

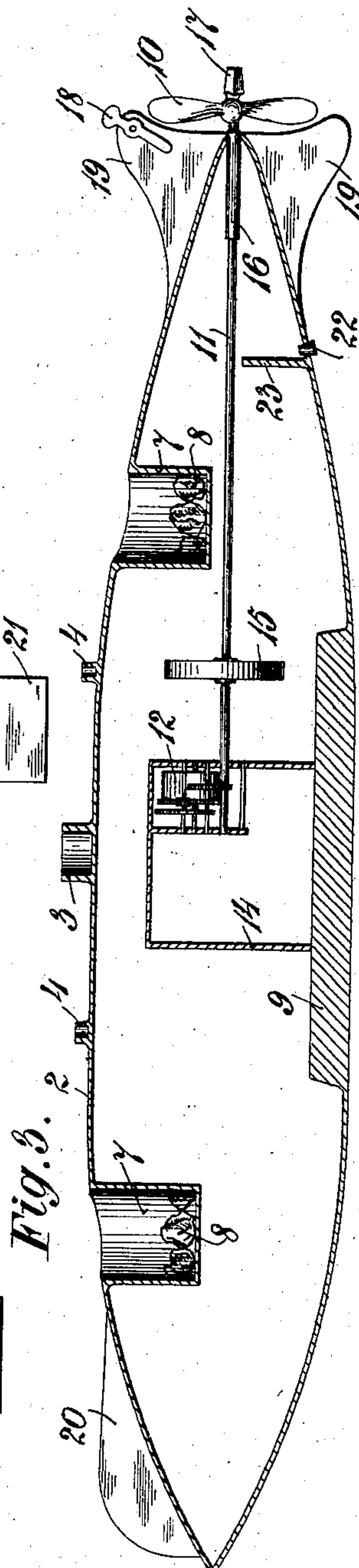
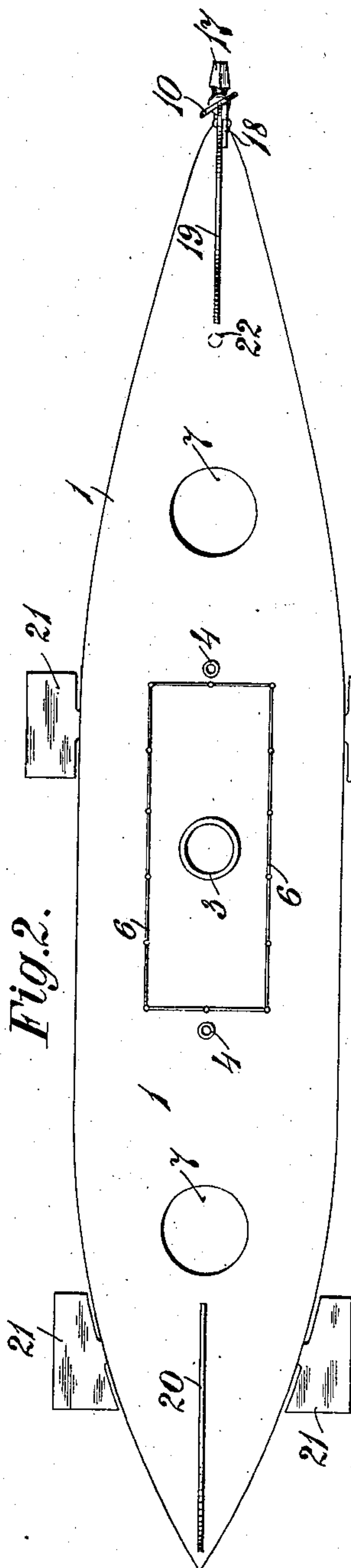
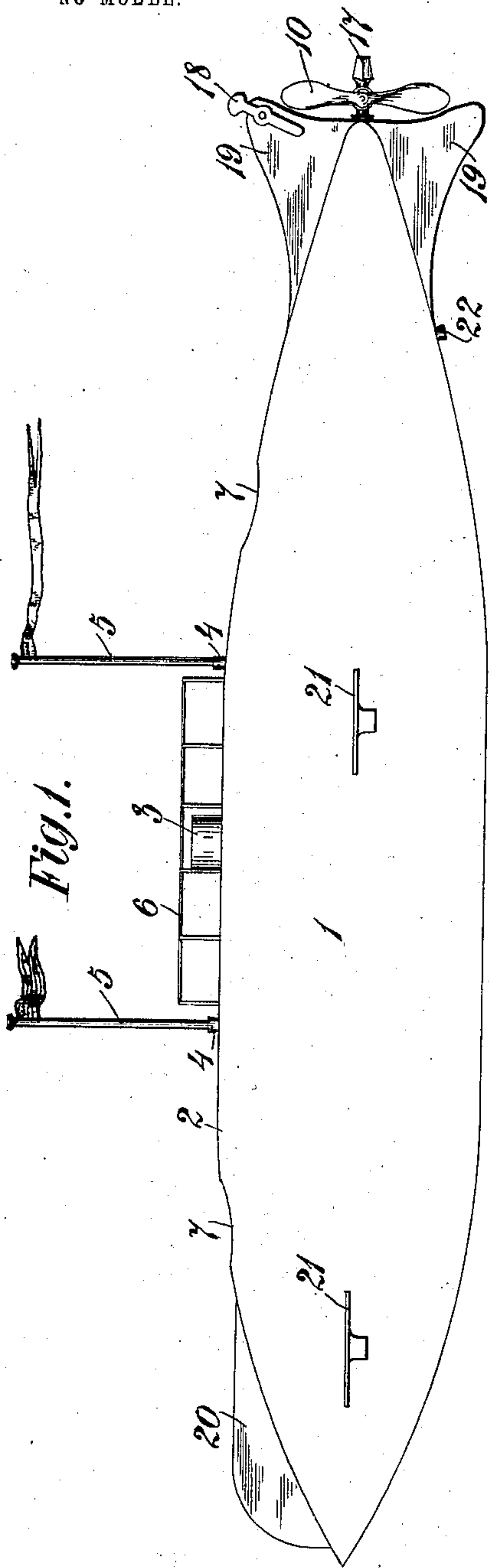
No. 742,326.

PATENTED OCT. 27, 1903.

A. F. HUMPHREY.
MINIATURE OR TOY SUBMARINE BOAT.

APPLICATION FILED JAN. 23, 1903.

NO MODEL.



Witnesses
Handwritten signature
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Inventor
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by *Handwritten signature*
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UNITED STATES PATENT OFFICE.

ALEXANDER F. HUMPHREY, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO CHARLES R. BUCHHEIT, OF PITTSBURG, PENNSYLVANIA.

MINIATURE OR TOY SUBMARINE BOAT.

SPECIFICATION forming part of Letters Patent No. 742,326, dated October 27, 1903.

Application filed January 23, 1903. Serial No. 140,258. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER F. HUMPHREY, a citizen of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Miniature or Toy Submarine Boats, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in miniature or toy submarine boats, the primary object of the invention being to provide a novel toy so constructed as to enable the person operating the same to cause it to be submerged beneath the water and to travel underneath the water until its propelling power has been exhausted, at which time it will again rise to the surface.

Briefly described, the invention comprises a hollow shell which may be preferably made of thin metallic material, though other material may be made to answer the purpose. Means is provided for partially submerging the hollow shell whereby to obtain the desired flotation. Means is also provided for causing the hollow shell when its driving mechanism is operated to be submerged and to travel underneath the water during the time its propelling mechanism is in operation, the exhausting of the power causing the shell to cease traveling, whereby it will again rise to the top of the water. Suitable driving means is provided for propelling the boat either when the same is floating or when submerged underneath the surface of the water.

The particular construction will be hereinafter more fully described and then specifically pointed out in the claims, and in describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a side elevation of my improved miniature submarine boat. Fig. 2 is a top plan view of the same. Fig. 3 is a longitudinal sectional view thereof.

To put my invention into practice, I provide a hollow hull 1, which is made tapering at the bow and stern thereof, the hull in prac-

tice being preferably made of a thin metallic material, though other material which may be found practical may be employed. I preferably construct the hull on the deck or top 2 thereof with a miniature conning-tower 3 and sockets 4 4 to receive the flag and pennant poles 5, whereby to impart a realistic appearance to the miniature boat. I may also provide the deck with a deck-rail 6, as shown, which is suitably fastened to the deck in any desired manner. The hull is constructed fore and aft of the deck with receiving-pockets 7, which are adapted to receive suitable weights 8, employed for the purpose of adding sufficient ballast to the hull in order to obtain the desired submersion or flotation prior to starting the operating mechanism. The hull of the boat is normally provided with a weighted bottom 9, forming the necessary ballast to properly float the boat when placed in the water. Where the hulls are made of thin metal, this ballast 9 may be a part of the hull. The boat is propelled through the water by means of the screw-propeller 10, mounted on the drive-shaft 11, connected with the spring-motor 12. This motor 12 is mounted in a suitable casing 14, which may be supported on the ballast 9. A fly-wheel 15 is preferably mounted on the drive-shaft 11, and at its rear end the drive-shaft operates in bearing-sleeve 16, provided therefor. The drive-shaft 11 is suitably provided with the end 17 to receive the key (not shown) for winding the motor. For holding the propeller after the motor has been wound to prevent the revolving thereof until the boat is placed in the water I provide a pivoted lever 18, which is mounted near the rear rudders 19 of the hull. The hull is provided at the forward end with a stationary rudder 20, and on its sides the hull carries horizontal rudders 21. With this construction of boat these horizontal rudders 21 are made of a material which will permit of the bending thereof without breaking, whereby to give to the rudders any desired inclination that may be required to cause the boat to descend below the surface of the water during its forward travel. I preferably provide the hull near its rear end with a port in the bottom thereof, which port is normally closed by a plug 22,

whereby any water which may leak through along the propeller-shaft may be drained from the hull, and in order to prevent this water from passing toward the front of the hull I provide the interior partition or bulk-head 23 near the rear end of the hull.

The person operating the boat inclines the horizontal rudders 21 to the proper position, as may be required, according to the nature of the boat or the water in which the boat is to be operated. The motor is wound and the propeller-shaft held against rotation by moving the lever 18 into engagement with the propeller and held in this position until the boat is placed in the water, at which time the lever 18 is moved out of engagement, whereby the operation of the propeller will move the boat forward, a sufficient number of weights having previously been placed in the chambers 7 to obtain the desired submersion of the boat prior to its diving operation. As soon as the spring-motor is run out or exhausted the boat will again rise to the surface of the water, when the motor may be again wound and the boat propelled.

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

1. A submarine toy boat comprising a hull having ballast-receiving chambers arranged in the center thereof, flexible rudders carried

by the hull whereby the rudders may be bent to a desired angle, propelling means for the boat and means pivotally secured to the hull for locking the propelling means, substantially as described.

2. A submarine toy boat comprising a hollow hull having a ballast in the bottom thereof, a frame mounted on said ballast, a propelling mechanism mounted in said frame, a shaft leading therefrom, a propeller secured thereto, and said hull having chambers in communication with the deck, and closed at their other ends, adapted to receive ballast to sink said boat to the desired depth, substantially as described.

3. A submarine toy boat, comprising a hollow hull, having a ballast in the bottom thereof, and independent chambers formed integral with the hull for receiving the necessary sinking-weight, propelling means for the boat, and means comprising a pivotal lever mounted on the hull for preventing rotation of the propelling means, substantially as described.

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

ALEXANDER F. HUMPHREY.

Witnesses:

A. M. WILSON,
E. E. POTTER.