effect of the cylindrical surfaces of the end air-chambers co-operates with the peculiar contour or model of hull to effect its self-righting. While the thickness of the bottom plating and the thinness of the hull at the gunwale will be varied according to the size of the boat, yet if such thickness were made at the bottom plating—say 3 No. 16 wire-gage iron and the succeeding sheets or strakes Nos. 18, 20, &c.—it would effect the desired object.

For steering the boat I provide swivel oarlocks on the sides of each end.

I claim as my improvement—

A metallic boat having its hull constructed of plates made of gradually-increasing thickness from the gunwale to the keel, substantially as described, for the purpose stated.

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

OLIVER ROLAND INGERSOLL.

Witnesses:

E. VAN VELSOR,

PHIL COLLINS.