

Sheet 1. 3 Sheets

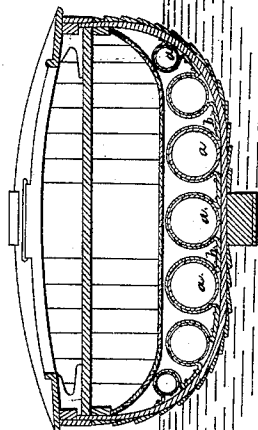
J. Francis.

Life and Anchor Boat.

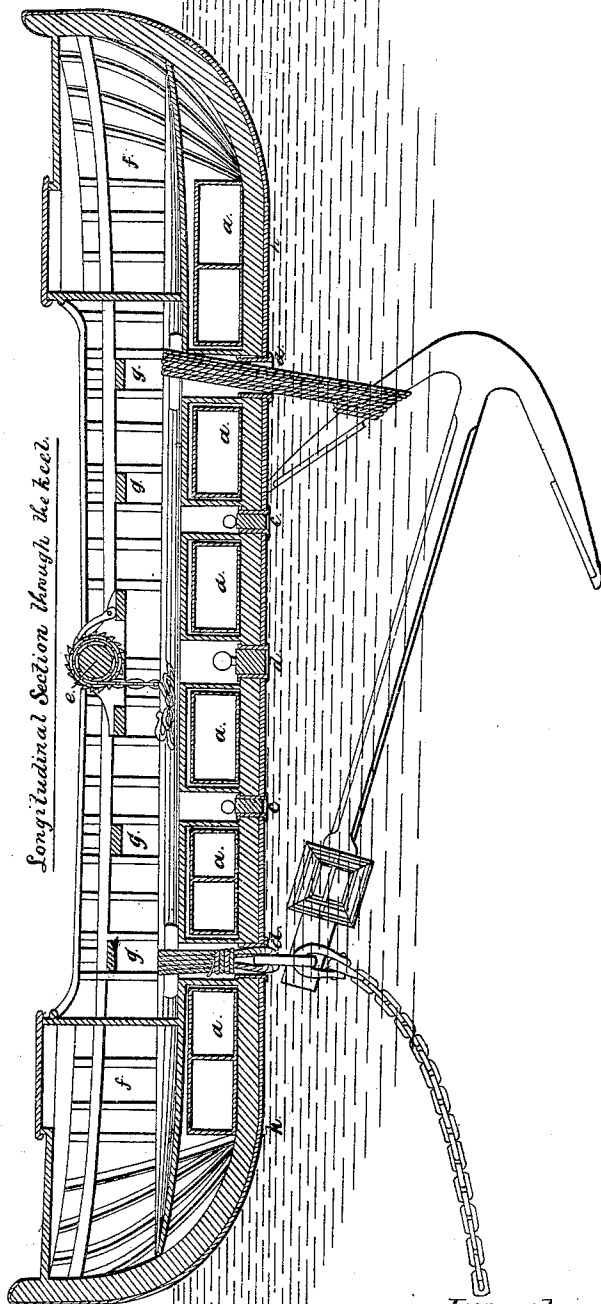
N^o 1,067.

Patented Jan. 11, 1839.

Section at A. B.



Longitudinal Section through the keel.



Witnesses.

Wm. Hudson
J. M. O'Leary

Inventor.

Joseph Francis

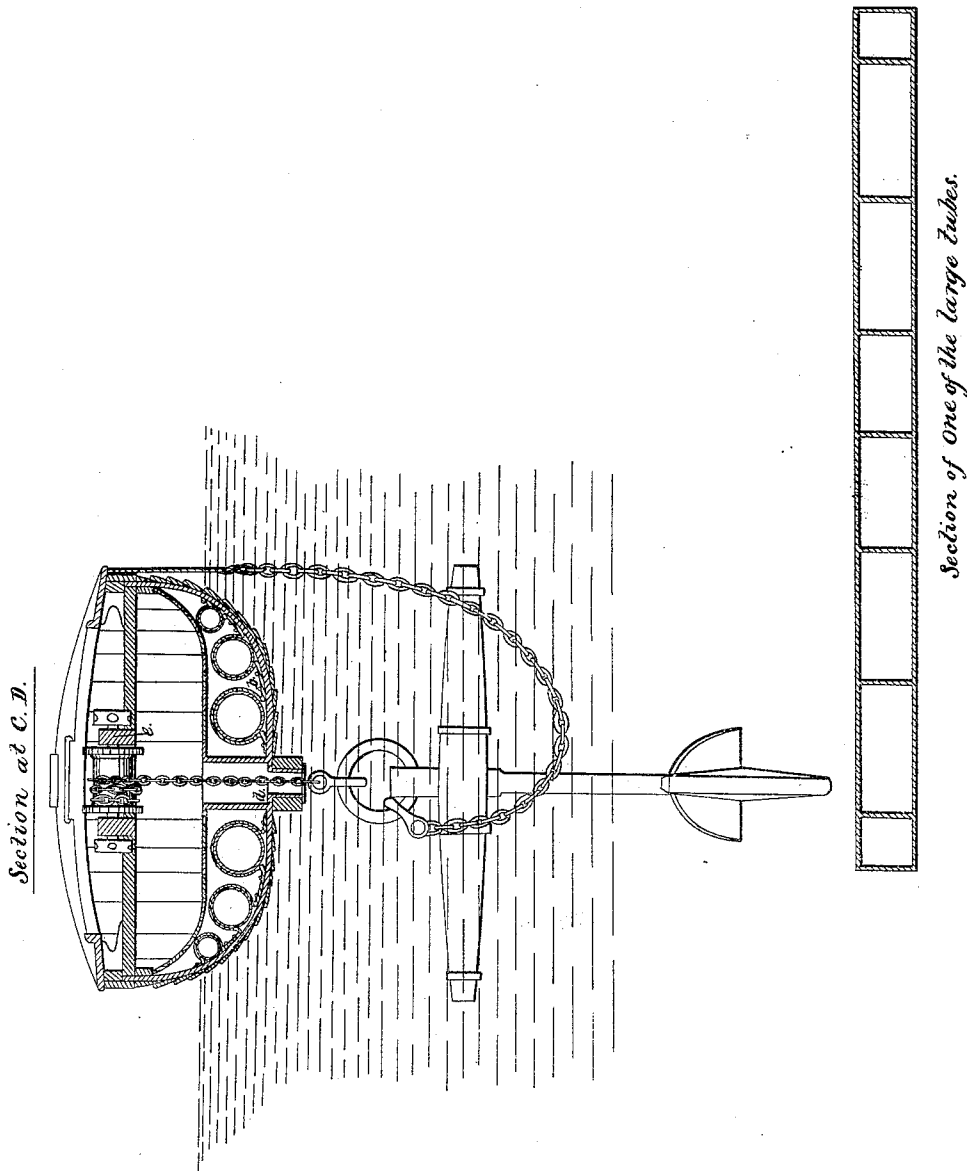
Sheet 2. 3 Sheets.

J. Francis.

Life and Anchor Boat.

N^o 1,067.

Patented Jan. 11, 1839.



Witnesses.

E. M. Hudson
J. M. Hale

Inventor.

Joseph Francis

Sheet 3. 3 Sheets.

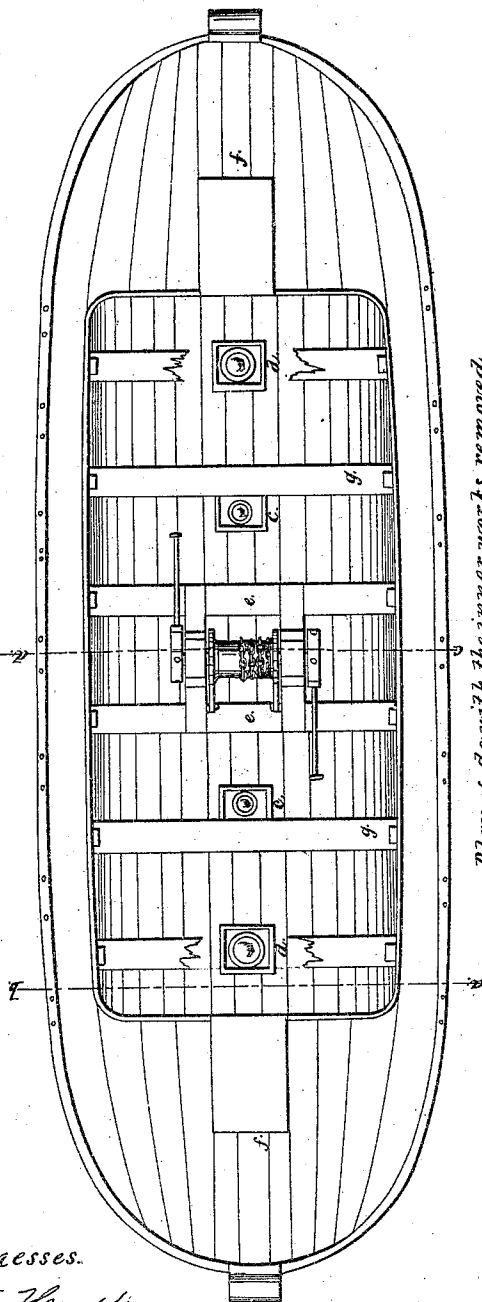
J. Francis.

Life and Anchor Boat.

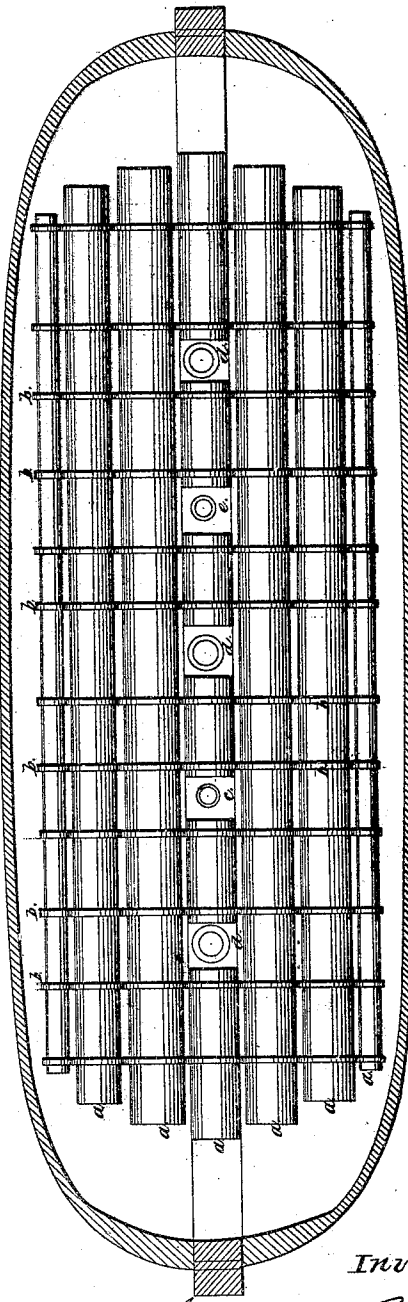
N^o 1,067.

Patented Jan. 11, 1839.

Plan of Boat. Complete.



Plan of do. with the inner works removed.



Witnesses.

Edw. Hudson
J. M. Hobbs

Inventor.

Joseph Francis

UNITED STATES PATENT OFFICE.

JOS. FRANCIS, OF NEW YORK, N. Y.

LIFE AND ANCHOR BOAT.

Specification of Letters Patent No. 1,067, dated January 11, 1839.

To all whom it may concern:

Be it known that I, JOSEPH FRANCIS, of the city of New York, in the State of New York, have invented a new and useful Improvement in Boats, Steamboats, and other Vessels, which I call "Francis's Improved Life and Anchor Boats," of which the following is a true and exact description, viz:

The boat or other vessel, being constructed of any convenient form and size, copper or other metallic tubes, either square or cylindrical, of a size and form proportionate to the boat, should be placed in the bottom of the boat lengthwise and firmly secured to the knees, ribs, or other timbers by metallic bands or straps or in any other convenient mode, so as to render them immovable, and said tubes or cylinders should be air tight and be charged with any gas, or with atmospheric air, at any suitable density, according to the thickness and strength of the material of which they are composed, the object being to sustain said tubes or cylinders against the inward pressure of the water and prevent a collapse when they are submerged. Said tubes or cylinders should be made in several pieces, separate and entire, or with divisions made tight at short intervals, so that if any one or more of the pieces or divisions should be accidentally broken the remainder may retain the sustaining power, and said tubes may be of one or of different sizes, and if the latter, the largest should be placed nearest the keel and bottom, and the smaller ones should taper up the sides toward the gunwale, care being taken to keep the greatest buoyant or sustaining power in the bottom of the boat and as low as possible. The tubes or cylinders being thus placed and secured they are to be tightly sealed, or floored over, to secure them from accident, and the sealing or flooring forms the inner side of the bottom of the boat or vessel. One or more holes of a proper size in proportion to the boat should be made in and through the bottom thereof, so that when the boat is filled with water by shipping a sea, or otherwise, the holes may be opened by removing plugs or other fastenings, when the boat will rise, by means of the buoyant power, the water will escape through the holes, and the inside of the boat above the flooring will remain above the surface and dry.

The above is the manner in which I now prefer to apply air tight tubes or cylinders, but, if preferred, they may be of a proper

size and form and may be placed athwart the boat or vessel, instead of fore and aft, or lengthwise, and the size of the tubes and the quantity of gas or air to be applied as a buoyant power is to be regulated by the size of the boat or vessel and the weight required to be sustained, and no buoyant power should be applied in tanks in the bow or stern, nor immediately under the thwarts or around the gunwale.

The advantages of this mode of construction are as follows:—1st, the boat or vessel having a heavy metallic or other keel the tubes act as ballast when the inside is free from water; 2d, the buoyancy being close in the bottom, the boat or vessel will be raised thereby to the surface, so that when the holes are open the water will only rise between the proper bottom and the inside flooring or sealing, and any persons in the boat will remain dry for any length of time without the necessity of bailing; 3d, should the boat be capsized or turned bottom upward, as there is no buoyancy applied to the top or sides, there is nothing to prevent either side from descending into the water, and by aid of the heavy keel and the metallic tubes in the bottom, which then act as ballast, the boat may be easily returned to her proper position and righted by men in the water, when the holes being opened in the bottom the boat will rise and free herself from water, and she will keep free from water, so as not to endanger the lives or health of persons inside, although the bottom should be extensively stove in. These are great advantages, never hitherto attained in any life boat or other vessel of any construction, and in case of ships being foundered or otherwise lost at sea the improvement will be of vast utility in saving life and preserving the comfort of persons in the boat.

In constructing boats upon the principle hereinbefore described, for the purpose of taking out ship's anchors, when they are too heavy to be taken inside of the boat, one or more holes should be made in and through the bottom of the boat, with plugs or other convenient stoppers, so they may be opened or closed at pleasure, and said holes should be of a suitable size to permit a hawser or other rope to run freely through them, according to the size necessary to sustain the weight below and beneath the boat. Where an anchor is to be taken out suspended per-

pendicularly under the boat, the hole for the hawser or rope should be as near as possible to the center of the boat or to the center of gravity, so as to preserve a proper balance or trim of the boat in the water, when the hawser or other rope being passed through the hole it may be attached to the anchor stock and by a windlass or any convenient purchase or apparatus placed over the hole, inside of the boat, the anchor may be drawn and held suspended underneath the boat. When it is desired to take out an anchor in a horizontal position under the boat, either from shallowness of water or any other cause, there should be two holes of proper size, each to admit one hawser or rope to be attached to the stock and another to the flukes of the anchor, and said holes should be in such position that when the anchor is suspended the boat will be properly trimmed, the flukes or heaviest part of the anchor being taken up near the center and the stock farther forward or aft, as the case may be, and the distances from the center must be regulated by the form of the boat and the weight and length of the anchor, and the anchor may be drawn up by a fixed and permanent windlass or any other convenient purchase or apparatus over each of the three holes or any two of them or by one such

movable contrivance for drawing up one part at a time till the anchor is brought close to the boat in a horizontal position.

The arrangement of the buoyant power and of the weight to be taken out as hereinbefore described will enable ships on shore or otherwise in distress to send out anchors with safety to the men when no other boat or means could accomplish the object in a heavy sea, for, though the boat may be often filled with water she will immediately rise and become free, and though her bottom may be stove in extensively and in various places yet with a sufficient number of tubes or cylinders or divisions of said tubes she would still sustain the weight of the anchor and would be a life boat for the seamen on board.

What I claim as my invention, and desire to have secured by Letters Patent of the United States, is—

The improvement of boats; and said improvement consists in the adaptation and arrangement of air tight tubes, with holes in the bottom of the boat, in combination, and in the manner and for the purposes hereinbefore substantially set forth.

JOSEPH FRANCIS.

Witnesses:

CHAS. W. LOCKE,
WILLIAM WILEY.