

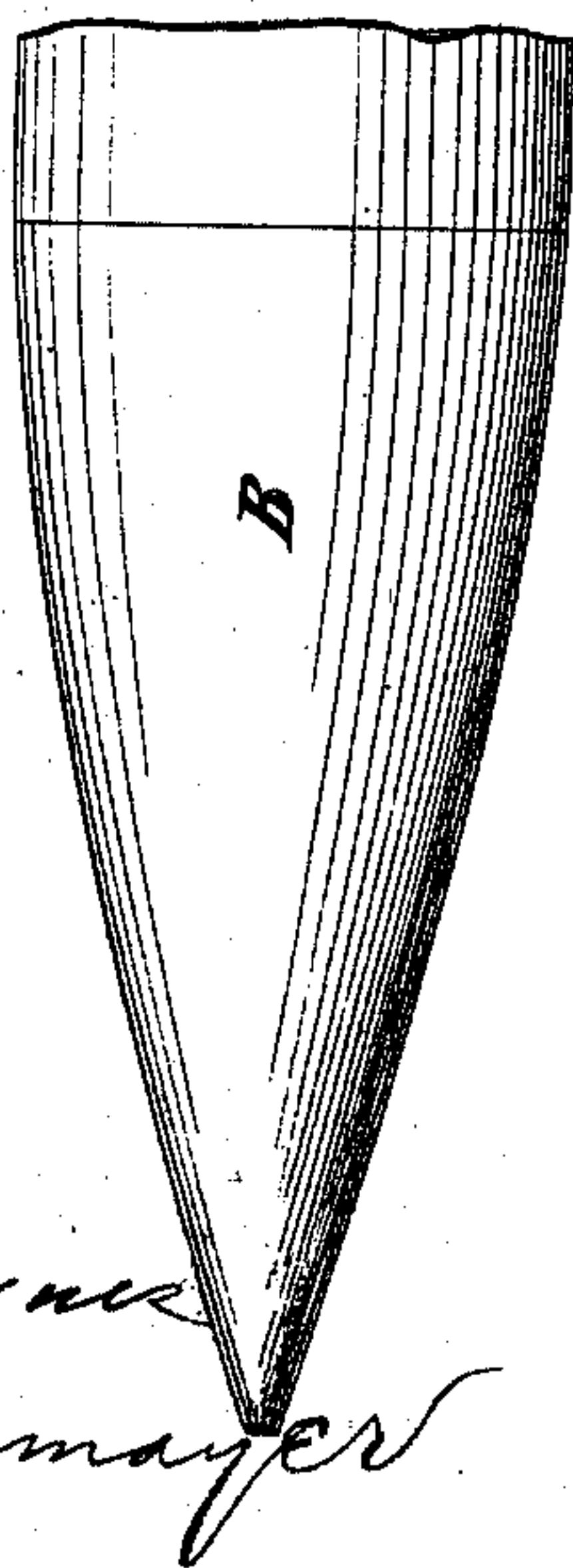
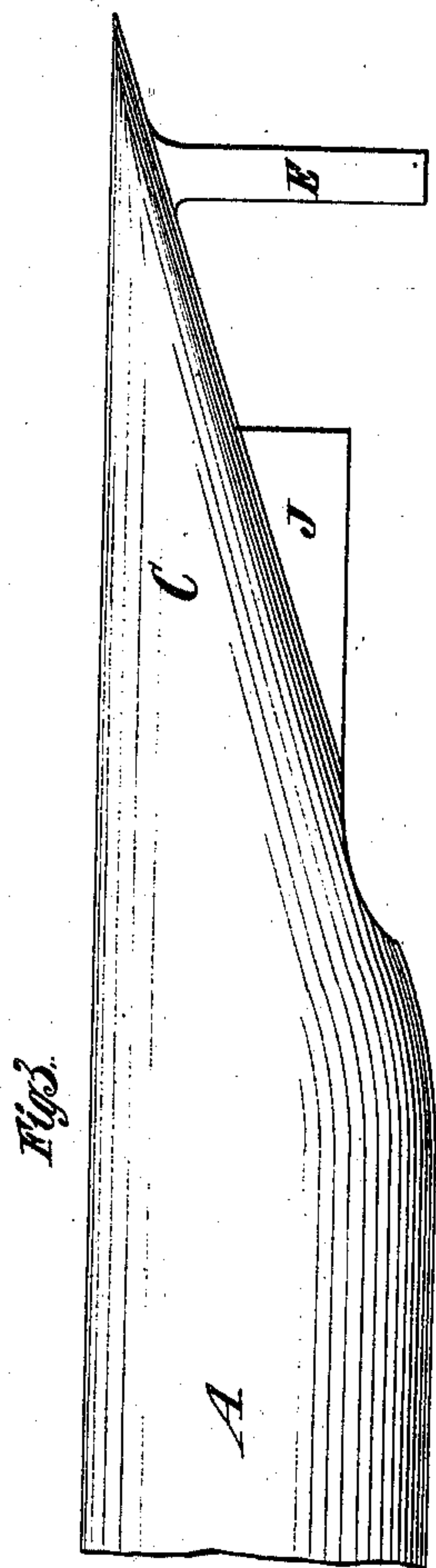
(No Model.)

G. H. REYNOLDS.

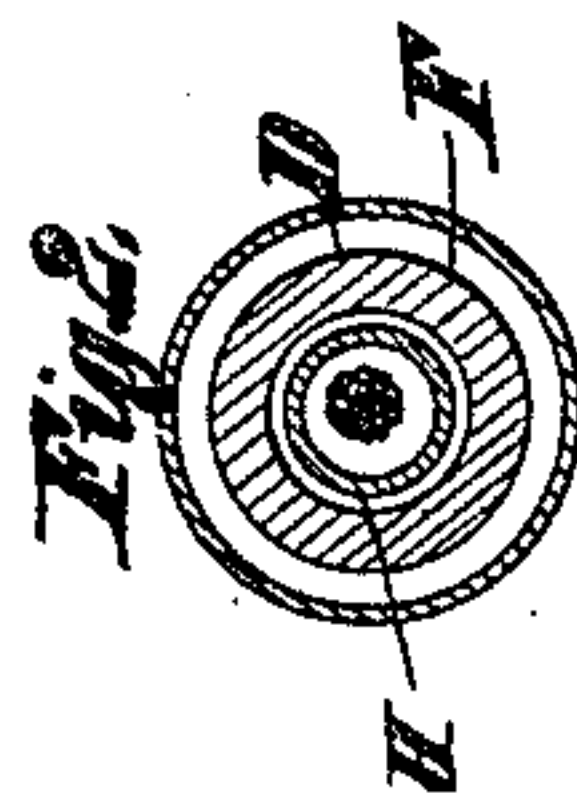
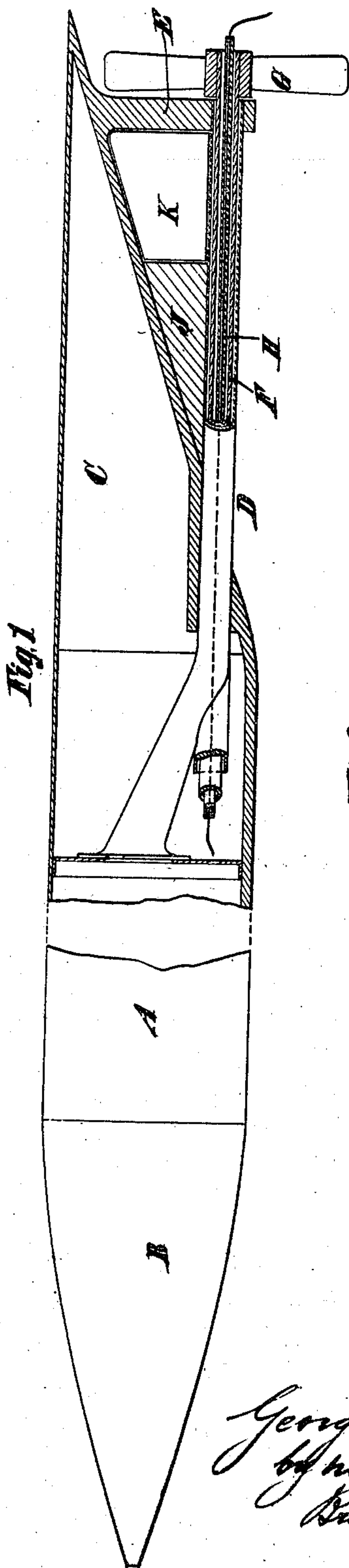
TORPEDO BOAT.

No. 251,288.

Patented Dec. 20, 1881.



Witnesses
Thos. Haynes
Ed. Glatzmayer



George H. Reynolds
by his Attorneys
Beaumont & Brown

UNITED STATES PATENT OFFICE.

GEORGE H. REYNOLDS, OF NEW YORK, N. Y., ASSIGNOR OF THREE-FOURTHS
TO MARCUS A. HARDY, OF NEWPORT, RHODE ISLAND, AND MARTIN
HUBBE, OF BAYONNE, NEW JERSEY.

TORPEDO-BOAT.

SPECIFICATION forming part of Letters Patent No. 251,288, dated December 20, 1881.

Application filed July 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. REYNOLDS, of New York, in the county and State of New York, have invented certain Improvements in Torpedo and other Submarine Boats, of which the following is a specification.

The object of the present improvements is to provide a boat suitable for use for torpedoes and other submarine purposes, and which may be made to properly maintain its upright position, even when made of a round cross-section or of any other form which offers equal resistance to turning on all sides.

To this end the improvements consist in the combination, in a torpedo or other submarine boat, of a cylindric body-section and a stern-section which has its greatest bulk elevated or extended above the axial line of the body-section, whereby the boat is effectually prevented from turning over. The boat may have a bow-section which tapers to a point in line with the axis of the body-section.

The improvements also consist in the combination, with such a boat, of a means for exhausting the steam, air, gas, or other motive agent employed to propel the boat, and for paying out a cable when the boat is used for a torpedo.

In the accompanying drawings, Figure 1 is a side view of a torpedo-boat embodying my improvements. Fig. 2 is a transverse section of a portion of the same, taken just forward of the propeller; and Fig. 3 represents a side view of the hull of the boat alone.

Similar letters of reference designate corresponding parts in the figures.

A designates the body-section of the boat. It is made, as here shown, in the form of a cylinder.

B designates a bow-section, (shown as made in the form of a cone,) having its axis in line with the axis of the body-section. These two sections of the boat, when thus shaped and combined, obviously offer the same resistance at all points to being turned in the water.

C designates a stern-section, (shown as made in the form of a cone,) having its axis upwardly inclined with relation to the axes of the body and bow sections A and B. The inclination of

the stern-section elevates or extends its portion of greatest buoyancy above the axes of the body and bow sections, and the boat is thus maintained in an upright position. Moreover, this result is contributed to by the resistance to turning which is offered by the excess of surface in the stern-section above the axes of the body and bow sections.

D designates a tube, which extends rearwardly through the lower part of the stern-section, and is connected to said section and stayed at the outer end by means of a stern post or brace, E. Through this tube passes a hollow shaft, F, on which is mounted a screw-propeller, G, behind the stern post or brace.

H designates a tube which extends through the hollow propeller-shaft. The steam, air, gas, or other motive agent employed to propel the boat may be exhausted through this tube; and a cable, I, whereby, through the agency of electricity, the boat may be controlled from the shore or other place, may be paid out through said tube.

J designates a fin arranged between the stern-section C and the tube D.

K designates a rudder connected with the fin J, and arranged between the stern-section C and the tube D.

The propeller-shaft F and the tubes D and H are in the same vertical plane as the axis of the stern-section, and this arrangement of the propeller-shaft in relation to a stern-section of the kind described tends to prevent the rolling of the boat.

All parts of the boat may be made of metal or other suitable material.

It will be seen that by my invention I provide a very simple means of maintaining a submerged boat in an upright position.

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

1. The combination, in a torpedo or other submarine boat, of a cylindric body-section and a stern-section which has its greatest bulk elevated or extended above the axial line of the body-section, substantially as specified.

2. The combination, in a torpedo or other submarine boat, with a cylindric body-section and a conical bow-section having its axis in

line with that of the body-section, of a conical stern-section having its axis upwardly inclined with relation to the axes of the body and bow sections, substantially as specified.

5 3. The combination, with a torpedo or other submarine boat having a hull composed of a cylindric body-section, a conical bow-section in axial line with the body-section, and an upwardly-inclined conical stern-section, of a propeller-shaft extending below the stern-section, in the same vertical plane as the axis thereof, and in a plane parallel with the axis of the body-section, substantially as specified.

10 4. The combination, with a torpedo or other

boat having a hull composed of a cylindric 15 body-section, a conical bow-section in axial line with the body-section, and an upwardly-inclined conical stern-section, of a tube, D, a hollow propeller-shaft, F, and a hollow tube, H, extending below the stern-section, in the same 20 vertical plane as the axis thereof, and in a plane parallel with the axis of the body-section, substantially as specified.

GEO. H. REYNOLDS.

Witnesses:

FREDK. HAYNES,
GEORGE H. BOTTS.