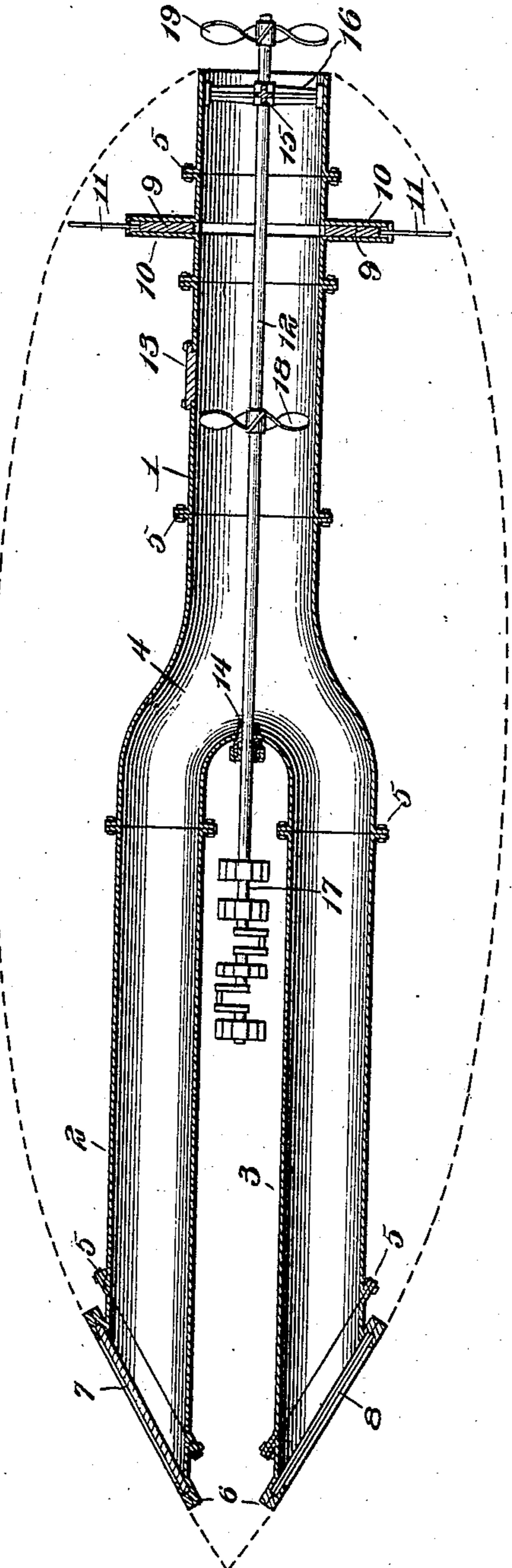


No. 848,457.

PATENTED MAR. 26, 1907.

H. E. GRACE.
BOAT PROPULSION.
APPLICATION FILED FEB. 13, 1906.

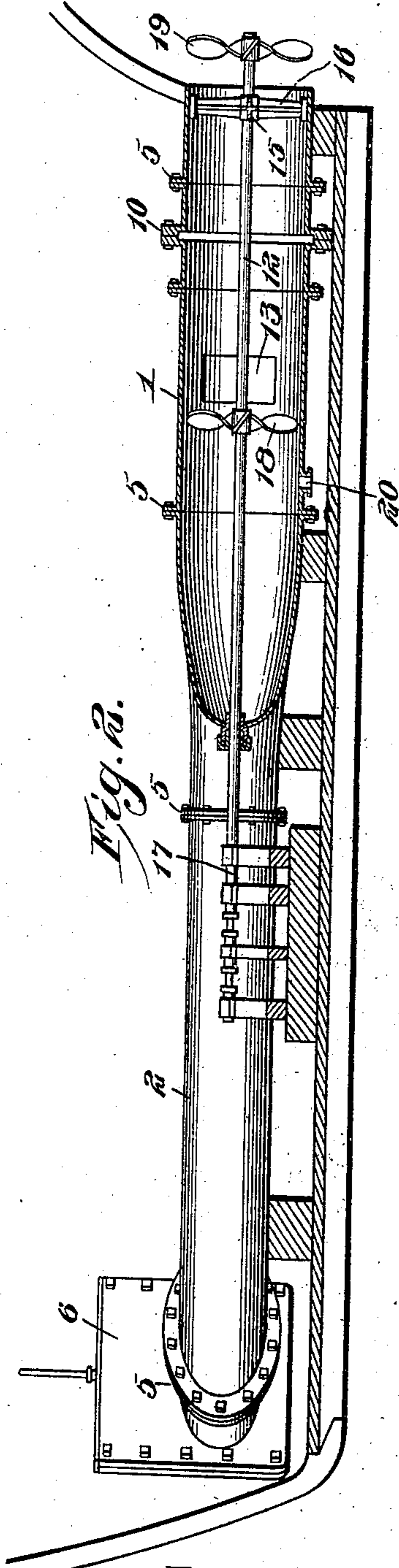
Fig. 1.



WITNESSES:

Louis R. Heinichs.
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Fig. 2.



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UNITED STATES PATENT OFFICE.

HARRY E. GRACE, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO
THOMAS F. FITZBERGER, JR., OF BALTIMORE, MARYLAND.

BOAT PROPULSION.

No. 848,457.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed February 13, 1906. Serial No. 300,904.

To all whom it may concern:

Be it known that I, HARRY E. GRACE, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented new and useful Improvements in Boat Propulsion, of which the following is a specification.

This invention relates to boat-propelling mechanism, the object of the invention being to provide novel mechanism for propelling boats embodying a water-flume or passage-way which extends through the hull of the boat fore and aft, receiving the water-supply adjacent to the bow of the boat and conducting the same to a housed propeller contained within the flume or passage-way, the propelling mechanism also embodying an externally-arranged propeller mounted in the usual place in rear of the stern-post.

A further object of the invention is to provide means whereby the ends of the flume may be closed and the water ejected therefrom so that repairs may be made within the interior of the flume or passage-way without putting the boat in dry-dock.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a sectional plan view of the boat-propelling mechanism, the hull of the boat being indicated in dotted lines. Fig. 2 is a longitudinal vertical section through the same, showing also a portion of the hull of the boat in sectional elevation.

In carrying out the present invention a flume or passage-way is provided extending fore and aft through the hull of the boat, as shown in the drawings, said flume being preferably constructed of tubular sheet-metal members and comprising a midship section 1 and starboard and port forks 2 and 3, respectively, the starboard and port forks merging into and connecting with the midship section by means of a crown or bifurcated union 4.

The entire flume, including the midship-section and the starboard and port forks, is made up of a plurality of members or sections flanged and coupled together at various points, as shown at 5. The forward ends of the forks 2 and 3 are provided with gate-

housings 6, which are set into the forward planking of the boat on opposite sides of the bow and flush with the outer surface or skin of the boat, as shown in Fig. 1, and within such housings are arranged starboard and port gates 7 and 8, respectively. Normally the gates 7 and 8 are open, so as to admit water freely to the flume; but when it is desired to get access to the operative parts of the mechanism contained in the flume the gates 7 and 8 may be closed.

Adjacent to the rear end of the midship-section 1 of the flume is arranged another gate, which is divided to form twin members or sections 9, the same being slidingly fitted and movable horizontally within housings 10, extending laterally from opposite sides of the flume, as shown in Fig. 1. The gate-sections are provided with outwardly-projecting stems 11, by means of which they may be drawn outward or pushed inward, and the meeting edges of the gate-sections 9 are notched or cut out to fit around the propeller-shaft 12. The fore and aft gates 7, 8, and 9 provide for closing the ends of the flume or passage-way, thus enabling a mechanic to get into the flume through a man-hole-cover 13 in one side thereof for the purpose of making any necessary repairs or removing any grass or other substance with which the flume may become choked.

The propeller-shaft 12 extends centrally through and longitudinally within the midship-section 1 of the flume, being mounted in suitable bearings 14 and 15, the latter being arranged at or near the rear end of the flume and supported by a suitable spider 16. At its forward end the propeller-shaft is connected with the engine-shaft 17, which is shown as located between the starboard and port forks 2 and 3. At a suitable point within the midship-section 1 of the flume a screw-propeller 18 is mounted fast on the shaft 12, and another stern-propeller 19 is mounted on the after end of the propeller-shaft beyond or in rear of the stern-post of the hull, as shown in the drawings. 20 designates a drain-port in the bottom of the flume for completely draining out any water that may remain in the flume after closing the gates.

The water passing into the forward ends of the forks 2 and 3 of the flume is brought together into the midship-section of the flume,

where it is acted upon by the internally-arranged propeller 18 and forced outward through the rear end of the flume, where it is again caught and acted upon by the stern-
5 propeller 19, the latter also receiving an additional supply of water from opposite sides of the keel or skeg in the usual way.

When it is desired to obtain access to the interior of the flume, the forward ends 7 and
10 8 are first closed, and the propellers are operated long enough to exhaust the water from the flume and eject the same outward from the rear end thereof, whereupon the after gate is closed. The manhole-cover 13 may
15 then be taken off and repairs made within the flume without placing the boat in dry-dock.

I claim—

A boat having a water flume or passage-
20 way extending fore and aft therethrough and

having the forward portion of said flume branched to form starboard and port forks which open out through the bow of the boat and leave an intervening engine-space closures for the forward and rear ends of the
25 flume and branches thereof, a propeller-shaft extending through the stern portion of the flume, and a plurality of propellers mounted on said shaft, one operating within the flume and the other in rear of the discharge end of
30 the flume the rear closure being located between said propellers, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY E. GRACE.

Witnesses:

GEO. L. MATTINGLY,
W. FRANCIS PRATHER, Jr.