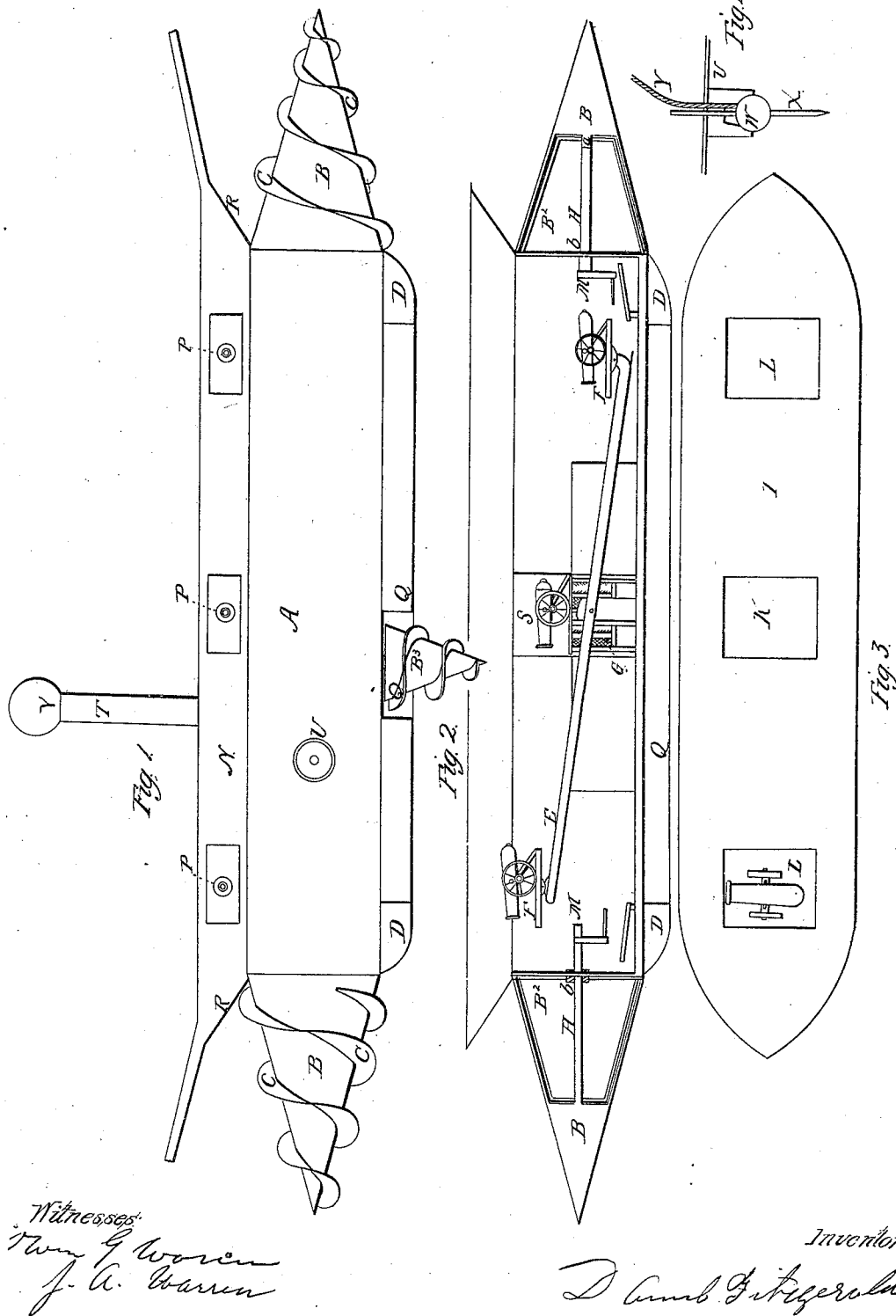


D. Fitzgerald.
Submarine Gun Boat.



UNITED STATES PATENT OFFICE.

DANIEL FITZGERALD, OF NEW YORK, N. Y.

IMPROVEMENT IN SUBMARINE GUNBOATS.

Specification forming part of Letters Patent No. 2,294, dated October 11, 1841.

To all whom it may concern:

Be it known that I, DANIEL FITZGERALD, of the city, county, and State of New York, have invented a new and useful Submarine Gunboat, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is an elevation or side view of the boat. Fig. 2 is a vertical longitudinal section. Fig. 3 is a top view or plan of the deck.

The nature of this invention and improvement consists in constructing a gunboat so that it may be wholly or in part submerged at pleasure, having the use of two or more large guns, and in propelling said gunboat by means of conical or other shaped propellers with spiral paddles revolving on and extending over the whole or part of the bow or stern, and in the arrangement of a gunwale on the boat having a cut-water, and in elevating bow and stern guns by attaching one on each end of a balance-lever, and in elevating and depressing a central gun by placing it upon a platform supported on a piston fitting a cylinder, into which steam or compressed air is admitted for raising it.

To enable others to make and use this gunboat, I shall proceed to describe its construction and operation.

The boat A is made long and narrow, with a keel Q and a rudder D at each end, the bow and stern being conical or shaped to correspond with the shape of the propellers, having a gunwale N, with a sharp cut-water R at both ends, and its sides perforated with port-holes P, and the deck having three or more hatches L, which are made to close tight when the vessel is under water. The conical spiral propellers B, placed over the conical bow and stern B², are in the shape of a cone, (see B, Fig. 1,) with a spiral wing C passing around its surface from the larger to the smaller end, one coiled to the right and the other to the left, having each an axle H, extending from the interior of the small end of the cone through the bow and stern until they come opposite to each other, where they are geared together by suitable gearing to cause them to turn in contrary directions, by steam or other power, which will propel the boat in either direction, according to the direction in which the shafts are turned, the said propellers not touching the bow or stern, and the axle turning in water-

tight boxes. The spiral paddles of the bow-propeller being coiled round the cone to the right and those of the stern to the left and turned in contrary directions, as before stated, will keep the vessel from rocking or careening and steady her movements.

The boat is intended to carry two or more guns F, one placed on either end of a balance-lever E, vibrating on a fulcrum G in the center of the boat, so that while one end of the lever is elevated to raise the gun thereon and bring it to bear on the enemy the other end is depressed with its gun into the hold, and when this gun is elevated the other is depressed, very little power being required to effect the elevation and depression of the guns, as one is a counter-balance to the other. (See Fig. 2.) The center guns S are elevated by steam or compressed air let into a cylinder, which lifts a piston upon which the gun is placed, and when the gun is required to be depressed the steam or air is let off from the cylinder. The steam may be let into the cylinder from the boiler in any of the known modes. When compressed air is used, it is let into the cylinder from a reservoir in any one of the most convenient modes practiced.

One or more of the propellers B³, constructed on the same principles as those before described, is placed in the keel with its axle extending vertically into the interior of the boat and turned by any convenient power to the right or left for raising or lowering the boat, so as to bring her deck in or out of water at pleasure, having a tube T with a transparent or glass water-tight globe V at the head thereof extending up through the deck as high as necessary, into which one of the crew may place himself for the purpose of taking a survey above the surface of the water.

Air may be admitted to the hold through suitable tubes with valves carried upward to a sufficient height.

A horizontal water-tight cylinder V, Fig. 4, is inserted into the side of the boat, leading into the interior thereof to receive and hold an explosive shell W, fixed on a straight rod X, sharpened at one end, which is driven into the side of the enemy's vessel and exploded by a lock or friction-match let off by a cord Y, leading from said lock through the shell to the interior of the gunboat.

The mode of operating with this contrivance

is as follows: The gunboat is propelled under water to the side of the enemy's ship and the rod X driven from the interior of the gunboat into the side of the enemy. The gunboat is then quickly moved away, and when out of reach of the explosion the cord Y, which is payed out at the same times, is suddenly pulled, which fires the shell and blows up the ship of the enemy or whatever it is in contact with.

I do not claim as my invention the mere employment of a screw or screws for propelling boats, as this has long since been done, but not in the manner described by me, and therefore—

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The method herein described of propelling boats by means of propellers with spiral or oblique paddles revolving around and extending over the bow or stern, or both, in manner substantially as herein described.

2. In combination with the method of propelling above described, the employment of a gunwale on the boat having a cut-water extending over the propeller, substantially in the manner and for the purpose described.

3. The method of elevating the bow and stern guns by attaching one on each end of a balance-lever, as herein described.

4. The method of elevating and depressing the central guns by placing them upon a platform or piston fitted in a cylinder, into which steam or compressed air is admitted, as described.

5. The mode of making the propellers with spiral wings extending in contrary directions, one placed at each end of the vessel for propelling the vessel and keeping her steady and in trim.

6. The mode of raising and lowering the boat by means of the spiral conical propeller placed in a vertical position at the keel, as described.

7. The mode of fixing an explosive shell in the side of an enemy's vessel by means of a pointed rod, in combination with the mode of discharging it by means of a cord connecting the lock or match with the gunboat.

DANIEL FITZGERALD.

Witnesses:

W. P. ELLIOT,
CLEMT. T. COOKE.