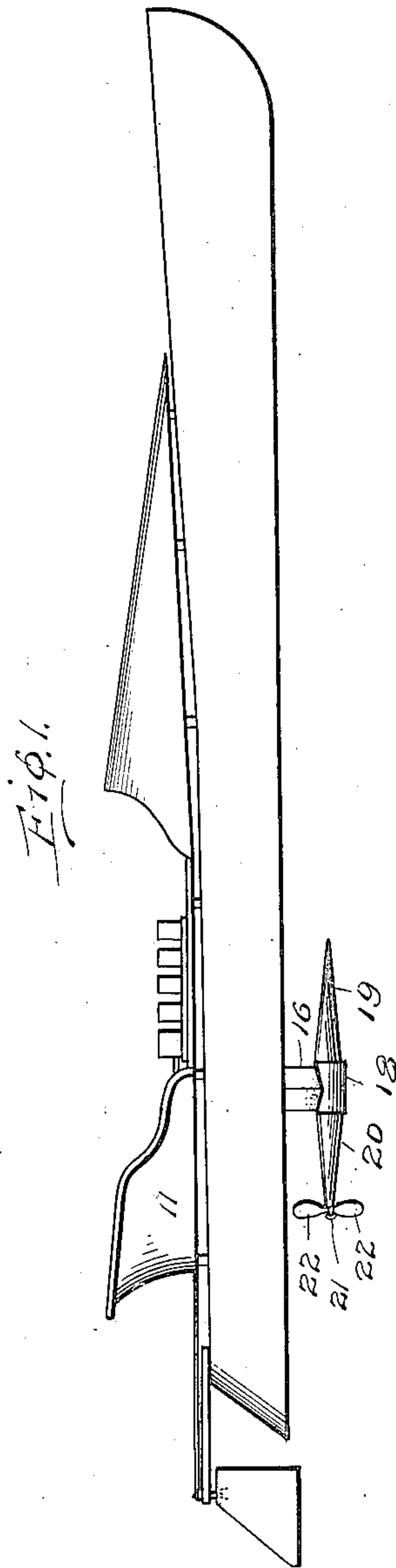
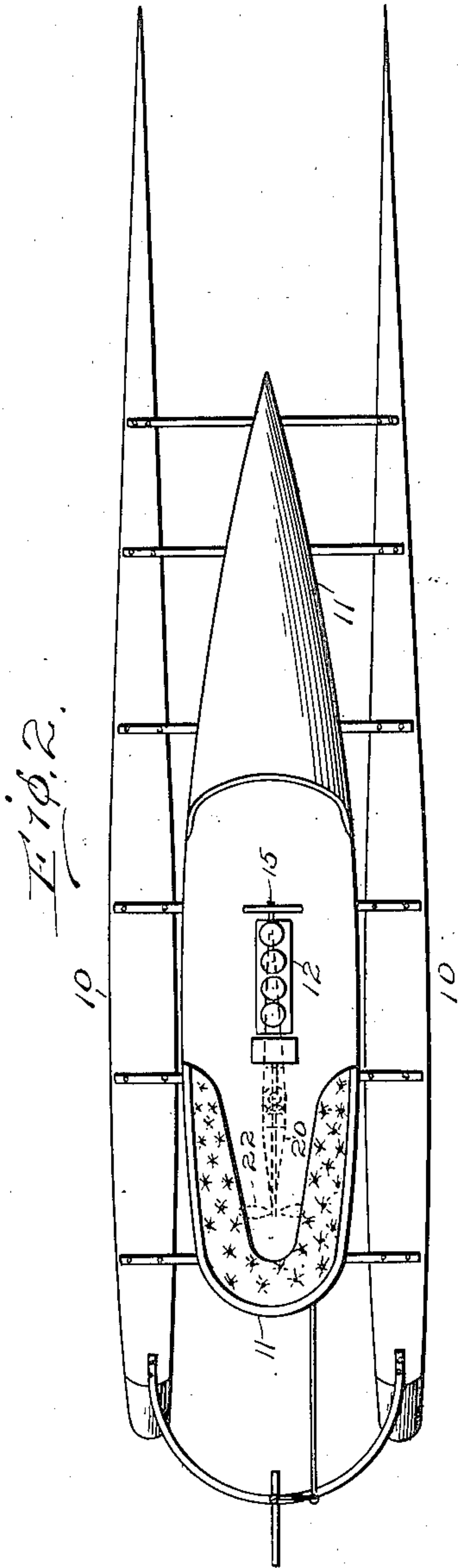


D. URCH.
MARINE PROPELLER.
APPLICATION FILED OCT. 10, 1908.

942,986.

Patented Dec. 14, 1909.

2 SHEETS—SHEET 1.



Inventor

Witnesses

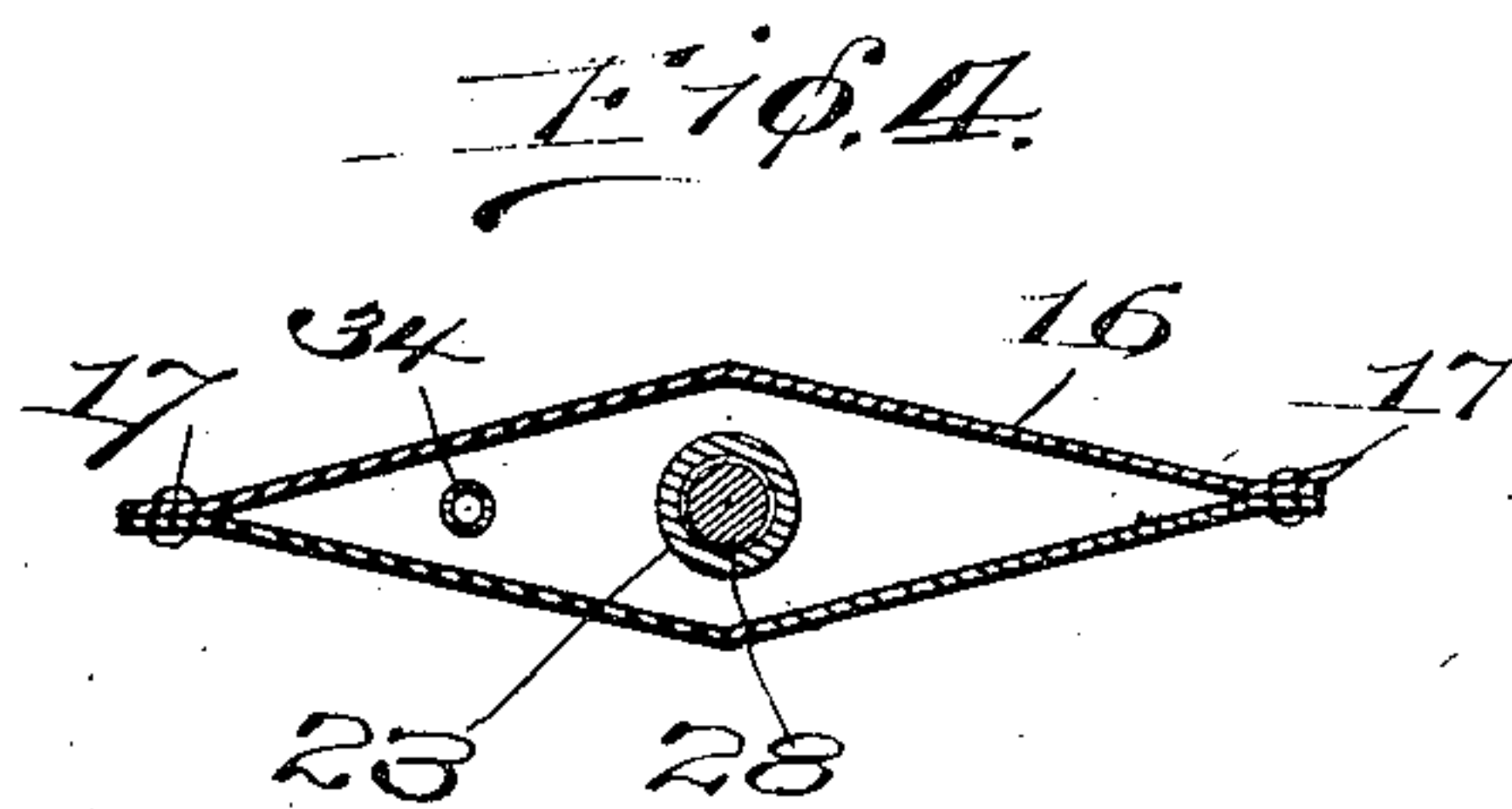
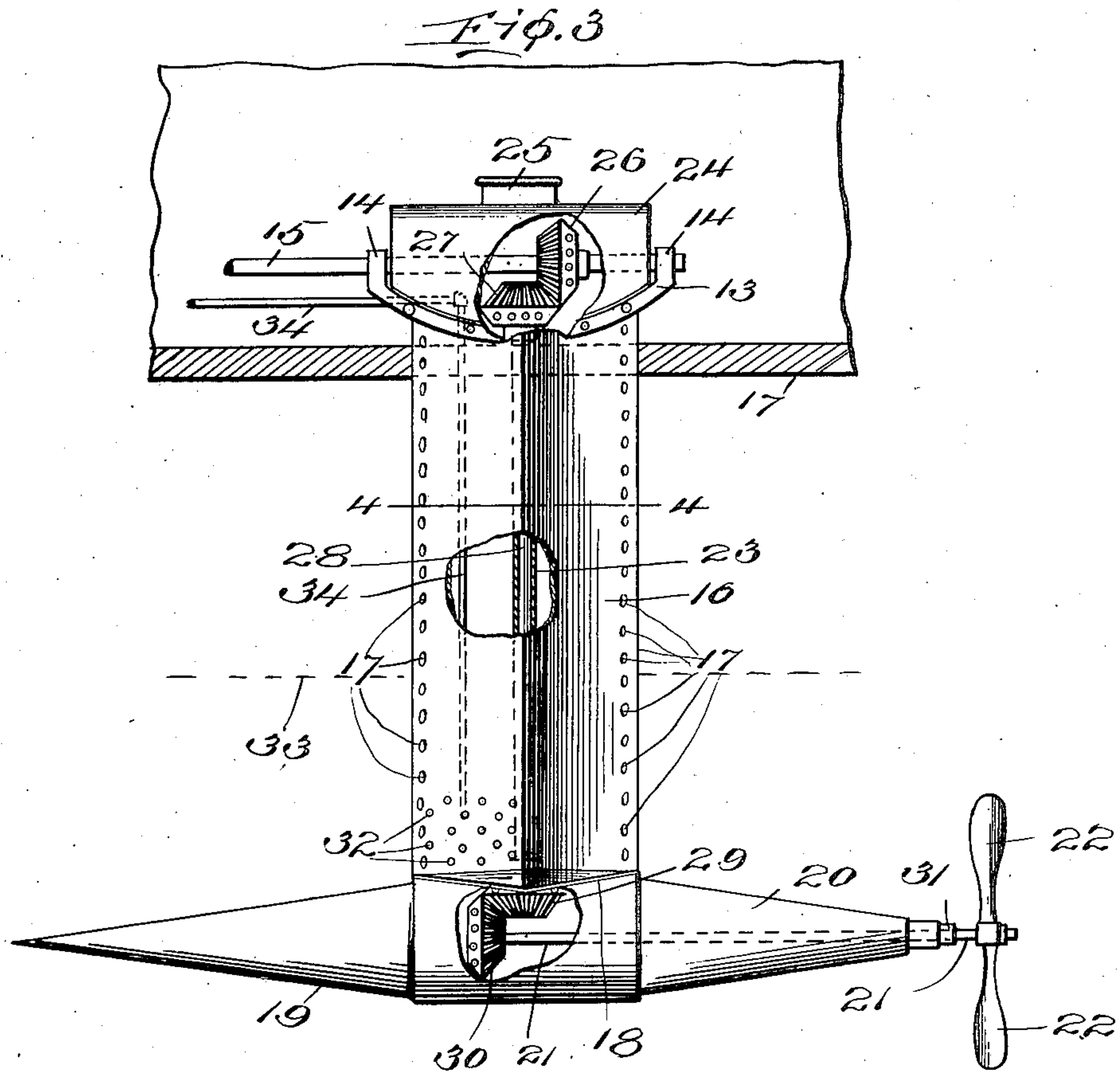
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UNITED STATES PATENT OFFICE.

DAVID URCH, OF PORTSMOUTH, NEW HAMPSHIRE.

MARINE PROPELLER.

942,986.

Specification of Letters Patent.

Patented Dec. 14, 1909.

Application filed October 10, 1908. Serial No. 457,147.

To all whom it may concern:

Be it known that I, DAVID URCH, a citizen of the United States, residing at Portsmouth, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Marine Propellers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to marine propellers, and has for an object to provide a propeller adapted to be secured to a craft of any style, but especially to small craft, and embodying improved facilities for conveying power to the propeller.

A further object of the invention is to provide a torpedo-shaped casing with means for suspending such casing beneath the craft and with means for transmitting power from the craft to the propeller of the torpedo.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings:—Figure 1 is a view of a conventional craft in side elevation with the improved propeller carried thereby. Fig. 2 is a top plan view of a conventional craft showing in dotted lines the position of the propeller beneath such craft. Fig. 3 is a view in side elevation of the propeller and propeller supporting means with portions broken away to show the inner construction. Fig. 4 is a transverse, sectional view of the suspending means taken on line 4—4 of Fig. 3.

Like characters of reference designate corresponding parts throughout the several views.

The improved propeller forming the subject-matter of this application is adapted to be associated with practically any style and form of water craft and is here shown as associated with a conventional craft of the catamaran type. As shown the craft comprises the usual spaced hulls 10 supporting a body 11 within which a motor of some form is mounted shown at 12 as a conventional explosive engine. While other features of a craft are shown it is to be understood that such are shown only to illustrate

an operative structure and form no essential part of the present invention.

At any convenient and desirable place upon the body of the craft a yoke 13 is secured having bearings as 14 for the shaft 15 of the engine. To the under side of the yoke 13 a casing 16 is suspended extending downwardly through the bottom 17 of the body of the craft and preferably substantially diamond-shaped or elliptical in transverse section. As shown the casing 16 comprises side plates bulged at their centers and with their edges drawn together and secured in any approved manner as by the rivets 17. At its lower end the casing 16 supports a cylinder 18 by being secured thereto in any approved manner, such cylinder forming the center of the propeller torpedo, the forward end of such torpedo being a cone 19 either solid or hollow, and the aft end being a truncated cone 20, which must be hollow to a certain extent to receive the propeller shaft 21, carrying the propeller blades 22. Centrally within the casing 16 a pipe 23 is erected communicating at its lower end with the cylinder 18 and at its upper end with an oil receptacle 24 having means shown conventionally at 25 for introducing oil therein.

The engine shaft 15 carries within the casing 24 a beveled gear 26 intergeared with a beveled gear 27 which said beveled gear 27 is carried upon the upper extremity of a shaft 28 operating within and slightly smaller than the interior diameter of the pipe 23. At its lower end the shaft 28 is provided with a beveled gear 29 intergearing with a similar beveled gear 30 carried upon the propeller shaft 21. It will thus be seen that rotary movement from the engine shaft 15 is transmitted through the gears 26 and 27 to the shaft 28 and through the gears 29 and 30 to the propeller shaft 21, all of such parts rotating within a space in communication with the oil receptacle 24 so that the entire mechanism from the engine shaft to and including the propeller shaft rotates in oil. The aft end of the cone 20 is also provided with a stuffing box 31 supplied with oil from the hollow portion of the cone 20 in communication through the cylinder 19 and pipe 23 with the oil receptacle 24.

It will be apparent that the interior of the casing 16 is not in communication with the

oil receptacle and advantage is taken of this fact to furnish water for cooling the engine or other desired purposes. To carry out this purpose a plurality of holes are provided in the fore side of the casing 16 below the water line which is shown diagrammatically at 33. Within the casing a pipe 34 is disposed having its lower end below the water line 33 adjacent the openings 32 and communicating by the necessary elbows and otherwise with the body of the craft so that water may be drawn from the interior of the casing 16 through such pipe 34 for use as found necessary. It is, of course, obvious that while the holes 32 are shown of a considerable size the size of such holes may be reduced or may be screened in any ordinary manner to properly strain water admitted to the casing 16 and to the pipe 34.

It will be seen that in the craft of the catamaran type as shown in Figs. 1 and 2 the bottom of the body is suspended some distance above the water line so that the casing 16 is of considerable length between such body and the water line. It is, of course, obvious that craft of different builds will necessitate casings of different length and different manner of securing the same to the craft.

It will be noted that the normal level of the oil carried for lubricating purposes within the oil reservoir is at a considerable height above the water level whereby a pressure is maintained without the use of any mechanical appliances upon the lubricant within the torpedo. By this means submerged ball or roller bearings are made possible without the danger of water leakage owing to the fact that the pressure of the oil within the casing is greater than the pressure without.

The employment of the propeller of the class shown also renders it possible for the marine constructor to carry the greatest beam of his craft for the necessary support of his motive power as far aft as he desires, thus making it possible to construct on finer lines and secure an increased speed with the propellers nevertheless properly submerged.

What I claim is:—

1. In a marine propeller, a craft body, a casing suspended beneath the body, a propeller casing carried by the suspended cas-

ing, transmitting and propelling mechanism journaled within the casings, means embracing the moving parts adapted to maintain a lubricant in contact therewith and to divide the suspended casing, and means to conduct water from within the suspended casing.

2. In a propeller, a craft body, a casing suspended beneath the craft body, a propeller casing carried by the craft body, means separating the suspended casing into oil and water compartments, and means to conduct water from the casing.

3. In a marine propeller, a craft body, a yoke carried by the body, a casing carried by the yoke and extending beneath the body and below the water line, a torpedo-shaped casing carried at the lower extremity of the suspended casing, means dividing the suspended casing into oil and water compartments, power transmitting mechanism journaled within the oil compartment, a propeller carried by the torpedo-shaped casing, means connecting the transmitting mechanism with the propeller, means to drive the transmitting mechanism, and a water pipe extending from the craft body into the water compartment of the casing.

4. In a marine propeller, a propeller casing, a propeller shaft journaled within and extending without the casing, a shaft extending within the propeller casing and inter-gearred with the propeller shaft, a casing embracing the last mentioned shaft and communicating with the propeller casing, and a casing surrounding the last mentioned casing and not in communication with such casing or the propeller casing.

5. In a marine propeller, a propeller casing, a propeller shaft journaled within and extending without the casing, a casing communicating with the propeller casing, a transmission shaft rotating within the last mentioned casing, a casing surrounding the last mentioned casing and provided with perforations, and means to withdraw a fluid from the last mentioned casing.

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

DAVID URCH.

Witnesses:

EDWARD H. ADAMS,
ALICE M. CRAIG.