

(No Model.)

2 Sheets—Sheet 1.

J. F. GREEN.  
LIFE BOAT.

No. 461,871.

Patented Oct. 27, 1891.

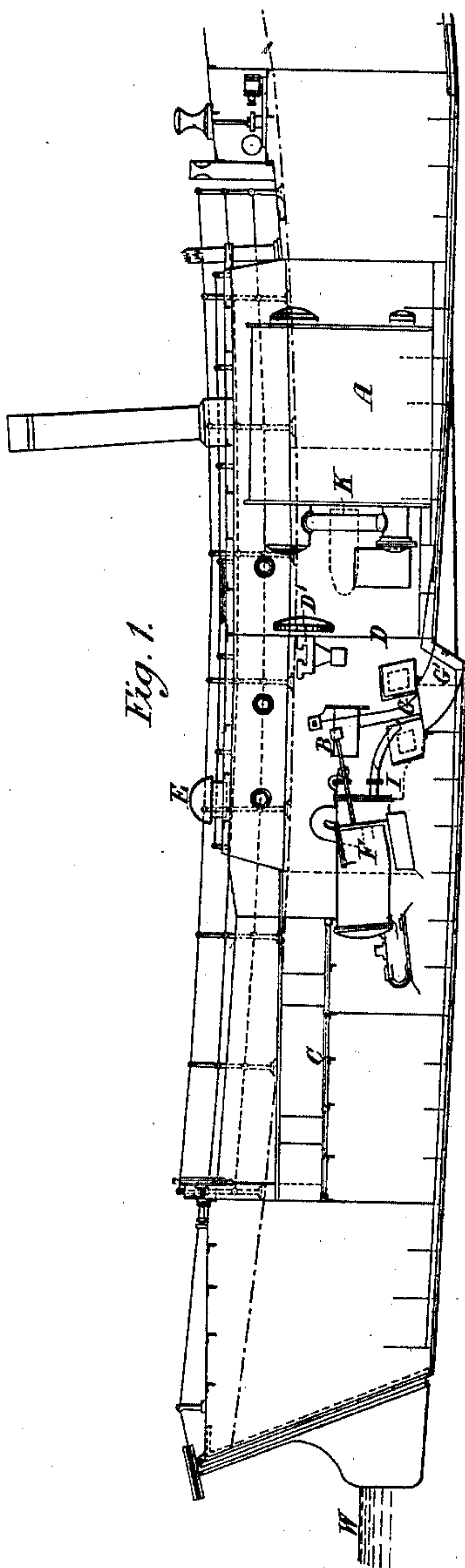


Fig. 1.

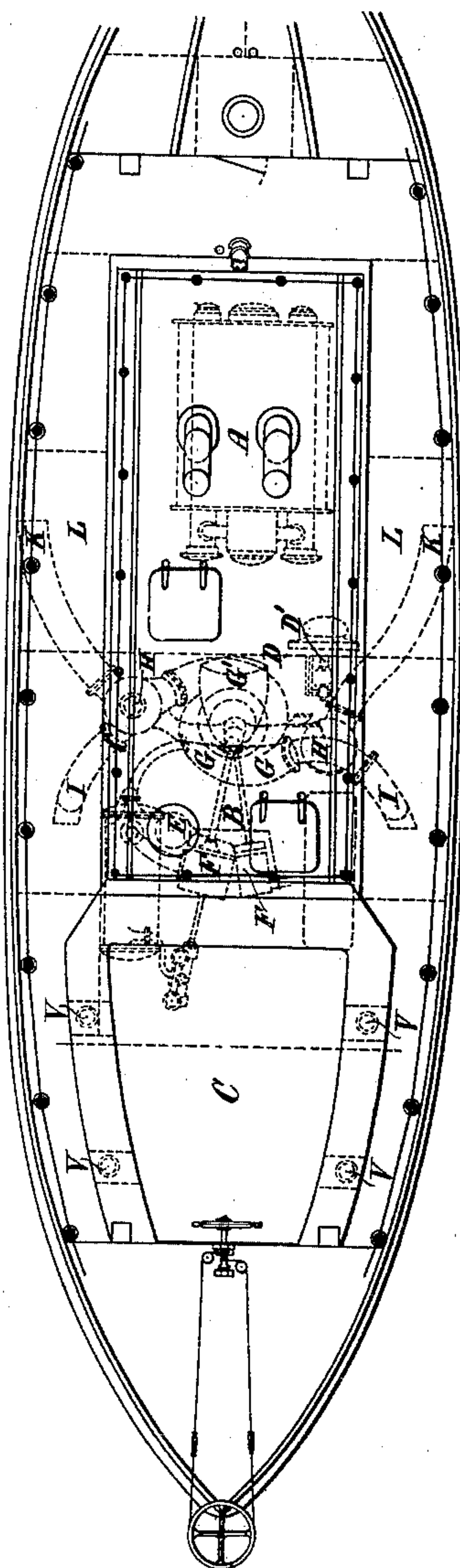


Fig. 2.

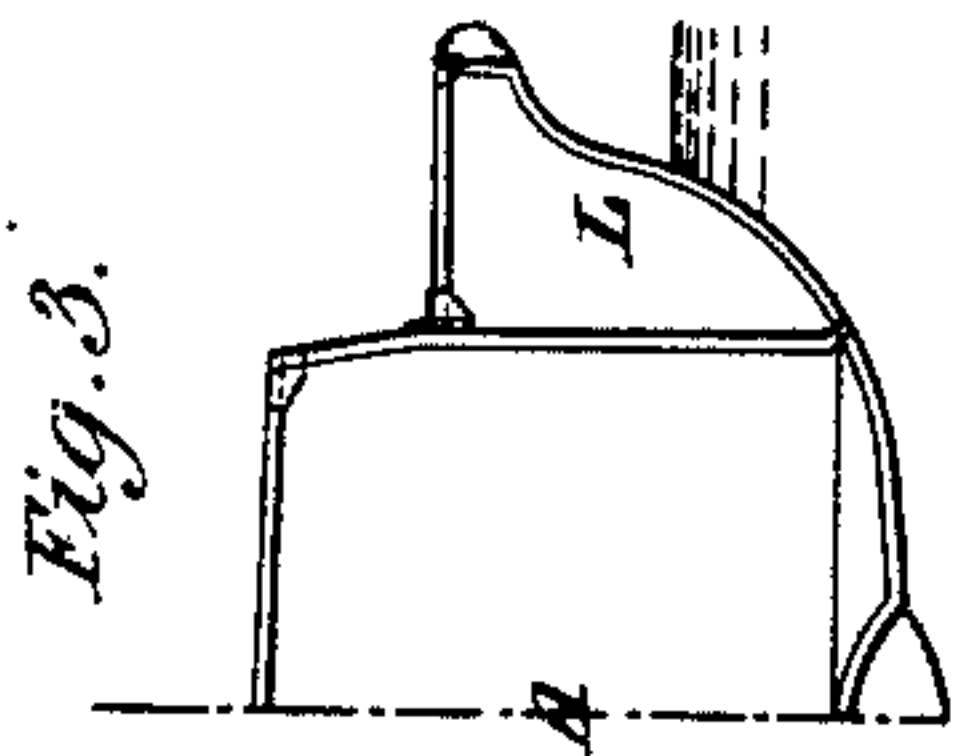


Fig. 3.

Witnesses,

Baltus DeLong  
B. W. Miller.

Inventor.  
Joseph Fletcher Green.  
By his Attys.

Baldwin Davidson & Wright

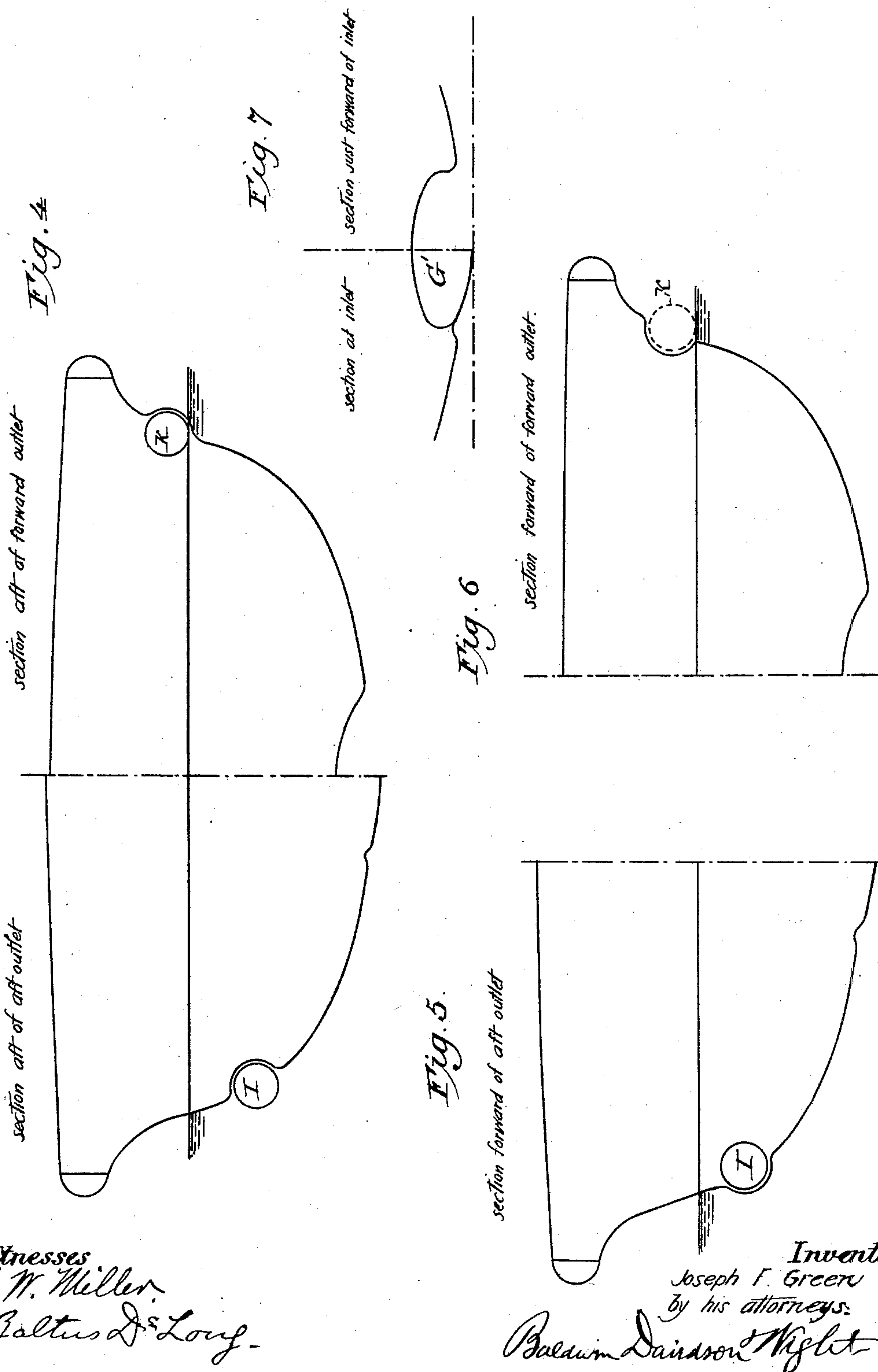
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# UNITED STATES PATENT OFFICE.

JOSEPH FLETCHER GREEN, OF LONDON, ENGLAND.

## LIFE-BOAT.

SPECIFICATION forming part of Letters Patent No. 461,871, dated October 27, 1891.

Application filed April 3, 1891. Serial No. 387,505. (No model.) Patented in England February 16, 1889, No. 2,777.

*To all whom it may concern:*

Be it known that I, JOSEPH FLETCHER GREEN, a subject of the Queen of Great Britain, residing at Blackwall, in the county of Middlesex, a member of the firm of Richard & Henry Green, ship-builders, of Blackwall Yard, London, England, have invented certain new and useful Improvements in Life-Boats to be Propelled by Hydraulic Mechanism Actuated by Steam-Power, (for which I have obtained Letters Patent in Great Britain, No. 2,777, dated February 16, 1889,) of which the following is a specification.

This invention has for its object a life-boat to be propelled by hydraulic mechanism actuated by steam-power.

A life-boat constructed in accordance with my invention is represented by the annexed drawings.

Figure 1 is an elevation. Fig. 2 is a plan. Fig. 3 is a midship-section, and Figs. 4, 5, 6, and 7 are diagrams illustrating the form of the hull at the inlet and outlet passages.

The life-boat is constructed of steel or other suitable material subdivided into water-tight compartments. The steam for actuating the hydraulic mechanism is generated in a Thornycroft's tubulous boiler working at a pressure of one hundred and fifty pounds per square inch, fitted with a furnace for burning coal, coke, or wood. It will be readily seen that any suitable boiler may be employed. The boiler is placed in one of the separate midship water-tight compartments A, in which a continual pressure of air is kept up by means of a fan D', placed in the upper part of the after-boiler-room bulk-head D and worked by a separate steam-engine and drawing the air through the engine-room from a mushroom ventilator E, placed in the casing over the engines. This fan is not, however, essential for the working of the engines, which can be driven also at a natural draft.

In the compartment B, immediately abaft the boiler-room, is placed a compound surface condensing-engine F F, which works a horizontal centrifugal pump G G, fixed in the bottom of the boat. Although a particular type of engine is used, any suitable engine can be employed for driving the pump. This pump receives water from below the bottom of the boat through a projecting scoop-shaped

inlet G' and ejects it through the sides of the vessel, and in this consists the motive power. The pump-inlet G' is in the form of a scoop projecting below the bottom of the boat and conveys the water without shock to the pump G G at a velocity nearly equal to the speed of the boat through the water. The cross-sections of the hull in the neighborhood of the inlet G' are so arranged that the immersed section of the hull abaft the inlet is larger in area than the sections in front of it by an amount equal to the area of the orifice or inlet G', so as to give a clean run, as illustrated in the diagram, Figs. 4, 5, and 6. The water is delivered by the pump G through the discharge-pipes, one on each side of its periphery. At a short distance from the periphery of the pump each of these branches is divided into two at H, one pair of which I I lead aft and the other pair K K forward. These sub-branches give go-ahead or astern motion to the boat, as is required. At the point where the sub-branches I I K K divide there are valves H H, which can be actuated from the deck and which direct the water into either of the branches at will, according as it is desired to drive the vessel ahead or astern or turn her round or for steering. The nozzles on the go-astern discharge-pipes K K are above the water-line W W; but the go-ahead nozzles I I discharge below water. These below-water nozzles I I are partly built into the side of the boat, which is recessed to receive them, and the sectional area of the hull abaft the nozzles I I is less than the sectional area forward of them by an amount equal to the area of the nozzles. The coal is placed in water-tight wing-compartments L L on either side of the boiler-room. The passengers are carried in a sunk deck aft C, kept dry by means of automatic non-return relieving-valves V V V V.

What I claim is—

1. A steam-propelled life-boat having water-tight compartments and provided with an open well with sunk deck and relieving-valves, an engine, and a boiler contained in the water-tight compartments forward of the sunk deck.

2. A steam-propelled life-boat having inclosed engine and boiler compartments separated by a bulk-head having in its upper part



a passage-way through which air is drawn from the upper part of the engine-compartment and supplied to the boiler-compartment, in combination with means for propelling air through the passage-way, whereby security is obtained against the entrance of water into the boiler-compartment.

3. A steam-propelled life-boat having a centrifugal propelling-pump, a scoop-inlet connected therewith and arranged centrally in the bottom of the boat amidships and opening toward the front, and outlet-passages connected with the pump.

4. A steam-propelled life-boat having a hull with an inlet-passage in the bottom, outlet-passages for propelling the boat forward, opening at the sides of the hull below the water-line, and outlet-passages for propelling the boat backward, opening at the side of the hull above the water-line, all of said passages being connected with the pump within the boat, the form of the hull being such that the section is increased abaft the forward and inlet passages by about the area of the passages and decreased abaft the after-passages in like proportion, so as to give a clean run.

5. In a steam-propelled life-boat, the combination of a hull provided with water-tight compartments, a pump contained in one of these compartments, an engine connected with the pump and propelling it, an inlet-passage in the bottom of the boat, and outlet-passages at the side of the hull opening in opposite directions to propel the boat backward and forward.

6. In a steam-propelled life-boat, the combination of a hull provided with water-tight compartments, a pump contained in one of these compartments, an engine carried by the boat and connected with the pump and operating it, an inlet-passage in the bottom of the boat, outlet-passages for propelling the boat forward, opening at the sides of the boat below the water-line, and outlet-passages for propelling the boat backward, opening at the sides of the boat above the water-line, all of said passages being connected with the propelling-pump, substantially as set forth.

JOSEPH FLETCHER GREEN.

Witnesses:

HERBERT TURMAGE CHIGNALL,  
WALTER REGINALD MOUNT.