H. MORTENSEN.

Torpedo-Boat.

No. 202,453. Patented April 16, 1878.

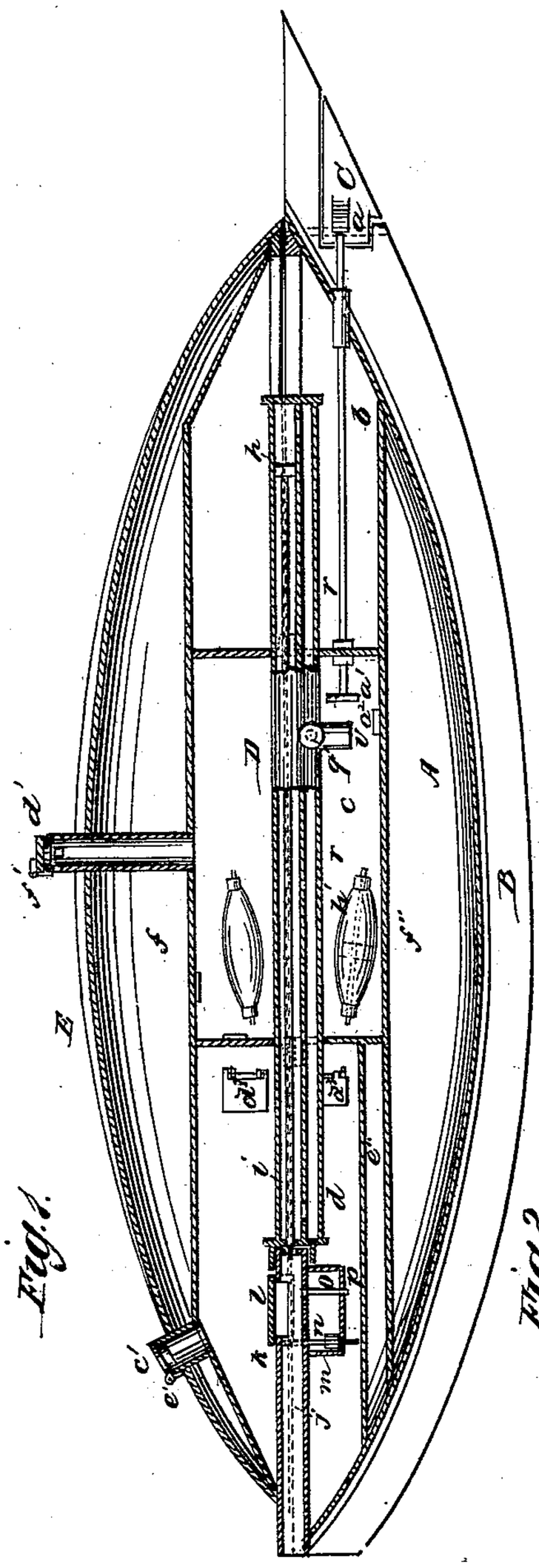

Fig. 1.

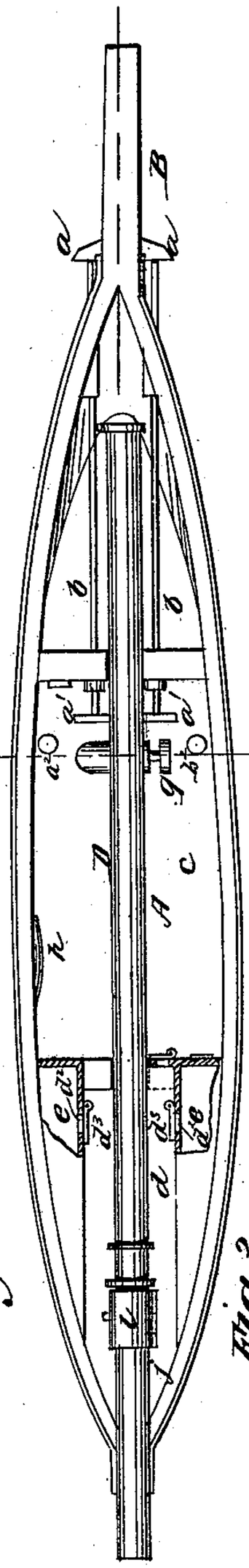

Fig. 2.

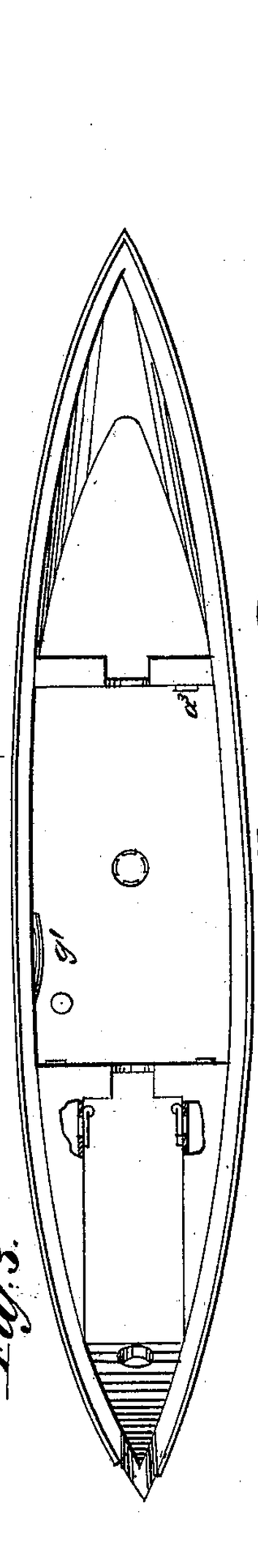

Fig. 3.

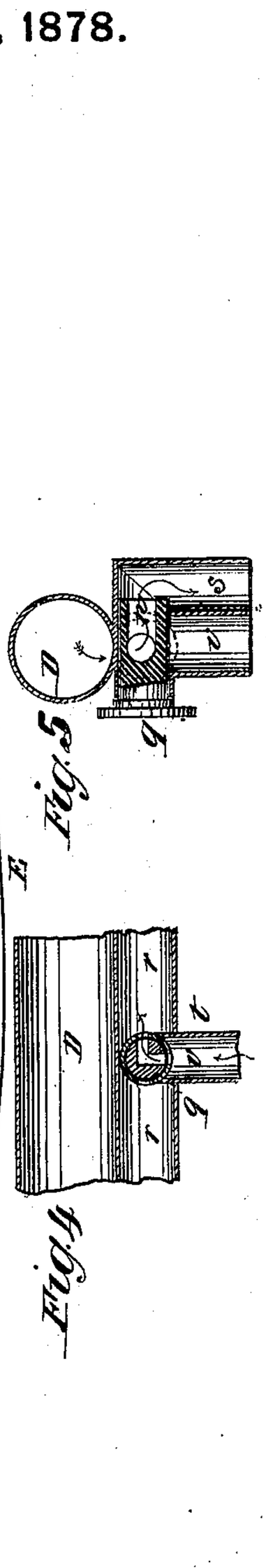

Fig. 5.

Fig. 4.

WITNESSES:

Francis. McArdle.

C. Sedgwick

INVENTOR:

H. Mortensen

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HANS MORTENSEN, OF ALMA, COLORADO.

IMPROVEMENT IN TORPEDO-BOATS

Specification forming part of Letters Patent No. **202,453**, dated April 16, 1878; application filed January 28, 1878.

To all whom it may concern:

Be it known that I, HANS MORTENSEN, of Alma, in the county of Park and State of Colorado, have invented a new and Improved Torpedo-Boat, of which the following is a specification:

Figure 1 is a longitudinal section of my improved torpedo-boat. Fig. 2 is a plan view with the top removed. Fig. 3 is an inverted plan view of the top of the boat. Figs. 4 and 5 are detail sectional views of the valve connected with the spar-cylinder.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

Similar letters of reference indicate corresponding parts.

Referring to the drawing, A is the hull of the boat, which has an arc-shaped keel, B, that runs the entire length of the boat and projects beyond the stern. A portion of the keel is cut away at the stern to receive the rudder C, which is pivoted in the support thus formed. The rudder is provided with two arms, *a*, one on each side, that project at right angles to the face of the rudder, to receive the thrusts of the screw-rods *b*, which project through the stern of the boat, one on each side of the keel. The hull of the boat is divided into several compartments.

The compartment *c* is designed to contain the men that operate the torpedo-projecting mechanism. The compartment *d* contains the men who introduce the torpedo into the projecting apparatus and attach it to the movable rod. Upon each side of the compartment *d* there are compartments *e* for containing either air or water, as occasion may require, said compartments being connected with each other under the compartment *d* by a passage, *e''*. They are also connected with the compartment *d* by passages d^2, closed by doors d^3. Above the compartment *c* there is a chamber, *f*, which contains compressed air for the supply of the crew and working the machinery. Under the compartments *e c b* there is a compartment, *f''*, for containing water forced in against an air-cushion. The chamber thus acts as an accumulator of power which is expended in working the torpedo-projecting apparatus.

A cylinder, D, containing the piston *h* and piston-rod *i*, is placed longitudinally in the hull, and is provided with the loading-chamber *j*, which projects through the bow of the boat, and is provided with a loading-aperture, *k*, which is closed by a hinged and tracked cover, *l*.

Below the loading-aperture *k* there is a chamber, *m*, which contains a valve, *n*, that is forced upward into the loading-chamber *j* to exclude the water while the torpedo is being attached to the piston-rod *i*. The loading-chamber *j* communicates with the chamber *m* through an aperture, *o*, which is stopped by the valve *p*. This aperture is for the escape to the chamber *m* of any water that may leak into the loading-chamber *j* during the operation of loading. The cylinder D is provided with a rotary valve, *q*, which communicates with the ends of the cylinder D by pipes *r*, and is connected with the accumulator-chamber *f''* by means of the supply-pipe *v* and with an escape-pipe, *s*. This valve is provided with a right-angled passage, *t*, which may be turned so as to bring either of the pipes *r* into communication with the supply-pipe *v*. It is also provided with the passage *u*, that communicates with either of the pipes *r* and with the escape-pipe *s*, so that water under pressure may be admitted or permitted to escape from either end of the cylinder, so as to project the piston-rod *i* and explode a torpedo by contact with a vessel or retract the piston, as may be required.

The water required for working the piston may be forced into the chamber *f''* before the boat is started, or it may be forced in by hand or otherwise while the boat is under way.

The rods *b*, by which the rudder is operated, are threaded, one being provided with a right-hand and the other with a left-hand thread, and work in fixed nuts, and are provided with spur-wheels *a'*, which mesh into a driving spur-wheel, that is driven by a suitable motor or by hand.

The boat is covered by a removable upper portion, E, which is similar in form to the hull, and is secured to the hull by means of bolts, and a water-tight joint is made by means of calking or packing.

The top is comparted in the same manner

as the hull, and both top and hull are provided with suitable valves a^2 b^2 for the admission and escape of air and water. There is a passage, a^3, between the room c and the stern-room b.

In the top there are two entrances, c' d', provided with hinged covers e' f', which are packed to render them water-tight.

The compartments for containing the crew are provided with suitable windows, which open inwardly, so that they may be repaired or replaced in case of breakage.

In each side of the boat there are recesses g' h', which are inclined in opposite directions. In each of these recesses a screw-propeller, i', is placed, the shaft of which extends into the boat, and is connected with a suitable motor.

By means of these screws the boat may be propelled forward or backward, and raised or lowered, as may be required.

The boat is capable of being operated wholly under the water; or the top portion may be removed, when it may be propelled on the surface.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with hull A, of the keel B, extending its whole length, projecting at the stern, and having rudder pivoted therein, as and for the purpose described.

2. In a torpedo-boat, a cylinder, D, having valve q, with the passages v w and pipes r, in combination with the chamber f'', connected therewith by pipes, as and for the purpose specified.

3. The combination of the water-escape valve p with the chamber j, having the discharge-opening o, substantially as shown and described.

4. The combination of the screw-rods b with the rudder c, having arms a, substantially as herein shown and described.

HANS MORTENSEN.

Witnesses:
O. JAS. PERSSON,
E. A. KILLDUF.