

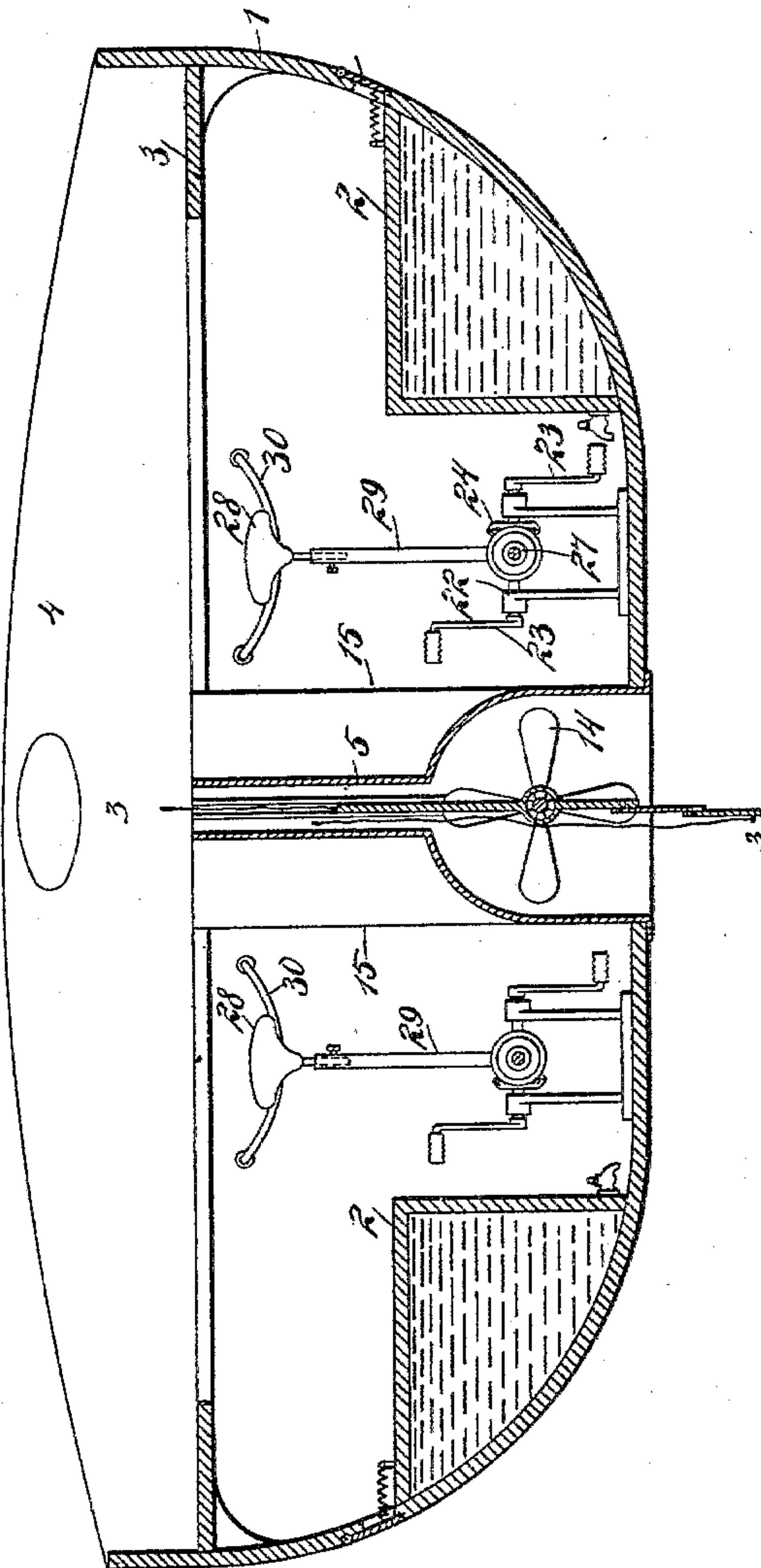
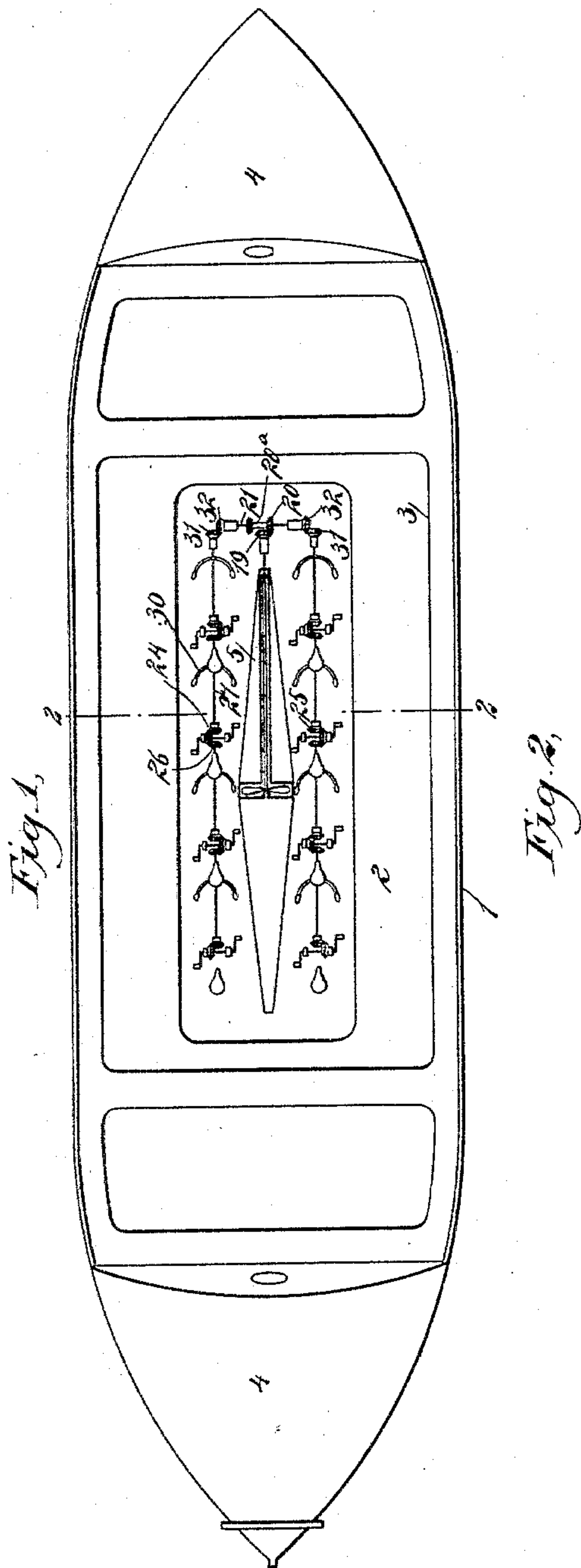
(No Model.)

2 Sheets—Sheet 1.

E. VERBURG.
BOAT.

No. 597,595.

Patented Jan. 18, 1898.



WITNESSES:

Edward Thorpe
C. R. Ferguson

INVENTOR
E. Verburg.
BY *Mumford*
ATTORNEYS.

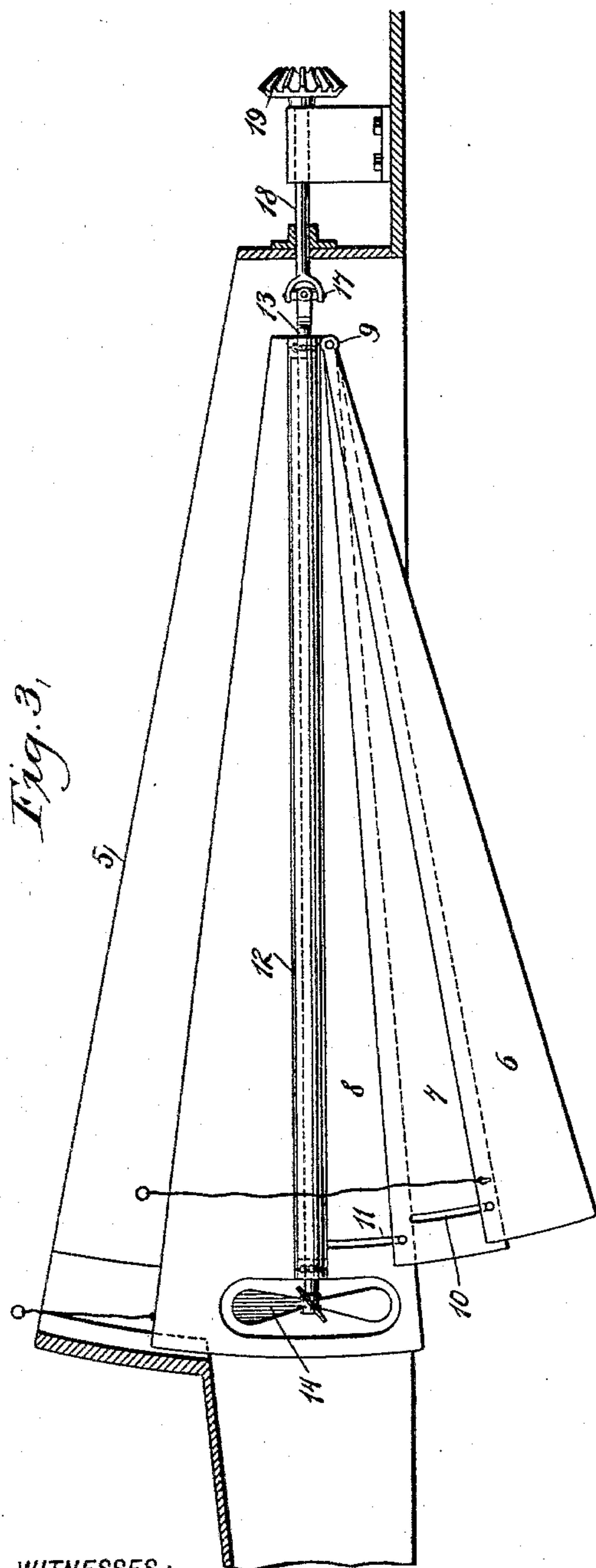
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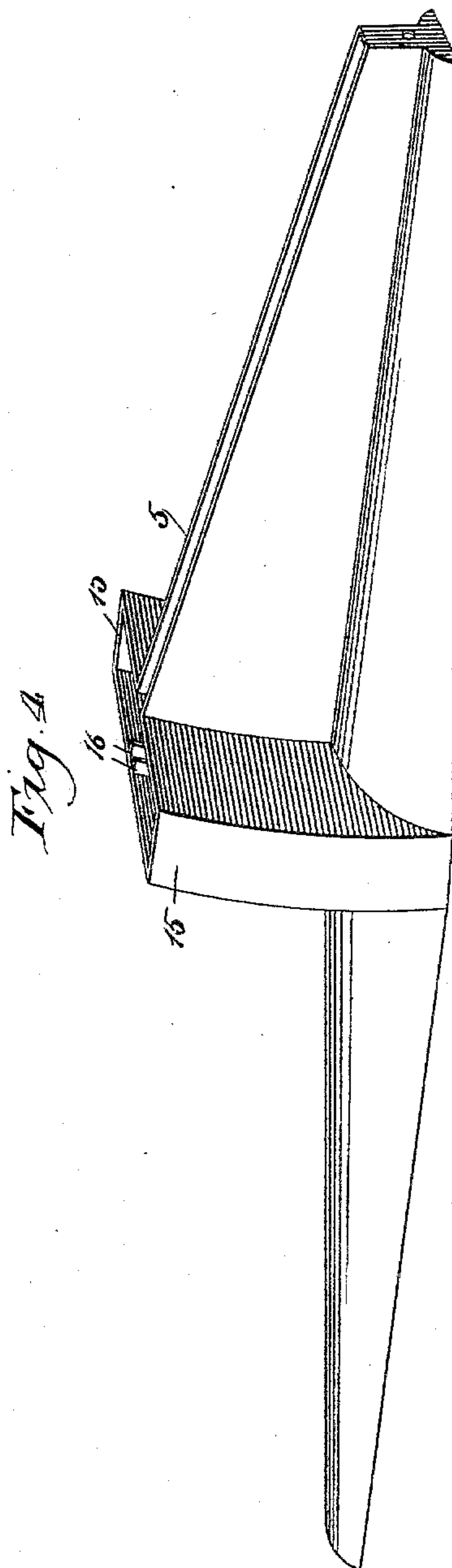
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UNITED STATES PATENT OFFICE.

EDWIN VERBURG, OF GRAND RAPIDS, MICHIGAN.

BOAT.

SPECIFICATION forming part of Letters Patent No. 597,595, dated January 18, 1898.

Application filed June 9, 1897. Serial No. 640,036. (No model.)

To all whom it may concern:

Be it known that I, EDWIN VERBURG, of Grand Rapids, in the county of Kent and State of Michigan, have invented new and
5 useful Improvements in Boats, of which the following is a full, clear, and exact description.

This invention relates particularly to life-boats employed at life-saving stations or on
10 marine vessels or the like; and the object is to provide a boat of this character that may be easily and rapidly propelled through the water without employing oars, as is usually the case, and in which the persons operating
15 the boat will face the bow thereof, so that any obstructions, such as wrecks or the like, may be seen and avoided.

I will describe a boat embodying my invention and then point out the novel features in
20 the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

25 Figure 1 is a top plan view of a boat embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a sectional elevation of a centerboard-trunk, showing the centerboard therein and also a propeller; and
30 Fig. 4 is a perspective view of the trunk.

Referring to the drawings, 1 designates the hull of a boat of the usual life-boat form. The hull is supplied along its sides with water-tanks 2, and extended around the boat
35 above the water-tanks is the seat 3. Air-chambers 4 may be provided at the bow and stern of the boat. Arranged within the hull and extended longitudinally thereof is a trunk 5, in which a centerboard is designed to swing.
40 As here shown, this centerboard consists of three sections 6, 7, and 8, pivoted at their forward ends on a rod 9. At the rear end the section 7 is provided with a transverse slot 10, into which a pin on the section 6 extends, and the section 8 is provided with a
45 similar slot 11, into which a pin on the section 7 extends. It will be seen, therefore, that the several sections move one relatively to the other, so that the centerboard may be
50 extended more or less into the water, as may be required.

The usual hoisting devices—such, for in-

stance, as chains or ropes—will be connected with the rear ends of the sections. The upper section, or section 8, has a tube 12 extended
55 longitudinally of it, and mounted to rotate in this tube is a shaft 13, to the rear end of which is attached a propeller-wheel 14. This propeller-wheel rotates in an opening at the rear end of the section 8, and for the accom-
60 modation of the wheel the trunk is provided with offsets 15. The rear end of the section 8 will move between guide-strips 16 to prevent any lateral movement of said section.

The propeller-shaft 13 has a universal-joint
65 connection 17 with a driving-shaft 18, having a bearing through the forward end of the trunk, and on this driving-shaft 18 is a bevel-gear 19, designed to engage with either one of the bevel-gears 20 20^a on a counter-shaft
70 21. The gears 20 20^a are mounted to slide on the shaft so as to be engaged with the gear 19 to propel the boat forward or backward. At each side of the trunk is a series of crank-shafts 22, operated by cranks 23, having foot-
75 pedals similar to those of a bicycle. The crank-shafts are provided with bevel-gears 24, meshing with bevel-gears 25 and 26 on short shafts 27, and above each crank-shaft and slightly rearward of the same is a seat or
80 saddle 28. The seat or saddle will have its post adjustably engaged in an upright 29, and extended rearward of the post or from the upright 29 is a handle-bar 30. The forward short shafts 27 are provided with bevel-
85 gears 31, engaging with bevel-gears 32 on the counter-shaft 21.

I have here shown the device as provided for eight operators—that is, four on each side
90 of the trunk. Of course a person sitting on a saddle and operating the crank-shaft below it will grasp the handle-bars immediately in front of him, and as the several crank-shafts are operated in unison it is obvious that a very rapid motion may be imparted to the
95 propeller by a comparatively slight outlay of individual strength. The open spaces and the seats in the boat will provide accommodation for passengers. Any ordinary steering mechanism may be employed.
100

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

1. A boat, comprising a hull, a trunk ex-

tended longitudinally in the hull, a centerboard mounted to swing in said trunk, a propeller carried by the centerboard, a series of crank-shafts arranged along each side of the trunk, and gearing connection between said crank-shafts and the propeller-shaft, substantially as specified.

2. A boat, comprising a hull, a trunk in said hull, a centerboard consisting of several sections mounted to swing on a common pivot in said trunk, a tube on one of said sections, a propeller-shaft extended through said tube, a propeller on the propeller-shaft, a driving-shaft having a universal-joint connection with the propeller-shaft, a series of crank-shafts having cranks and pedals, gearing connections between said crank-shafts and the power-shaft, seats or saddles adjacent to the crank-shafts, and handle-bars forward of the crank-shafts, substantially as specified.

3. A life-boat, comprising a hull, water-tanks in the hull, a trunk in the hull having offset portions at the rear end, a sectional centerboard mounted to swing in the trunk,

a tube extended longitudinally on one of the centerboard-sections, a propeller-shaft extended through the tube, a propeller-wheel on said shaft and movable into and out of the offset portions of the trunk, a driving-shaft having a universal-joint connection with the propeller-shaft, a gear-wheel on the outer end of said driving-shaft, a counter-shaft, a gear-wheel on said counter-shaft engaging with the first-named gear-wheel, a series of crank-shafts arranged along each side of the trunk, bevel-gears on said crank-shafts having connection with the bevel-gears on short shafts, cranks on said crank-shafts having foot-pedals, the forward ones of said short shafts having bevel-gears engaging with the bevel-gears on the counter-shaft, saddles supported above the crank-shafts, and handle-bars forward of the saddles, substantially as specified.

EDWIN VERBURG.

Witnesses:

ELTON P. BILLINGS,
JAS. HOOGERHYDE.