

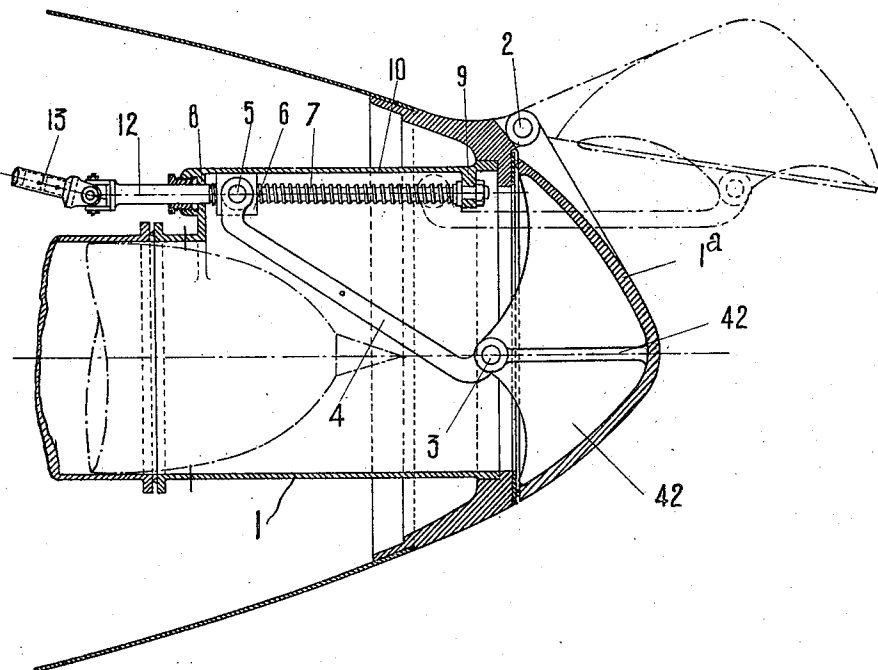
C. LAURENTI.
TORPEDO TUBE.
APPLICATION FILED DEC. 8, 1907.

934,192.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.

Fig 1



WITNESSES:

Fred White
Rene Bruine

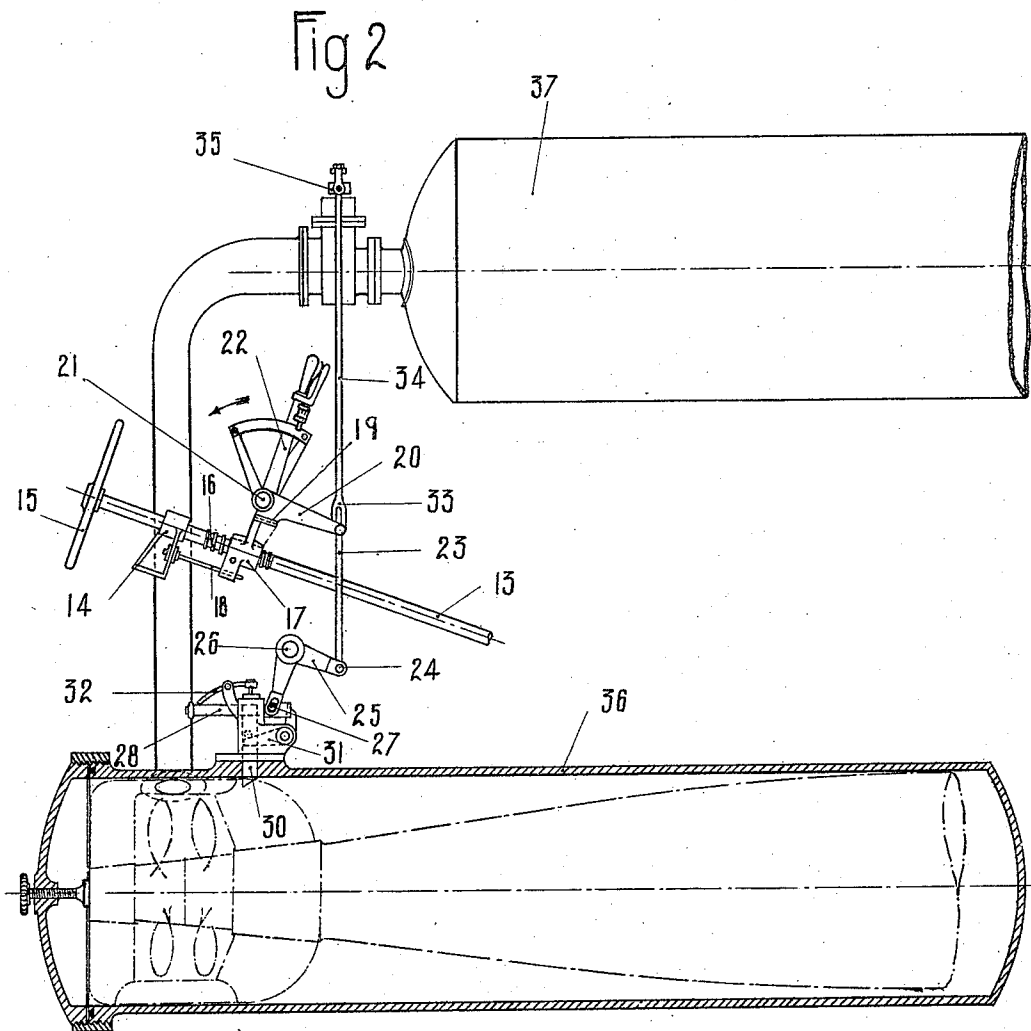
INVENTOR:

Cesare Laurenti,
By his Attorneys
Arthur E. Fraser & Mena

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WITNESSES:

Fred White
Rene McGuire

INVENTOR:

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UNITED STATES PATENT OFFICE.

CESARE LAURENTI, OF SPEZIA, ITALY, ASSIGNOR TO SOCIETÀ ANONIMA FIAT-SAN
GIORGIO, OF SPEZIA, ITALY.

TORPEDO-TUBE.

934,192.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed December 6, 1907. Serial No. 405,314.

To all whom it may concern:

Be it known that I, CESARE LAURENTI, engineer, residing at Spezia, Italy, have invented certain new and useful Improvements in and Relating to Torpedo-Tubes, of which the following is a full, clear, and exact specification.

This invention relates to torpedo tubes and has for its object to insure the correct, perfectly controlled and reliable action of the same.

In the drawings: Figure 1 is a vertical longitudinal section through the forward part of a torpedo tube embodying the invention, and Fig. 2 shows a similar section through the rear part of same in combination with the requisite adjusting and securing devices.

In the said drawings, 1 represents the torpedo tube and 1^a a cover for closing the mouth of same when not in use. Said cover is attached to the hull of the vessel by means of the hinges 2, and is provided on the inner side with transverse webs 42 at the point of intersection of which is provided a pin or gudgeon 3, on which is rotatably mounted a connecting rod or draw bar 4. The other end 5 of this draw bar is pivotally connected by means of a pin or gudgeon 5 to a threaded nut 6, which surrounds a correspondingly threaded spindle 7. The screw spindle 7 is rotatably mounted in two bearings 8 and 9, situated in a lateral recess or chamber of the launching tube and near the mouth of same, and has a stem 12 which is connected by means of a universal joint with a setting rod 13, so that when the latter is turned, the screw spindle 7 is also caused to revolve and the nut 6 is accordingly caused to travel along same and, in the present instance, causes the bar 4 to push the cover 1 outward or upward, thus uncovering the mouth of the tube. When the setting rod 13 is turned in the opposite direction, the cover is moved downward out of the position indicated by the dotted lines into that shown by the full lines in Fig. 1, thus closing the mouth of the tube, the pull exerted by the bar 4 enabling the cover to be securely pressed against the rim of the tube mouth, with sufficient force to make an effectual and watertight joint.

The setting rod 13 is mounted at its inner end in a bearing 14 which is fixed to the ribs of the vessel and carries in addition a hand wheel or crank 15, to facilitate the adjust-

ment. Moreover it is provided beyond the bearing with a strengthened threaded part 16, surrounded by a sleeve 17 which, being guided on the rod 18, can only travel in a longitudinal direction when the setting bar 13 is rotated. The sleeve 17 which is internally threaded to form a nut is provided on its periphery with a portion 19 having a smooth upper face and adapted to be slid into engagement with a corresponding under surface on a lever 20. This lever is pivoted on a fixed pin or stud 21, so as to be incapable of turning when the sleeve 17 is in the position shown in Fig. 2. This adjustment or position of the sleeve corresponds to the position of the nut 6 in which the cover 1 is held closed.

As soon as the hand wheel 15 is turned in the direction for opening the cover, the sleeve 17 is moved backward until the lever 20 is released, and the further movements or operations necessary for the launching of the torpedo are rendered possible. The lever 20 is in connection with another lever which carries the control lever 22, and is also yieldingly connected with the torpedo and pressure releasing devices. For this purpose the free end of the latter is connected by a link 23 and a pin 24 with the end of one arm of a rectangular bell-crank lever 25 which is pivoted on a pin 26. The other arm of the bell crank lever 25 is provided with a slot in which is mounted a stud 27 of a horizontally movable cylindrical slide 28. On its under side this small cylinder is fitted with an inclined groove with which engages one arm of a bell crank lever 31, so that when the small cylinder is displaced, the bell crank lever 31 is turned and its other arm, which is normally horizontal, raises the bolt 30 and releases the torpedo in the tube 1. There is also provided a special handle 32 which is articulated on the bolt 30 in such a manner as to enable the bolt to be drawn back or released by hand while the torpedo is being slid into the tube. The fork or eye 33 engages with an upper connecting rod 34 coupled with a valve 35 which opens the receptacle 37 charged with the pressure medium for expelling the torpedo.

The mode of operation in launching a torpedo is as follows: The cover 1 is first opened in the manner already described, by turning the hand wheel 15, whereby the sleeve 17 is moved backward at the same time over the

sliding surface of the lever 20, so as to release the latter. When the cover has been opened the handle of the control lever is pulled in the direction of the arrow, according to Fig. 2, thus lifting the bolt 30 and releasing the torpedo lying in the launching tube. On the movement being continued, the pivot of the lever 20 enters the upper end of the slot 33 and thus lifts the rod 34, whereby the valve 35 is opened so that the pressure medium can enter the launching tube in the rear of the torpedo, and expel the latter.

What I claim is:—

- 15 1. In combination with a torpedo tube, a cover for the mouth of the same, cover-operating means for opening and closing said cover, a catch for securing a torpedo in the tube, means for admitting pressure into the tube to expel the torpedo, and means actuated by the opening movement of the cover-operating means for first releasing said catch and then causing the admission of such pressure.
- 25 2. In combination with a torpedo tube, a cover for the mouth of the same, a connecting rod connected to said cover on the inside thereof at a point in line with the interior

of said tube when the latter is closed, and means for actuating said rod to open and close the tube.

3. In combination with a torpedo tube, a cover for the mouth of the same, a connecting rod connected at one end to said cover, a traveling threaded member connected to the opposite end of said rod, and a fixed threaded member for actuating said traveling threaded member to move said rod to open and close the tube.

4. In combination with a torpedo tube, a cover for the mouth of the same, a connecting rod connected to said cover at a point in line with the axis of said tube when the cover is in the closing position, a threaded nut connected to the opposite end of said rod, and a threaded spindle passing through said nut and adapted to actuate said rod to open and close the tube.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

CESARE LAURENTI.

Witnesses:

JOHIE BOGETTO,
LOUIS ALLAN.