

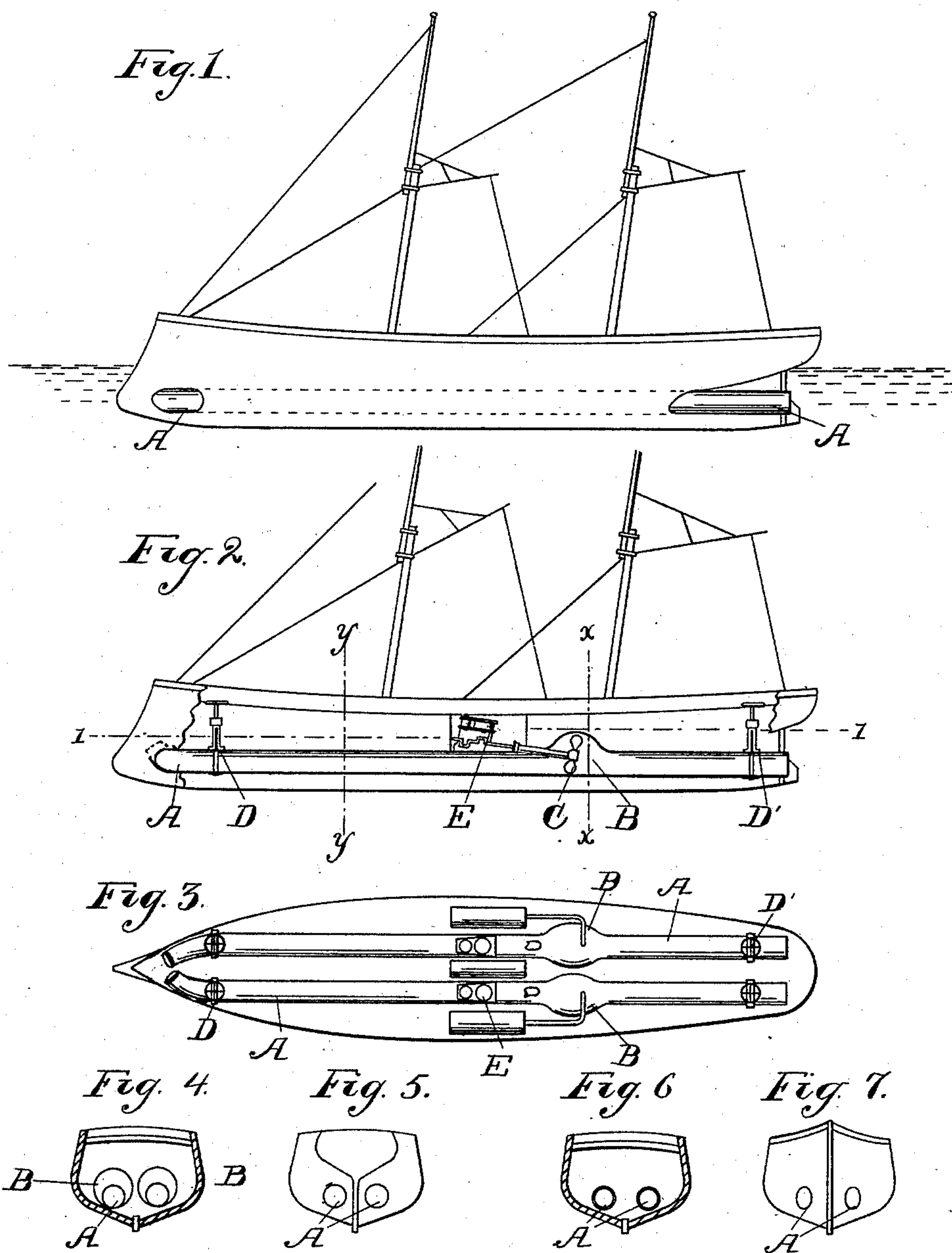
(No Model.)

2 Sheets—Sheet 1.

S. A. OWEN.
PROPULSION OF VESSELS.

No. 441,965.

Patented Dec. 2, 1890.



Attest.
John H. Redstone
Marcus S. Levi.

Inventor:
Samuel Albert Owen.

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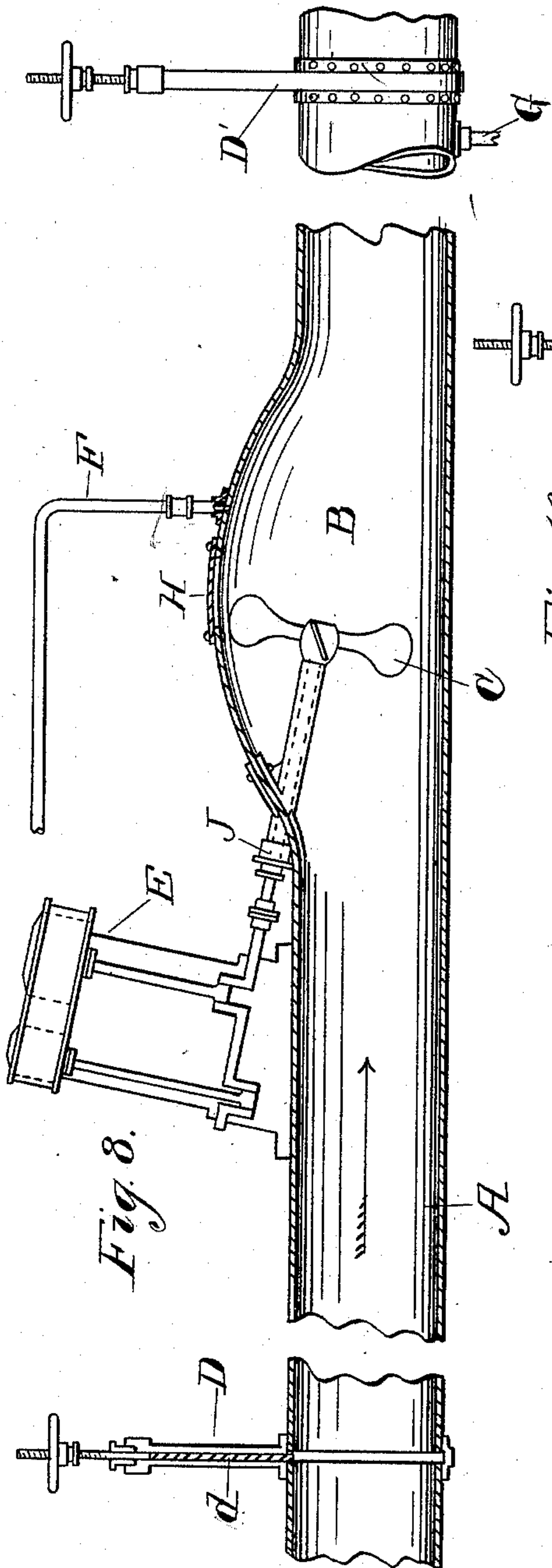
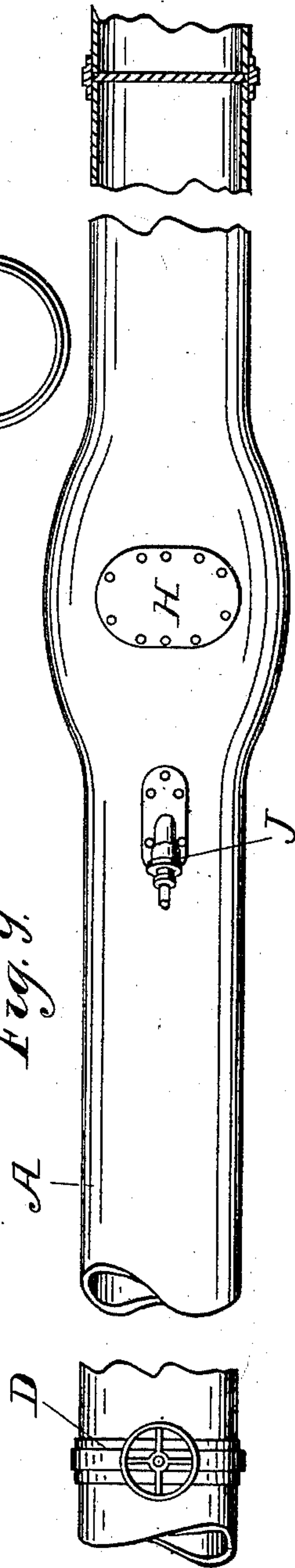


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

SAMUEL ALBERT OWEN, OF WEST BERKELEY, CALIFORNIA.

PROPULSION OF VESSELS.

SPECIFICATION forming part of Letters Patent No. 441,965, dated December 2, 1890.

Application filed August 5, 1889. Serial No. 319,802. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL ALBERT OWEN, a citizen of the United States, residing at West Berkeley, in the county of Alameda and State of California, have invented a new and useful Improvement in Vessels, which refers to its security against accident, its mode of regulating the buoyancy of the vessel, and manner of propelling the same, of which the following is a specification.

My invention will be more readily understood by reference to the accompanying drawings and the letters referring thereto.

Figure 1 is a side elevation of a vessel with my improvement attached; Fig. 2, a side elevation of the same with a portion broken out to show the interior arrangement more clearly; Fig. 3, a vertical plan view with the deck removed; Fig. 4, a cross-sectional view showing the hull cut through at the lines *xx*; Fig. 5, an elevation of the stern; Fig. 6, a cross-sectional view of the hull cut through at the lines *yy*; Fig. 7, an elevation of the bow; Fig. 8, an enlarged broken view of one of the tubes shown in section; Fig. 9, an enlarged broken plan view of one of the tubes, and Fig. 10 an end elevation of the tube.

The following is the construction of my improved vessel: I adapt the wave-line of the boat to the nature of the propelling power by means of any well-known construction. I generally construct two tubes of boiler-iron or other suitable sheet metal and place them upon either side of the keel so that they are equally distant from the same laterally. I form the chamber B by enlarging the tube A at that point to receive the propeller C, which is connected by means of a shaft through the stuffing-box J. I drive the propeller by means of any well-known suitable engine, such as is generally employed to drive propeller-shafts. H represents the caps or plates which close the man-hole opening into the chambers B. At either end of the tubes I place a valve or gate, (represented by D and D'), which are operated by screws *d* or other suitable device either by hand or power. The boilers may be placed at any point where most convenient and connected by a steam-pipe in the usual manner. I also connect the chamber, and consequently the tube A, with the boiler by means of any suitable steam-pipe F. I

construct gates or valves D and D' close to the ends of the tubes A and fit them steam-tight. I curve the tubes A at the forward part slightly inward toward the center of the bow or stem of the vessel and upward, so as to draw the water directly from the front of the bow and to lift instead of depress by the suction which is caused by the propellers.

I do not confine myself to any exact construction of engine or propellers; but to fully carry out my invention the tubes A must be constructed with the curvature at the forward end, and the enlargement forming the propeller-chamber and the gates or valves D and D' must be employed.

The following is the operation of my improved vessel: The propeller C being operated by any suitable power, as shown, the water is drawn in at the bow from a central and upward direction, thus decreasing the tendency to form a backward current of the water into which the bow of the boat is passing by taking away the water which usually forms the bow-swell and allowing it to flow in to suit the properly-constructed wave-line of the hull, and thus decrease the resistance of the water by its action against the sides of the hull. The water pouring out at the rear end of the tubes A strikes the dead water and forces the vessel forward. In case the vessel is grounded, the steam may be forced in from the boilers through the pipe F and all the water forced out of the tubes A, thus giving buoyancy to the vessel and floating it, as will be readily understood. It being understood that the valves D and D' are completely closed as soon as the water is expelled, consequently the buoyancy is similar to that produced by any air-chamber. The water may be emptied from the tubes A by means of pumps in case the hull is broken in and the vessel is sunken or in a sinking condition, thus raising the vessel at any time without resorting to other means. The cylindrical form of the tubes A and the fact of their being constructed of sheet metal render them free from liability to breakage and add materially to the strength and safety of the vessel. Where two tubes are employed, the vessel may be readily steered by means of the currents of water being operated separately, (a device already known to the art.)

By means of the propeller-chamber B and man-hole H, I can replace or duplicate the propeller at any time or place, in case of an accident, by simply forcing out the water and
5 opening the man-hole H, thus giving free access to the same.

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

10 The combination, with a vessel, of the two parallel pipes arranged therein and on the opposite sides of the keel, said pipes having their forward ends elevated and provided, re-

spectively, with an enlargement B, the gates D in said pipes, screws *d* for opening and closing the same, a steam-pipe leading from the enlargement of the pipes, the propeller C arranged in the enlarged portion of the pipes, and the man-hole in said enlargement, having a plate H for covering the same, all adapted
15 to operate substantially as specified. 20

SAMUEL ALBERT OWEN.

Witnesses:

JOHN H. REDSTONE,
MARCUS S. LEVÈ.