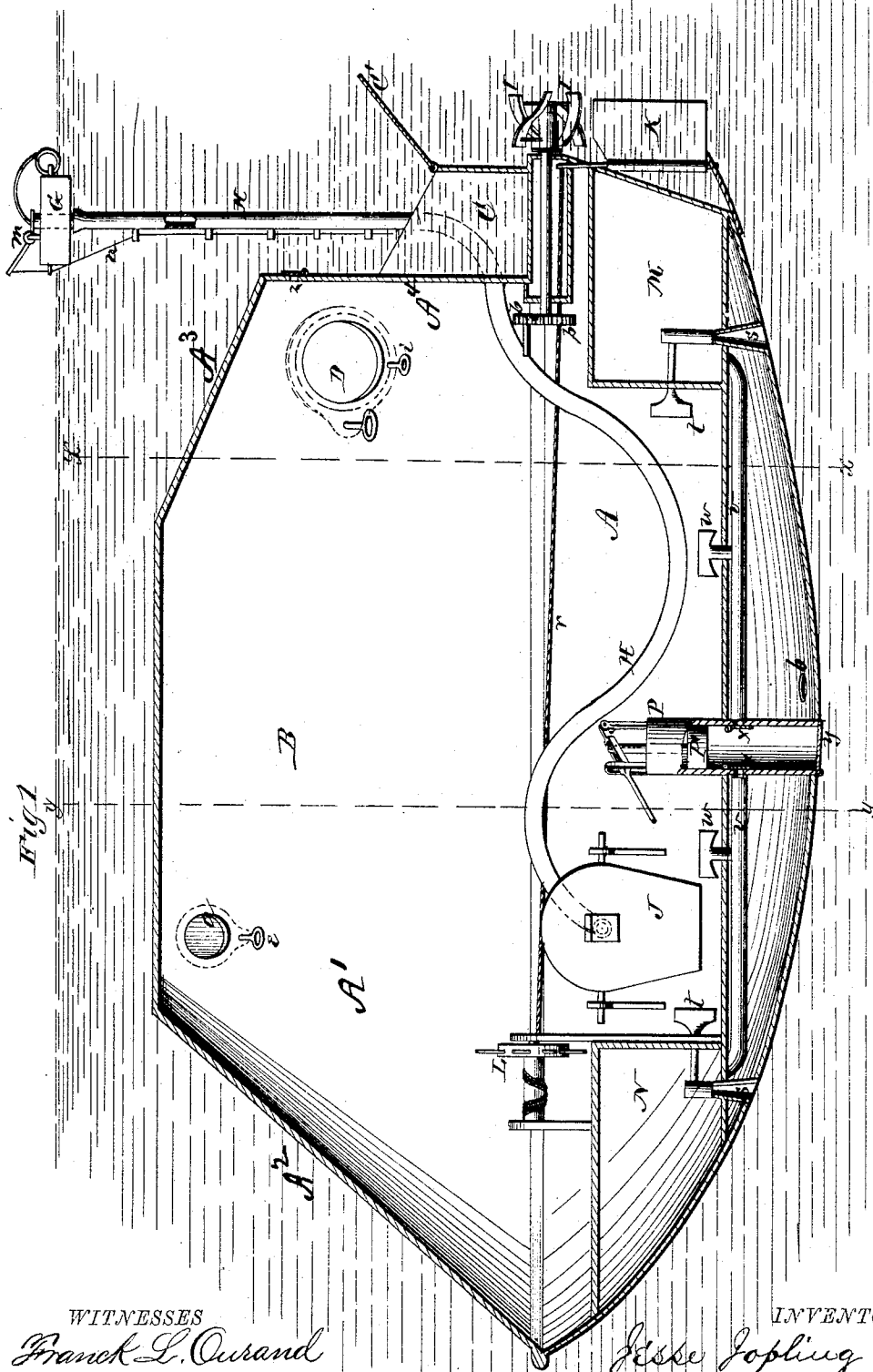


J. JOPLING.
SUBMARINE TORPEDO-BOAT.

No. 173,018.

Patented Feb. 1, 1876.



WITNESSES
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JESSE JOPLING, OF LONGWOOD, MISSOURI.

IMPROVEMENT IN SUBMARINE TORPEDO-BOATS.

Specification forming part of Letters Patent No. **173,018**, dated February 1, 1876; application filed November 24, 1875.

To all whom it may concern:

Be it known that I, JESSE JOPLING, of Longwood, in the county of Pettis and in the State of Missouri, have invented certain new and useful Improvements in Submarine Torpedo-Boats; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a torpedo-boat, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a longitudinal vertical section of my torpedo-boat. Figs. 2 and 3 are transverse vertical sections of the same through the lines *x x* and *y y*, respectively, of Fig. 1.

A represents the hull of the boat, in the form of an ordinary yawl, and provided with a roof, B, made angular or sharp, resembling the rafted roof of a house—that is to say, having the sides *A*¹ *A*¹ inclined from the hull, and connected together at the top in cone shape, with the front *A*² also inclined from the bow to the point of connection of the parts *A*¹. The rear portion of the roof is also inclined downward, as shown at *A*³, while the stern is made vertical, as shown at *A*⁴, down to the hull. By this construction of the roof heavy substances that might be thrown from ships when the boat was in position to be struck by them will glance off without injuring the same. The upper half or roof B is provided with ports or windows *a*, filled with glass for viewing things above the boat, and in the bottom is a port, *b*, also filled with glass, for seeing the bottoms of harbors, channels, or shallow seas. The ports *a* have plates or shields *d* to protect the glass, and are so arranged that the inmates of the boat can turn the shields off or over the glass, at will, by means of keys *e*, extending from the inside of the boat to the shields. At the stern there is an offset in the roof B, forming two chambers, C C, preferably of unequal size, the largest being designed for carrying torpedoes, and the smaller for carrying the

air-pipe. They are covered with lids C', and held down by a catch, *f*, but not intended to be water-tight. Near these chambers, on one side of the roof B, is a port-hole, covered by a shield, D. At one side of this port-hole is hinged a ring, *h*, which is fastened down by means of a catch, *i*, in such a manner that the ring can be loosened or fastened from the inside by the inmates of the boat at will. To the ring *h* is securely attached a wrecker's dress, E, to the top of which is fastened a plate, *k*. The dress E is of any suitable construction, cut off a little below the waist, and its lower end sewed securely to the ring *h*. It can be drawn into the boat, the plate *k* covering the ring *h*, and then the shield D placed over the whole.

By means of this dress the operator inside of the boat can with his head push up the circular plate *k* until he can put his arms into the sleeves of the dress and force himself out of the boat to his waist, or farther, if necessary, and can with ease reach the magazine C, take out a torpedo, and attach it or open the air-pipe chamber and send the float G, attached to the air-pipe H, to the surface of the water when the boat is far below. On the upper end of the air-pipe H is a spring-valve, *m*, having a cord, *n*, attached to its lever end. By pulling on this cord the valve *m* is opened, thereby opening the air-pipe, so that by working the air-pump J, attached to the other end of the air pipe H within the boat, and having suitable valves, a supply of fresh air may be discharged inside of the boat. When a sufficient quantity of fresh air has thus been admitted the operator draws down the air-pipe, placing it securely in its chamber. Then he draws himself into the boat and out of the dress, placing the circular plate *k* on the ring *h* in its proper place, and then can turn the shield D over all, as desired, for safety. This port is also the door of ingress and egress to the boat. When it is desired to open this door the catch *i* is turned off the ring *h*, and everything put in or taken out of the boat, as desired. The boat is driven by twin propellers I I, geared together by spur-wheels *p p*, and hence, to drive in the same direction, one propeller is made a right-hand and the other a left-hand screw. The rudder K is placed under the propellers in the stern, and worked

by a pilot-wheel, L, with cords *r* attached to its helm inside the boat, by which means the boat can be turned as desired.

The course of the boat is directed by the compass, the bearing and distance being taken before entering the boat. Its speed is ascertained by trial and time. Under the spur-wheels *p*, in the stern of the boat, is a chamber, M, for holding water, said chamber having a passage, *s*, through the bottom of the hull A, and in this inlet-passage is a valve or faucet, *t*, operated from the inside of the boat, for admitting or shutting off the water. In the bow of the boat, under the pilot-wheel, is a similar chamber, N, provided with a similar passage and valve.

In order to illustrate the use of these water-chambers in water-logging the boat nicely, suppose everything necessary for the trip has been taken into the boat, and the door D shut and made water-tight. The valves *t* to the water-chambers are then opened, and the water allowed to flow in until the boat sinks with its top on a level with the surface of the water, when the valves are closed again. The water is confined in these chambers and not allowed to flow into the boat, which would render it unmanageable. Now, if sufficient changeable ballast has been taken on board, the boat is ready to dive down to the desired depth. The changeable ballast may consist of extra men or heavy weights with hooks, that may be put forward in the bow and depress it to an angle of twenty or thirty degrees, and by applying the power of one man to the wheels, driving the propellers with proper speed, the boat will quickly reach the desired depth. Then, by changing the ballast or weights, the boat can be brought to a level, and the direction to the object taken. Then, when it is desired to rise to the surface it will be necessary to put the changeable ballast in the stern and depress it, which will elevate the bow, and the surface is soon gained.

To raise the boat high enough above the water to get out, the following mechanism is put into operation: P is a pump located in the middle of the boat, and connected with the water-chambers M N by pipes *v v*, each having a stop-cock, *w*, to open and close the same. On the ends of the pipes *v*, inside the pump, are valves *x x*, so arranged that when the stop-cocks *w* are opened the water from the chambers runs into the pump as the solid

plunger P' is raised, the valves *x* opening; but as the plunger is forced down the valves *x* close the ends of the pipes *v*, and the water is forced out of the boat through the valve *y* in the bottom of the pump. By thus continuing to operate the pump the chambers will soon be emptied, and the boat will be sufficiently above water to allow all hands to go ashore dry-shod.

The air-pump J is in the form of a small bellows, having one inside and one outside valve. By working this pump the air will be forced into the boat, and the impure air forced out of the boat at the ventilator *z* at the top of the stern of the boat.

It will thus be seen that the boat can be supplied with fresh air when below the surface of the water, and the boat can reach any ship that can be seen from shore, and sink it with a torpedo without its being known by the ship's crew until the explosion takes place.

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

1. The torpedo-boat, formed with yawl-shaped hull A and roof B, with the two sides A¹A¹ thereof inclined from the sides of the hull to a point at the top, the front A² inclined rearward to the sides A¹, and the rear inclined downward a short distance, as shown at A³, and the stern-plate vertical, as shown at A⁴, all substantially as and for the purposes herein set forth.

2. In a torpedo-boat, the combination of the hinged ring *h*, arranged around a port-hole in the roof thereof, the wrecker's dress E, circular plate *k*, and shield D, as and for the purposes herein set forth.

3. The combination, in a torpedo-boat, of the water-chambers M N, pipes *v v*, with stop-cocks *w w* and valves *x x*, and the pump P, with piston P' and valve *y*, all substantially as and for the purposes herein set forth.

4. The combination, with a torpedo-boat, of the air-pump J, air-pipe H, float G, valve *m*, and cord *n*, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of October, 1875:

JESSE JOPLING.

Witnesses:

S. MEREDITH,
JAMES ROBERTS.