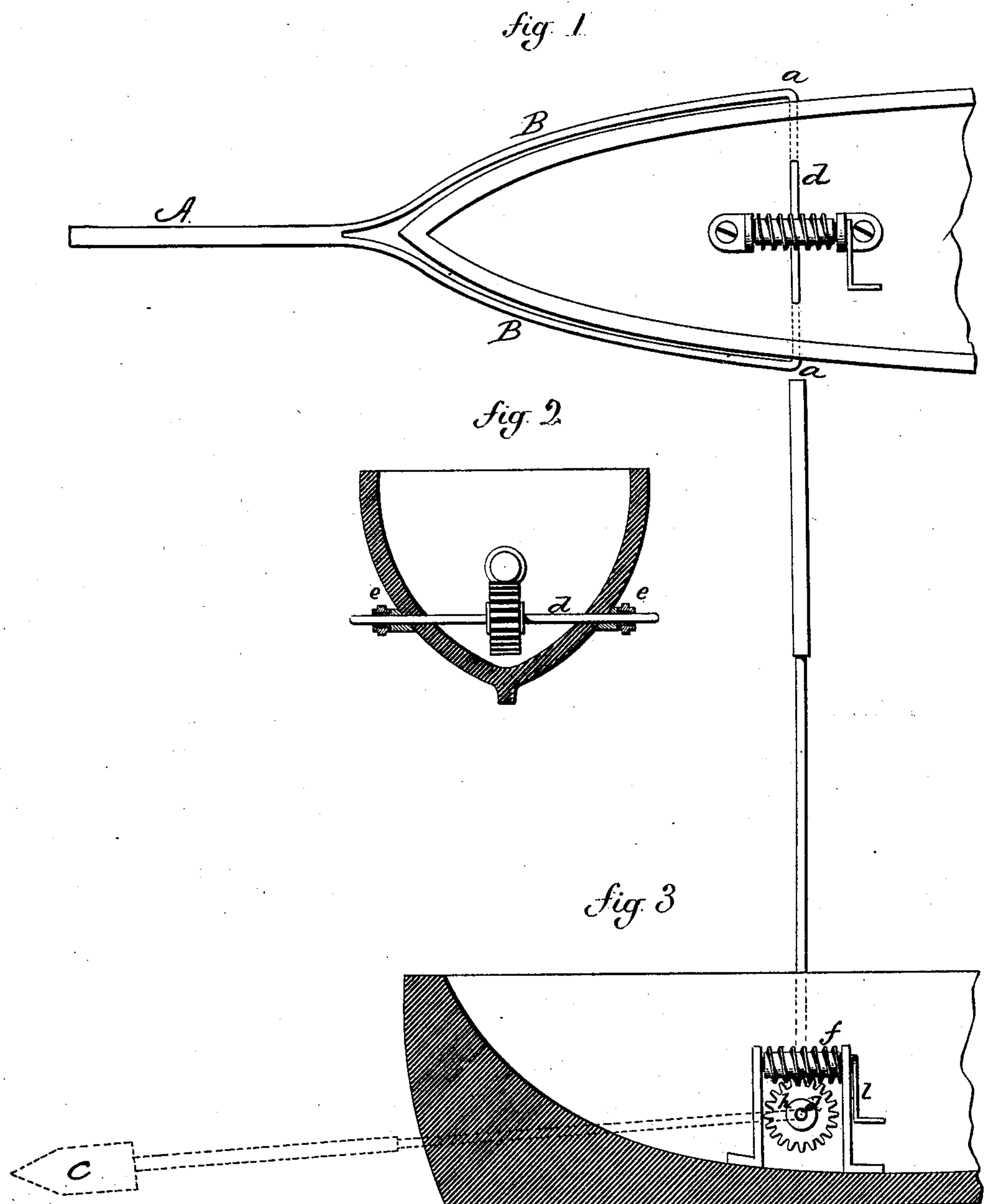
W. H. MALLORY.

Spar Torpedo-Boat.

No. 199,841. Patented Jan. 29, 1878.



Witnesses.
J. H. Shumway
Geo. A. Kitson.

Wm. H. Mallory
Inventor
By atty.
Wm. E. Earle

UNITED STATES PATENT OFFICE.

WILLIAM H. MALLORY, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO AMERICAN PROPELLER COMPANY, OF SAME PLACE.

IMPROVEMENT IN SPAR-TORPEDO BOATS.

Specification forming part of Letters Patent No. **199,841**, dated January 29, 1878; application filed November 22, 1877.

To all whom it may concern:

Be it known that I, WILLIAM H. MALLORY, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new Improvement in Spar-Torpedo Boats; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, top or plan view; Fig. 2, transverse section; Fig. 3, longitudinal section.

This invention relates to an improvement in that class of torpedo-boats in which the torpedo is supported upon the end of a spar, to be by such spar adjusted and presented to the desired point for explosion, and known as "spar-torpedo boats."

In previous constructions the spar has been rigged out and in with guys from the deck of the boat, or from below, and run out and in below the water-line through valves that admit of a swiveling action, as a ball and socket, which forms the center of motion, from which the spar will be raised, depressed, or turned to the right or left. The first is unwieldy, and in such an exposed position as to render them impracticable. The second requires so much space below deck, and complicated machinery to work it, as to render the working not only inconvenient but difficult.

The object of this invention is to overcome these difficulties; and it consists in a bifurcated spar, the divisions of which extend one along each side of the boat, and turned inward to form, or connected to, a transverse shaft, and through which shaft the spar is elevated or depressed, as more fully hereinafter described.

In illustrating the invention, the simplest construction of mechanism is shown, and only the portion of one end of an open boat; but this is sufficient to enable those skilled in the art to apply the invention to such boats as are adapted for torpedo purposes, and apply more approved machinery.

A represents the bow end of a boat; B, the spar, divided just forward of the bow, the two divisions extending, one each side of the boat, to a point, *a*, which may be a greater or less distance from the bow. At this point *a* (and which is, by preference, below the water-line) a transverse shaft, *d*, is arranged, and to this the two divisions B of the spar are attached.

The shaft is arranged in suitable bearings, and fitted with stuffing-boxes *e*, as a packing to prevent leaking, where the shaft passes through the sides of the boat.

Power is applied to this shaft *d* to raise or depress the spar, and this may be done by any suitable machinery—here represented as operated by a worm-gear, *f*, working in a correspondingly toothed pinion, *h*, on the shaft, and a hand-crank, *l*, for turning the worm. Therefore, accordingly as the worm is turned to the right or left, so will the spar A be raised or lowered. The stern of the boat should be shaped to allow the spar to rise and fall, and so as to bring the dividing-point as near the stern as possible.

The spar is best constructed from strong tubing, and made elliptical in transverse section, the longer diameter to be vertical when the spar is down.

Through the spar an insulated wire extends to the torpedo, which is arranged at the end of the spar in the usual manner. The wire may run to any desired part of the boat, where the usual appliances are arranged for communicating the electric spark to the torpedo. The wire may, however, be carried outside the spar.

In practice, the power should be applied through a frictional connection—as, for instance, arrange the worm upon the shaft, with sufficient friction between the two so that the turning of the worm will raise and lower the spar; but should a force greater than such friction be applied, then one would turn independent of the other. The object of this arrangement is that the explosion may exert a sudden force upward or downward upon the spar, and which, without such frictional connection at the shaft, would strain the spar or machinery, or both; but the friction, being overcome by the greater power, will avoid such strain.

An indicator may be applied, to show the position of the torpedo.

Usually the boat would be a "double-ender," and a spar arranged at each end; and when not

in use for torpedo purposes the spar or spars can be raised to a vertical position, as seen in Fig. 3, and serve as masts, to which sails may be rigged to supply propelling-power.

By this construction of the spar the objects of the invention are entirely attained.

I am aware that torpedoes have been arranged upon a frame attached to a shaft transversely through the boat, and so as to be adjusted thereby, and therefore do not, broadly, claim such construction.

I claim—

In a torpedo-boat, a spar projecting from the bows of the boat, and divided at or near that point into two branches, one extending along each side of the boat, and attached to or made a part of a transverse shaft, combined with mechanism for adjusting the spar, substantially as described.

WM. H. MALLORY.

Witnesses:
JOHN E. EARLE,
H. A. KITSON.