

No. 762,498.

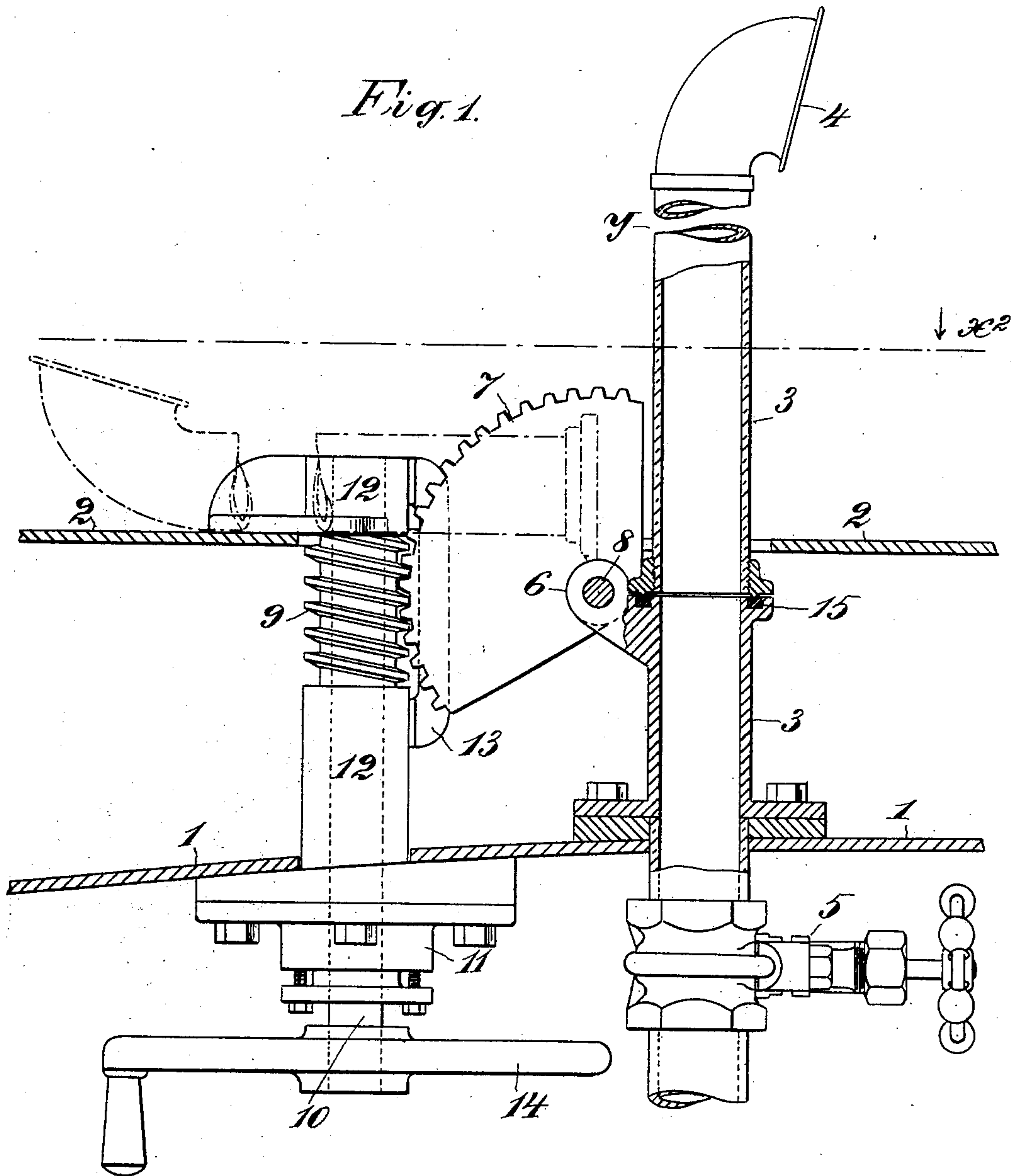
PATENTED JUNE 14, 1904.

L. Y. SPEAR.
VENTILATOR FOR SUBMARINE BOATS.

APPLICATION FILED OCT. 20, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

J. H. Wiman
H. A. Leonard

INVENTOR

Lawrence Y. Spear
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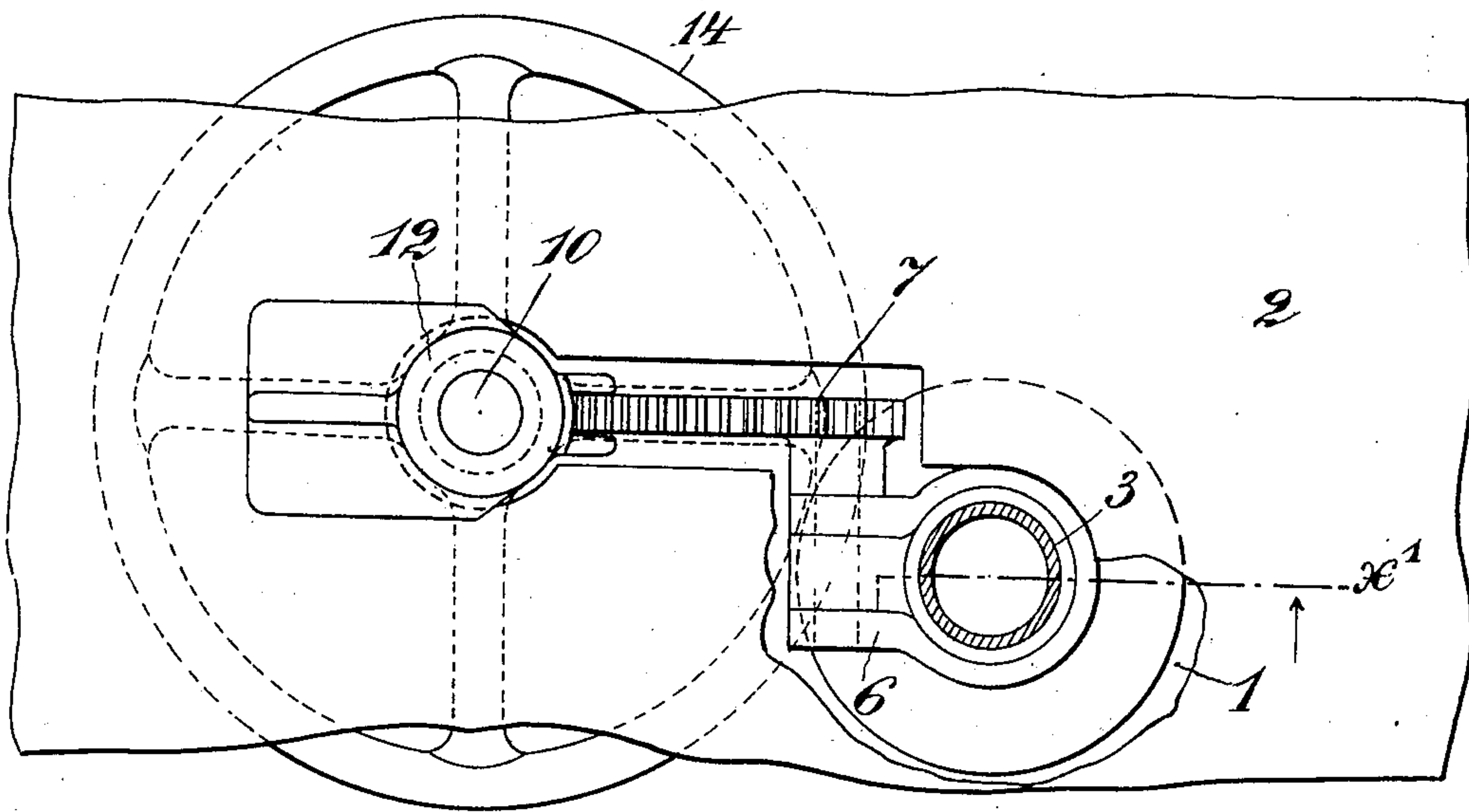
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2 SHEETS—SHEET 2.

Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LAWRENCE Y. SPEAR, OF GREENPORT, NEW YORK, ASSIGNOR TO ELECTRIC BOAT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

VENTILATOR FOR SUBMARINE BOATS.

SPECIFICATION forming part of Letters Patent No. 762,498, dated June 14, 1904.

Application filed October 20, 1903. Serial No. 177,831. (No model.)

To all whom it may concern:

Be it known that I, LAWRENCE Y. SPEAR, a citizen of the United States, residing at Greenport, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Ventilators for Submarine Boats, of which the following is a specification.

This invention relates to means for ventilating submarine and submergible boats; and it has for its object to provide a ventilator which may be folded down on the hull or superstructure of the boat from inside of the boat, when the conditions are such that it cannot be used, and the influx of water prevented by a suitable cut-off operated also from inside of the boat.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a vertical longitudinal section of a part of a submarine boat, the plane of the section being indicated substantially by line x' in Fig. 2; and Fig. 2 is a sectional plan, the plane of the section being indicated substantially by line x'' in Fig. 1.

1 designates the upper plate of the hull or shell of a submarine boat, and 2 the superstructure on the hull. Extending up through the plate 1 and the superstructure 2 from inside of the boat is a ventilator-pipe 3, provided at its upper end with the usual flaring receiver 4, which will face forward. The pipe 3 is shown as broken away at y , as it may extend to any convenient height. Inside of the boat the ventilator-pipe is provided with a gate-valve 5 for cutting off the influx of water under certain conditions, and said pipe exterior to the boat is in two sections, hinged together at 6, so that the upper section, carrying the receiver 4, may be folded back on the deck or superstructure of the boat, as indicated in dotted lines in Fig. 1. Preferably the hinge 6 will be so disposed

with reference to the level of the superstructure that the ventilator-pipe will fold back flat thereon, as shown.

In order to operate the ventilator so as to erect it or fold it down from inside of the boat, a toothed segment 7 is fixed on the hinge-pin 8, and this segment gears with a worm or screw 9, fixed on an upright arbor 10, extending down into the boat through a stuffing-box 11. The screw is collared between two bearings 12, fixed on the hull of the boat and tied together by ribs 13, which embrace and may guide the segment 7 in its movement. On the lower and inner end of the arbor 10 is secured a crank-wheel 14 for operating the screw 9. In one flange of the ventilator-pipe, at the hinge-joint therein, is a suitable ring of packing 15 to form a watertight joint when the ventilator is erected.

The operation will be readily understood. When the ventilator is erect and in operation, the gate-valve 5 will of course be open. If it be desired to fold down the ventilator, the gate-valve will first be closed tight and the upper section of the ventilator folded down through the medium of the crank-wheel, the screw, and the segment. The axis of the shaft or arbor 10 and the ventilator-pipe 3 are so disposed with reference to the longitudinal axis of the boat that the upper section of said pipe will fold down without interfering with the operating devices. The folded pipe lies by the side of the screw-bearing and segment.

Having thus described my invention, I claim—

1. A submarine or submergible boat, having a ventilator-pipe extending upward through its hull, said pipe being provided interiorly of the boat with means for preventing the influx of water therethrough and exteriorly of the boat with a hinge-joint, and means operatable from the interior of the boat for folding down and erecting the ventilating-pipe.

2. A submarine or submergible boat, having
an upright ventilator-pipe extending through
the hull or shell of the boat and having a
hinge-joint exteriorly to the boat, a cut-off
5 valve in said pipe interiorly of the boat for
closing the passage through said pipe, a
toothed segment 7 on the pin of the hinge-
joint, an arbor 10, extending upward through
the hull of the boat, a worm 9 on said arbor

and gearing with said segment, and means 10
inside of the boat for rotating said arbor.

In witness whereof I have hereunto signed
my name, this 15th day of October, 1903, in
the presence of two subscribing witnesses.

LAWRENCE Y. SPEAR.

Witnesses:

H. G. TUTHILL,
F. L. BRAKE.