

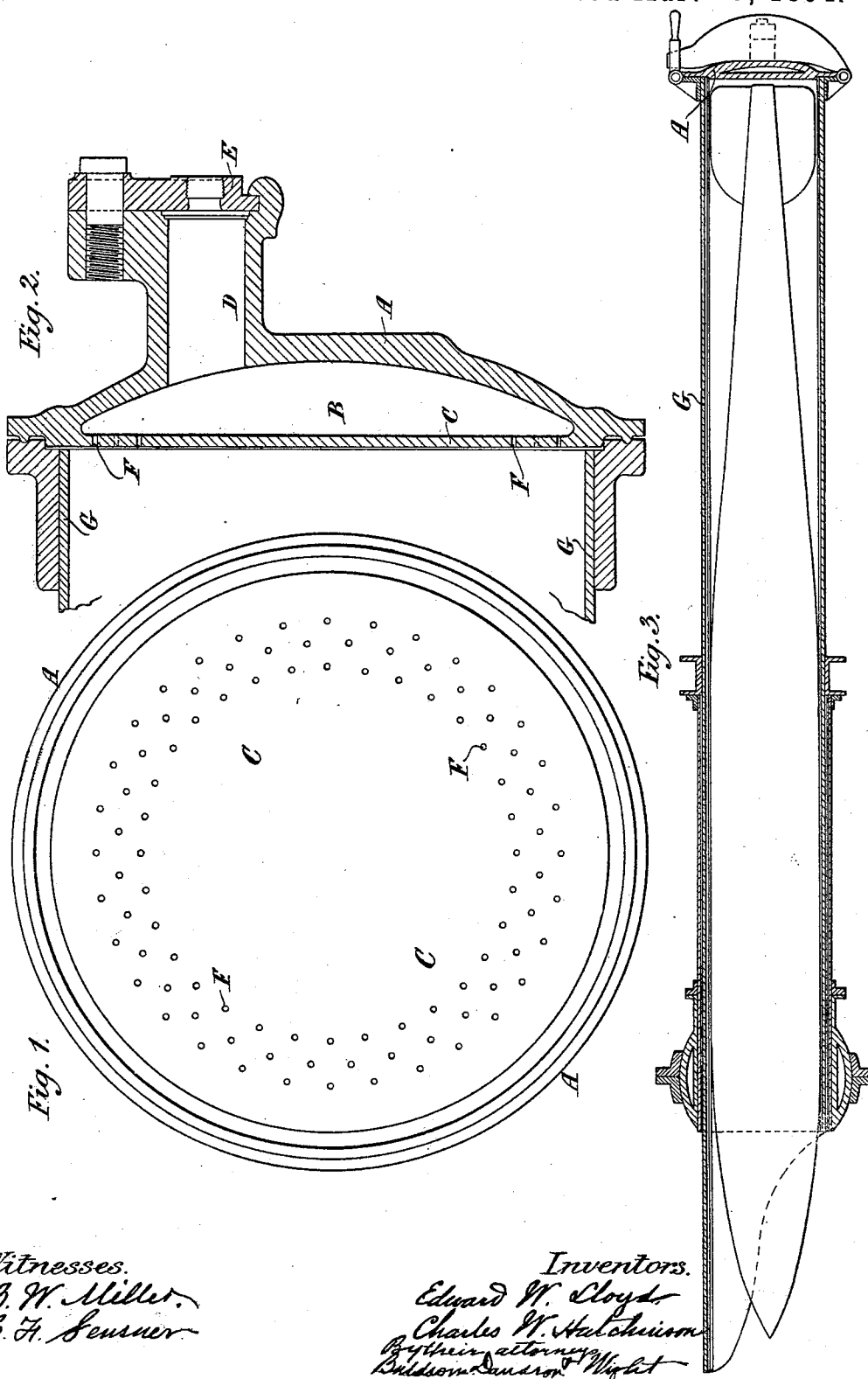
(No Model.)

E. W. LLOYD & C. W. HUTCHINSON.

LAUNCHING TUBE FOR TORPEDOES.

No. 517,390.

Patented Mar. 27, 1894.



Witnesses.

B. W. Miller.
C. F. Sauer.

Inventors.

Edward W. Lloyd
Charles W. Hutchinson
By their attorneys,
Balderson Anderson & Wright

UNITED STATES PATENT OFFICE.

EDWARD WILLIAM LLOYD AND CHARLES WESLEY HUTCHINSON, OF
NEW-CASTLE-ON-TYNE, ENGLAND, ASSIGNORS TO SIR W. G. ARMSTRONG,
MITCHELL & CO., LIMITED, OF SAME PLACE.

LAUNCHING-TUBE FOR TORPEDOES.

SPECIFICATION forming part of Letters Patent No. 517,390, dated March 27, 1894.

Application filed April 13, 1893. Serial No. 470,857. (No model.)

To all whom it may concern:

Be it known that we, EDWARD WILLIAM LLOYD, formerly a commander in the British Navy, and CHARLES WESLEY HUTCHINSON, engineer, both of the firm of Sir W. G. Armstrong, Mitchell & Co., Limited, of Elswick Works, Newcastle-on-Tyne, England, subjects of the Queen of Great Britain, have invented certain new and useful Apparatus for Launching Torpedoes, of which the following is a specification.

For launching torpedoes from torpedo launching tubes we provide in the door at the rear end of the tube an explosion chamber into which the gases arising from the explosion of an impulse charge of explosive are first received and from which they pass into the torpedo launching tube through a throttled opening or openings, or through orifices so restricted as to prevent the escape of unconsumed portions of the explosive and to sufficiently retard the escape of gas to produce such pressure in the chamber as will insure the speedy and uniform combustion of the explosive; and to admit the gas into the launching tube at so moderate a pressure as to be uninjurious to the torpedo.

The apparatus consists of a hollow door hinged to the rear end of the launching tube and having formed on it, to the rear, a small chamber to receive a metallic cartridge case containing the impulse charge of explosive, such chamber opening into the larger chamber formed by the hollow interior of the door and a passage or passages being formed through the front of the door through which the unconsumed charge cannot be blown, but through which the products of explosion must pass from the chamber into the launching tube. The passage through which the gas flows from the chamber to the launching tube, or gun, may consist of a large number of small holes, or may consist of a small number of larger holes, or of a hole, suitably arranged, any or all of which may have an adjustable or a fixed area of opening. The cartridge chamber and the combustion chamber may be otherwise formed, and otherwise attached to the launching tube.

Figure 1 shows the inner face of a torpedo tube door A, and Fig. 2 is a section of the same. Fig. 3 shows a longitudinal section of the tube and door to a smaller scale.

The door A is hollowed in shape as to form a combustion chamber B closed by the perforated plate C. The cartridge or charge of explosive is placed in the smaller chamber D, and is held thereby by the hinged door E. When the charge is ignited, the products of combustion pass into the chamber B, from whence the gases pass through the holes F in the plate C into the tube G. The form of the passages for the escape of gas from the chamber B into the tube, prevents the escape of the explosive otherwise than in the form of gas, or in such small particles as will instantly be gasified. The restriction of the area of passage causes a considerable gas pressure and consequent high temperature of explosion and combustion in the chamber B, and then admits the gas at a sufficiently reduced pressure into the launching tube.

What we claim is—

1. The combination of a launching tube, a hollow or chambered door removably secured to the rear end thereof, a throttled opening or openings establishing communication between the chamber in the door and the rear end of the tube, and a cartridge chamber opening at one end into the chamber of the door, and closed at the other end by a door.

2. The combination of a launching tube, a hollow or chambered door removably secured to the rear end thereof, and provided at its front end with a partition provided with numerous small perforations to provide a throttled communication between the tube and the chamber, a cartridge chamber formed in the door and opening into the expansion chamber, and a door in rear of the cartridge chamber.

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Witnesses:

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