

No. 615,866.

Patented Dec. 13, 1898.

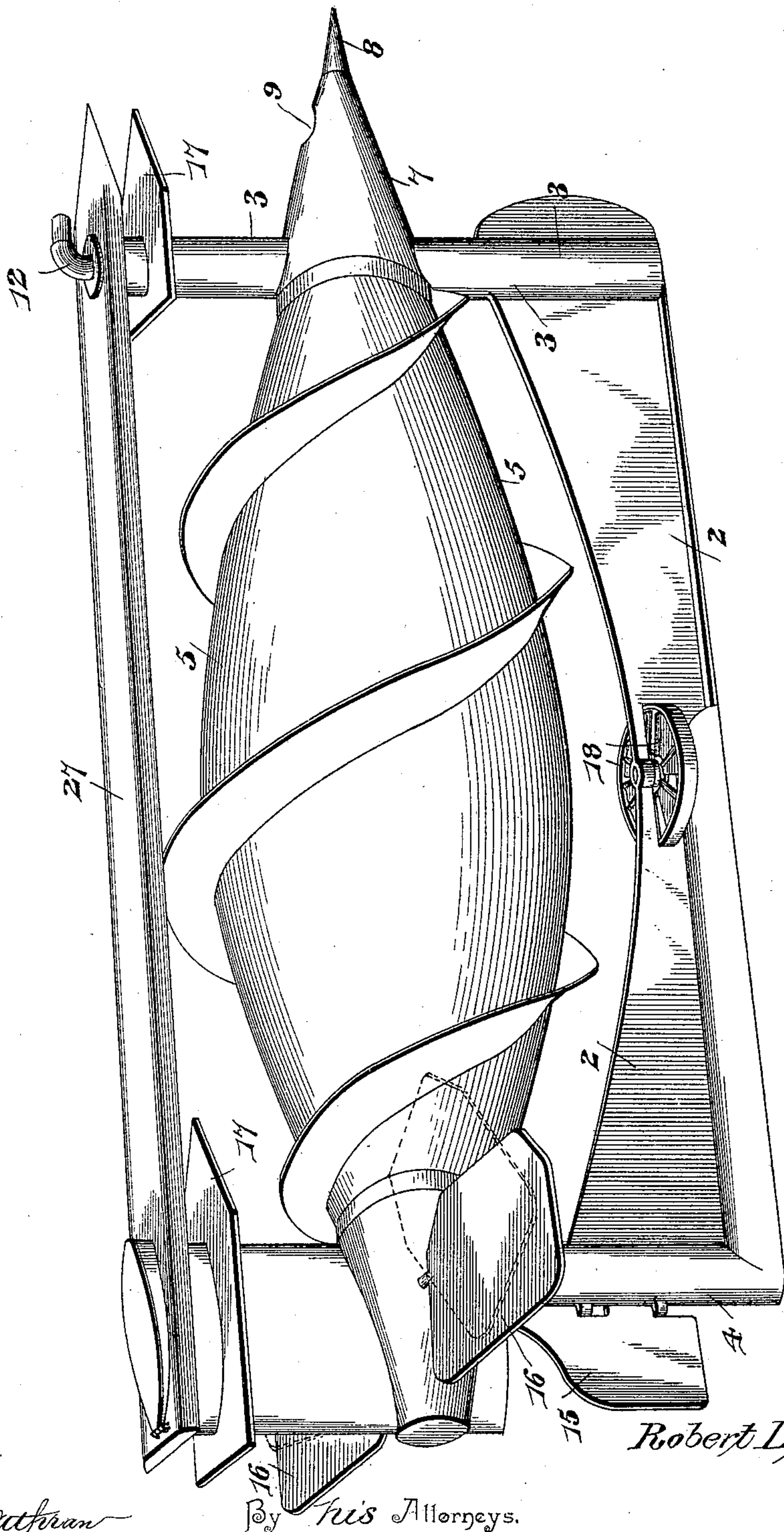
R. LINCOLN.
SUBMARINE BOAT.

(Application filed Feb. 21, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses

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2 Sheets—Sheet 2.

Fig. 2.

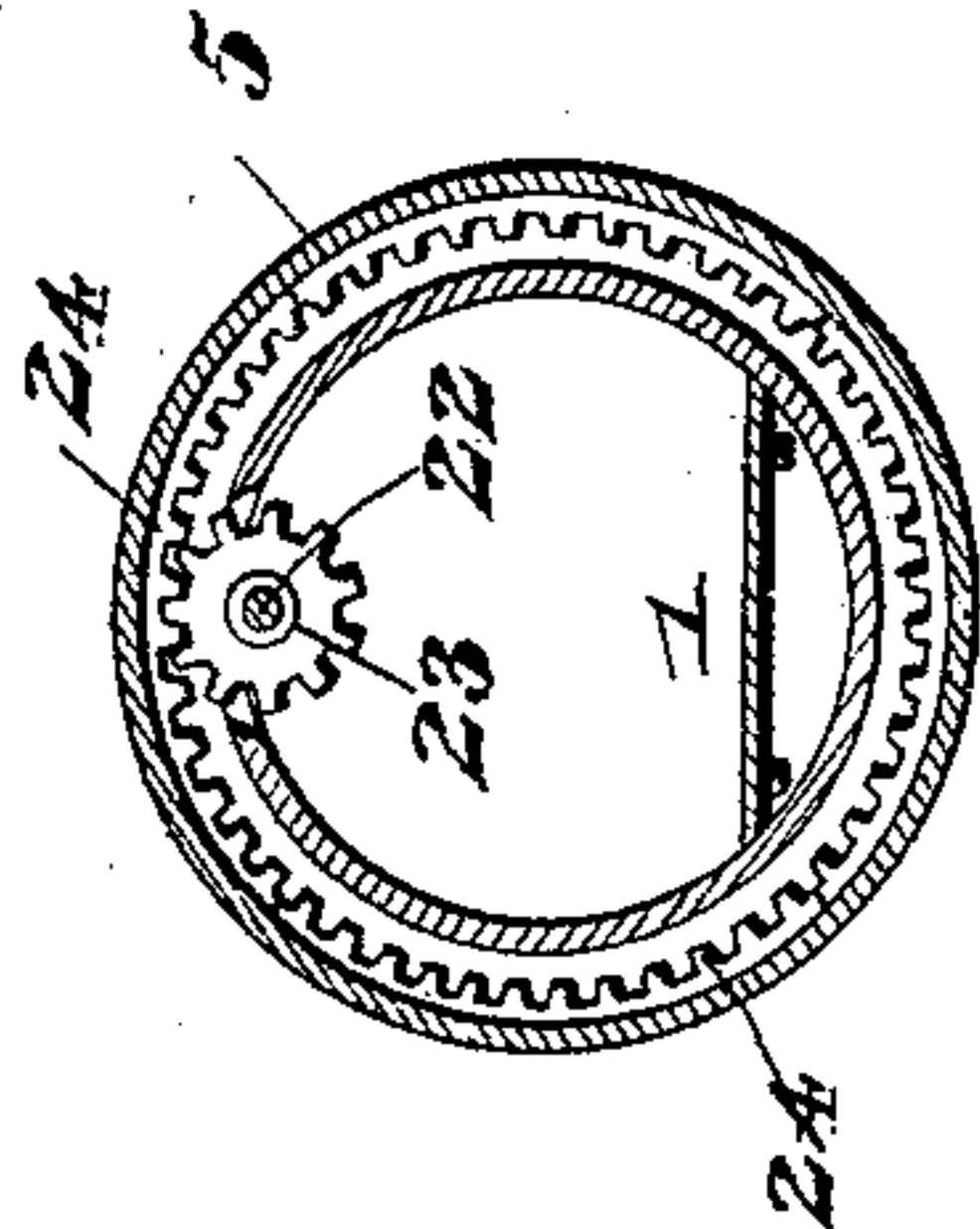
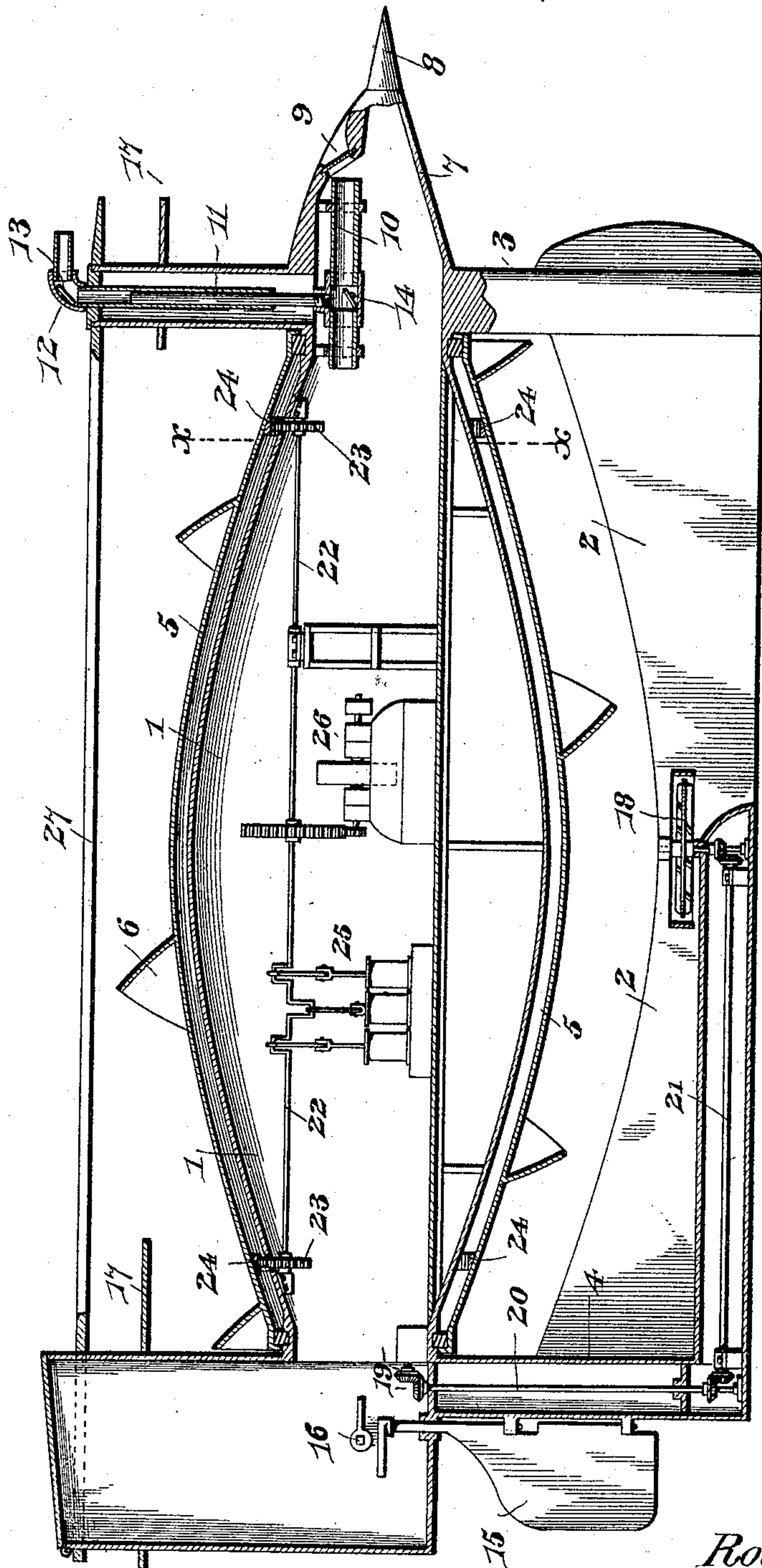


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

ROBERT LINCOLN, OF ST. LOUIS, MISSOURI.

SUBMARINE BOAT.

SPECIFICATION forming part of Letters Patent No. 615,866, dated December 13, 1898.

Application filed February 21, 1898. Serial No. 671,158. (No model.)

To all whom it may concern:

Be it known that I, ROBERT LINCOLN, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Rotary Submarine Boat, of which the following is a specification.

This invention relates to water crafts of the type which are adapted to be submerged and provided with means for propelling and steering whether submerged or floating on the surface of the water.

The purpose of the present invention is the provision of a boat of the variety aforesaid for war or commercial purposes and which may be propelled with equal ease in calm or rough weather.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a boat constructed in accordance with this invention. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a transverse section of the complete boat on the line X X of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In its general construction the boat comprises a hull 1, keel 2, forward standard 3, rear standard 4, and an outer hull or casing 5, the latter being provided with a spirally-arranged blade 6, by means of which the vessel is propelled upon imparting a rotary movement to the hull or casing 5. The keel 2, standards 3 and 4, and the hull 1 are rigidly connected and form a substantial structure which supports the revoluble hull or casing 5. The vessel is enlarged or swelled at its middle and gradually contracts toward its ends, the latter being tapering, so as to offer the least resistance to the passage of the boat through the water. A conical prow 7 is provided about midway the ends of the standard

3 and has a steel point 8 and an observation-port 9. The upper portion of the standard 3 is hollow and constitutes a forward turret, and the upper portion of the standard 4 constitutes a pilot-house and affords means of ingress and egress to and from the interior of the vessel. A horizontal tube 10 communicates with the observation-port 9, and a vertical tube 11 connects therewith at a point between its forward and rear ends, the upper end of the tube 11 having an elbow 12, which points forward to enable observations to be made when desired. A mirror 13 is located within the elbow at the juncture of its branches, and a corresponding mirror 14 is placed at the lower side of the tube 10 in vertical line with the tube 11, both mirrors 13 and 14 being arranged at such an angle that a person looking into the tube 10 can see objects ahead of the vessel by reason of the refracted rays of light. The tube 11 is extensible, being composed of telescopic sections, thereby providing for the running of the vessel at any depth below the surface and yet admitting of observations being taken.

The upper portion of the rear standard 4 constitutes a pilot-house, from which the rear rudder 15 and side rudders 16 are operated to properly direct the boat in its passage through the water. The rear rudder 15 enables the boat to be guided to the right or to the left, and the side rudders 16 are intended to cause the boat to plunge into the water or rise from a submerged position. This result is effected by giving the proper slant to the rudders, as will be readily understood. The side rudders when properly manipulated will supplement the action of the keel and hold the boat steady when going at a high rate of speed. Hydroplanes 17 are attached to the upper portions of the standards 3 and 4 and normally occupy a position parallel with the axis of the boat, and these hydroplanes, in conjunction with the side rudders 16, cause the boat to plunge into the water or rise therefrom, the side rudders causing the rear end of the boat to move up or down, so as to give the proper slant, pitch, or inclination to the hydroplanes, which in the forward movement of the boat control either its descent or ascent, as will be readily understood.

A propeller 18 is located about midway of

the length of the keel 2 and is intended to hold the boat in a given position when stationary, thereby enabling submarine work to be performed in a satisfactory manner. This
 5 propeller is operated from the interior of the boat by means of a suitable motor 19, power being transmitted from the motor to the propeller by a vertical shaft 20, a horizontal shaft 21, and intermeshing gearing connect-
 10 ing the shafts with each other and with the motor and the shaft of the propeller. The shafts 20 and 21 are suitably incased and preferably pass through openings in the keel and rear standard.

15 A shaft 22 extends longitudinally of the boat and is provided near each end with a gear-wheel 23, which meshes with an internal cog-gearing 24, secured to the end portions of the outer hull or casing 5 and by means of
 20 which the latter is rotated when the vessel is in motion. This shaft 22 may be driven by a steam-engine 25 or a dynamo 26, the latter being preferred when the boat is submerged, because no noxious gases and smoke are gener-
 25 ated.

When the boat is to be used for life-saving purposes, it will be provided with a bridge 27, which will be secured at its ends to the upper portions of the standards 3 and 4, and this
 30 gangway is intended to receive the persons and luggage to be saved from a disabled ship, the survivors reaching the bridge without requiring any assistance from the crew of the life-saving boat after the latter has been run
 35 alongside of the sinking or disabled vessel.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

40 1. In combination, a keel, standards at the ends of the keel, a revoluble hull journaled at its ends to the standards and provided on its exterior with a spirally-arranged blade, a horizontal propeller applied to the keel for controlling vertical movements of the boat, a
 45 mechanism for the horizontal propeller located within the hull, and connections between the actuating mechanism and the horizontal propeller housed and concealed from view by the keel and one of the standards,
 50 substantially as set forth.

2. In combination, a stationary hull, standards, a revoluble hull encircling the stationary hull and provided upon its exterior with a spirally-arranged blade, and independent
 55 side rudders applied to one of the standards and mounted to turn upon axes at right angles to the length or line of motion of the boat and adapted to be set at different relative angles to steer the boat laterally and ver-
 60 tically, substantially as set forth.

3. In a submarine boat, the combination with the hull having an observation-port in its prow, a substantially horizontal tube in connection with the said port, a vertical ex-
 65 tensible tube communicating at its lower end with the horizontal tube and having an elbow at its upper end, and mirrors located within the elbow and the horizontal tube in line with the vertical tube to admit of obser-
 70 vations being taken, substantially in the manner and for the purpose specified.

4. In a submarine boat, the combination with the hull, of a vertical rudder, and independent side rudders arranged horizontally
 75 and mounted to turn upon axes at right angles to the length or line of motion of the boat and adapted to be set at different relative angles to act independently of or jointly with the vertical rudder to steer the boat laterally and vertically, substantially as set
 80 forth.

5. In a submarine boat, the combination of a keel, standards at the end of the keel, the forward standard having a conical prow and having its upper portion hollow, and the rear
 85 standard having its upper portion enlarged to form a pilot-house, a stationary hull supported between the standards above the keel, a revoluble hull encircling the stationary hull and having a propelling-blade spirally
 90 arranged upon its exterior, and a bridge connecting the upper ends of the standards above the hulls, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
 95 the presence of two witnesses.

ROBERT LINCOLN.

Witnesses:

STEPHEN SAUM,
 CLYDE CARSON.