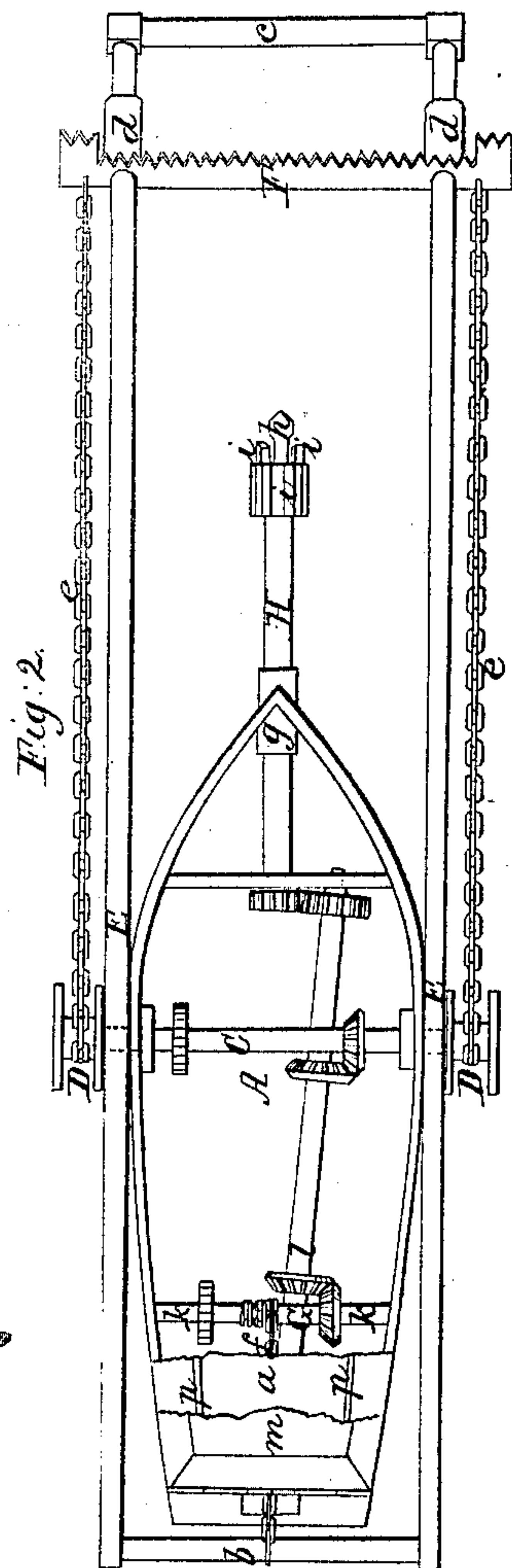
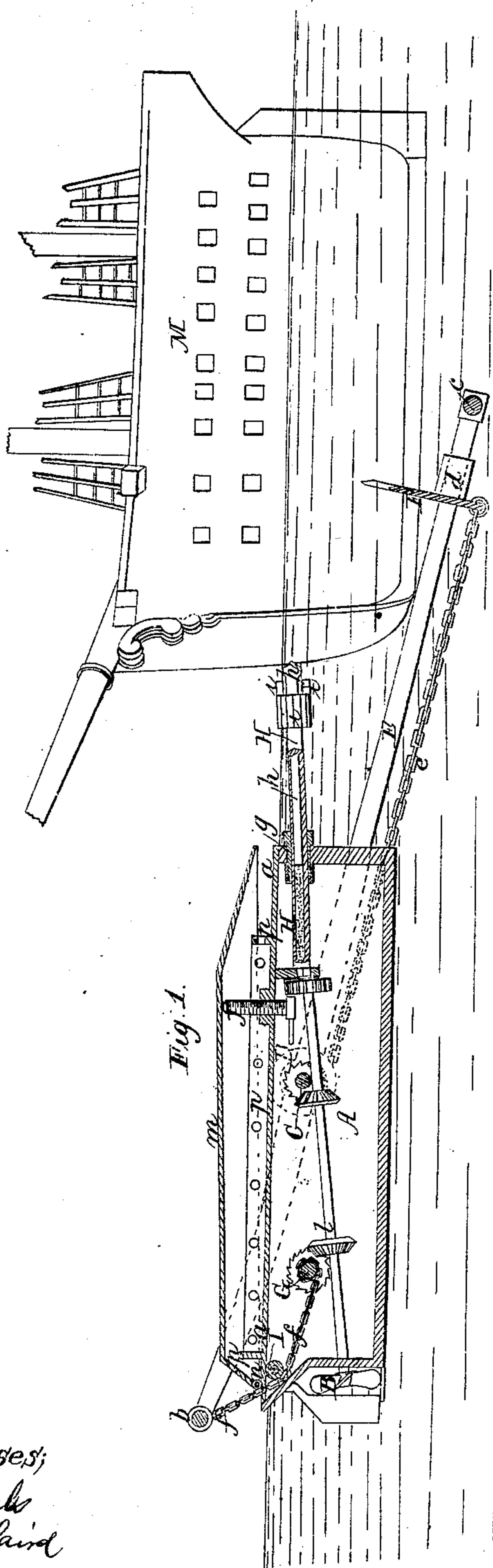


*J. McCuskey,
Submarine & Torpedo*

N^o 34,116.

Patented Jan. 7, 1862.



*Witnesses;
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UNITED STATES PATENT OFFICE.

J. McCLUSKEY, OF MILWAUKEE, WISCONSIN.

IMPROVED APPARATUS FOR SUBMARINE ATTACK ON ENEMIES' VESSELS.

Specification forming part of Letters Patent No. 34,116, dated January 7, 1862.

To all whom it may concern:

Be it known that I, J. McCLUSKEY, of the city of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new Apparatus for Drilling or Boring Holes and otherwise Injuring Ships or other Vessels Below the Water-Line; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a central vertical sectional view of a gun-boat fitted with my apparatus and shown in the act of drilling a hole in a vessel. Fig. 2 is a plan of the same having the decks removed to show the interior.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in a novel system of grappling and drilling or boring apparatus so applied to a boat as to be capable of being worked by steam or other power under its deck to grapple and drill holes in an enemy's ships and other vessels below the water-line; and it also consists in so combining the drill or boring-tool with a cannon that after having drilled a hole it may be fired through it from the cannon.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the boat, made of ordinary shape and preferably of iron, fitted with a screw-propeller B for propulsion, and having below its decks *a a* a transversely-arranged shaft C, which is fitted to suitable bearing on board, and which serves the double purpose of carrying two windlasses D D and of a fulcrum to the two side levers E E of the grappling apparatus, said windlasses and levers being all outside the boat, and the said levers being next to the sides of the boat. The said levers, which extend forward some distance in front of the bow of the boat, are connected together at their rear ends by a transverse bar *b* and at their front ends by a transverse bar *c*, and each has fitted to slide upon it in front of the bow one of two sockets *d d*, to which the grapples F are rigidly secured. This grapples consist of a bar of iron having its upper edge serrated or otherwise furnished with teeth or claws to indent themselves into the

bottom of the vessel. The said grapples are connected by chains *e e* with the windlasses D D, by which it is capable of being drawn along the levers toward the bow of the boat when power is applied to give rotary motion to the shaft C. The transverse bar *b* at the rear of the levers E E is connected by a chain *f* with another windlass G, arranged in the after part of the boat below the deck thereof. This windlass G serves to raise and lower the grapples. This is lowered by its own weight and that of the front portions of the levers when the chain is let out, and is raised by winding up the said chain to draw down the rear ends of the levers. I is a guide-roller for guiding the chain *f*. The shaft C of the windlass D D has its journals fitted to stuffing-boxes in the sides of the boat to exclude the water from between decks, as the said shaft may sometimes be submerged. The shaft *k* of the windlass G has its bearings inboard, and so requires no stuffing-boxes.

H is the stock for the drill or boring-tool working through a stuffing-box *g* in the bow of the vessel below the water-line, and having fitted to it the drill or tool *h*, and having on its exterior cutters *i i* to enlarge the hole cut by the drill in an enemy's vessel.

The windlass-shafts C and *k*, the propeller-shaft *l*, and the stock H are all geared or otherwise connected with the shaft of the steam-engine or other motor, but capable of being separately disconnected at the pleasure of the engineer, commander, or other officer of the boat.

Above the deck *a* of the boat there are bulwarks *p*, pierced for guns, and there is provided for the protection of the gunners or others on deck an upper deck or covering *m*, of iron or wood sheathed with iron, having a downward slant in all directions toward its sides to cause the glancing off of any projectiles that may strike it. This upper deck *m* is hinged at *n* at one end to the main deck *a* and capable of being elevated by one or more screws J applied near the other end. When the guns on the deck *a* are not to be used, the upper deck *m* is lowered down to cover it closely, and when the guns are to be used the said deck *m* is raised, as shown in Fig. 1, high enough to allow them to fire under it.

The operation of the grappling and drill-

ing apparatus is as follows: The boat A is run up to the vessel M, that is to be attacked, steam on and with her grappler F lowered sufficiently to enable it to pass under the bottom of M. The grappler is then raised to indent itself into the bottom of M by winding up the chain *f* on the windlass G, and the drill or tool *h* and cutters *i i* are brought up to their work by winding up the chains *e e* on the windlasses D D to give the grappler a good hold and draw the boat toward it. The windlasses are then uncoupled from the driving mechanism, but left locked by suitable pawl, and the stock H set in motion, and the drilling or boring operation then commences. As this operation proceeds the chains *e e* are tightened from time to time by winding up the windlasses D D and until the hole is drilled or bored entirely through the vessel M. The same operation may be repeated at different parts of the said vessel to make her sink rapidly.

Fig. 1 represents the stock H of the drill or boring-tool, made hollow to serve as a cannon and charged with powder behind the drill or tool *h*, which is fitted and packed thereon in such a manner as to exclude the water, but

so as to turn with the stock. After a hole has been bored through the vessel the firing of the charge in the stock H fires the drill or tool into the vessel M. By making the said stock breech-loading and making suitable provision for the exclusion of water from the boat A, the firing of projectiles into the vessel M may be repeated.

The drill-stock may work through a ball-and-socket joint in the bow of the vessel instead of through a straight stuffing-box.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The grappling apparatus consisting principally of two levers E E, a grappler F, windlasses D D and G, and chains *e e f*, the whole combined and applied to a boat, in combination with a drill or boring device, substantially as herein specified.

2. The employment as the stock for the drill or other boring-tool of a tube charged like a cannon for the expulsion of the said tool, substantially as herein specified.

J. McCLUSKEY.

Witnesses:

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