April 15, 1930. E. CUMBO 1,754,983

MOTOR BOAT

Filed May 3, 1927

Fig. 1

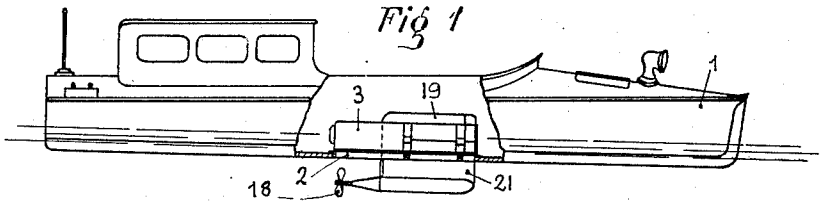


Fig. 2

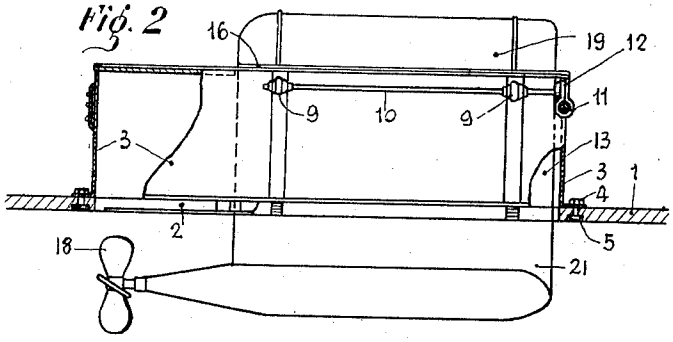
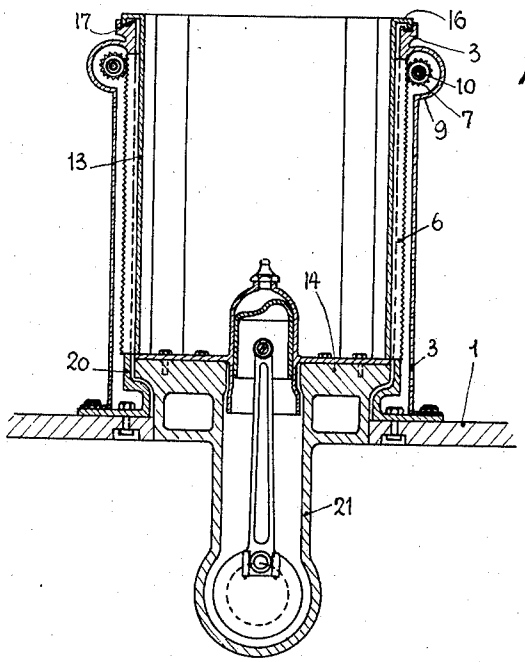


Fig. 3



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UNITED STATES PATENT OFFICE

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MOTOR BOAT

Application filed May 3, 1927, Serial No. 188,587, and in Italy May 4, 1926.

The present invention relates to motor boats and has for its object a boat having a motor and a propeller arranged in the intermediate portion of the hull and carried by a member providing for causing said parts to project into water when in operative conditions and to be retracted within said hull when in inoperative conditions.

The motor and the propeller are located in the portion of the boat hull intermediate its bow and stern, and therefore the advantage is secured that under no condition the propeller may be caused to operate in air; further the position of the motor and of parts connected therewith acts to lower the centre of gravity of the boat and improve its stability.

Further when an internal combustion or explosion engine is used as motor, the cooling of the engine is secured by the fact that it is dipped in water and heat is directly dissipated from said engine in the water body.

The motor and the propeller are mounted in a carrier adapted to be raised in order to retract the motor and propeller within the boat hull when the engine is to be inspected or repaired or when the boat is to be brought on shore, while said carrier may be lowered to carry the motor and propeller in operative conditions.

On the annexed drawing is shown by way of example an embodiment of this invention and—

Figure 1 is a side view of a construction of motor boat according to this invention with a portion of the hull removed to show the arrangement of the engine, propeller and carrier;

Figure 2 is an enlarged fragmentary sectional view of the engine and engine carrier;

Figure 3 is a transverse section of the engine and its carrier to a further enlarged scale.

In the construction illustrated, the bottom of the boat hull 1 is provided with an elongated opening 2 in or about the portion of the same intermediate its bow and stern, and on said opening is located a box 3 open at its top and bottom, said box extending upwardly in the boat hull and having its top edge above the boat water line in the conditions of maximum boat load. Said box 3 is fastened with a seal joint on the hull plating by means of bolts 4 and packing 5.

Of course said box may be made and/or fastened in any preferred manner on the boat hull provided it forms a pit in the intermediate portion of the hull said pit being adapted to enclose the boat motor or engine and the propeller thereof.

Within said box or pit is located a motor enclosed in a casing 13 having a bottom portion 14; said casing is arranged for vertical motion in said pit 3 and it is provided with vertical rack bars 6 arranged on its sides and each meshing with a pinion 7 journalled in the adjacent wall of pit 3.

Pinions 7 are located within chambers 9 provided in the walls of pit 3 and the pinions 7 located on the same side of the pit are interconnected by a shaft 10; the two longitudinal shafts 10 are operated at the same time and in opposite directions by a front transverse shaft 11 having worms meshing with worm wheels each solid with one of said shafts 10; said worms and worm wheels are located in casings 12 and therefore they are not apparent on the drawing.

The transverse shaft 11 may be driven in any suitable manner, say by means of a crank handle not shown.

As well understood, by operating the transverse shaft 11 the longitudinal shafts 10 and pinions 7 are actuated and in turn the rack bars 6 with casing 13 connected therewith are moved vertically in the pit 3.

Longitudinal bars 20 may be arranged along the edges of the opening 2 and bottom mouth of pit 3 to support the casing 13 and the motor when said casing is lowered as shown in Figure 3.

The engine is located in the casing 13 which encloses a portion of the engine and has its bottom provided by extensions 14 of the engine body. Said casing has a top rib or downwardly extending edge 16 adapted to seat in a groove 17 of the top mouth of pit 3 adapted to carry packing means.

A cover 19 is located on casing 13 to close its top mouth.

Of course a motor of any kind may be used, as an electric motor or an internal combustion or explosion engine, and no detailed description of the same is required.

As shown on the drawing when the motor is an internal combustion or explosion engine, a large portion 21 of the same is arranged to project downwardly from casing 13 and pit 3 to cause it to dip in outstanding water body. Thus an efficient cooling action is obtained without needing means for a water circulation.

In the drawing the casing 13 and the engine are shown in operative position in which the engine projects downwardly from the boat hull with the propeller 18 under the bottom line of the hull.

When the engine and propeller must be raised the shaft 11 is operated to actuate shafts 10 and pinions 7 and to retract the engine and propeller within pit 3 and boat hull.

The propeller 18 is carried by a shaft not apparent on the drawing which is enclosed within and journalled in the engine casing, and said propeller may be arranged at the aft end of said casing as illustrated or it may be arranged at the bow end of the same, the pit 3 having an elongated shape to provide a sufficient space 2 for passage of the engine and propeller.

In the described construction the motor or engine and the propeller provide a unitary member which is mounted in the boat hull in a manner providing for putting the propeller in and out of operation and no line shaft is to be arranged in the boat hull intermediate the motor and the propeller as in usual constructions.

Of course a plurality of motors may be provided in a single pit of the described character and said motors may have their shafts aligned with or parallel to each other and each of them may actuate a separate propeller or they may drive common propellers.

The propellers may be solid with the motor shaft for a direct drive, or they may be driven through a reducing gear.

Of course the present invention is not restricted to the described constructions and arrangements, it being only confined by the appended claims.

What I claim as my invention and desire to secure by United States Letters Patent is:—

1. In a motor boat having propelling means in the central portion of its hull, the combination of a well in said central portion of said hull opening in the water under it, a casing having a bottom and located in said well, a motor unit and a propeller mounted in said casing bottom, a lower portion of said motor unit and said propeller depending under the said casing bottom and the upper portion of said motor unit being enclosed within said casing, and cooperating means in said well and in said casing to support said casing with said bottom at the lower mouth of said well for the normal operation of the boat and to lift said casing into said well.

2. In a motor boat having propelling means in the central portion of its hull, the combination of a well in the central portion of said hull opening in the water under it, a casing having a bottom and located in said well and adapted to close the lower mouth of said well, a motor unit and a propeller mounted in said casing bottom, a lower portion of said motor unit and said propeller depending under said casing bottom and the upper portion of said motor unit being enclosed within said casing, cooperating means in said well and in said casing, to lift and lower said casing in said well and means in the lower mouth of said well for supporting said casing bottom for the normal operation of the boat.

3. In a motor boat having propelling means in the central portion of its hull, the combination of a well in the central portion of said hull opening in the water under it, a casing having a bottom and located in said well, an internal combustion engine mounted in said casing bottom with part of its cylinders enclosed within said casing and its shaft case under said bottom, a propeller carried by the shaft of said engine, and cooperating means in said well and in said casing to support said casing with its bottom at the lower mouth of said well for the normal operation of the boat and to lift said casing into said well.

4. In a motor boat having propelling means in the central portion of its hull, the combination of a well in the central portion of said hull opening in the water under it, a casing having a bottom and located in said well and adapted to close the lower mouth of said well, an internal combustion engine mounted in said casing bottom with part of its cylinders enclosed within said casing and its shaft case under said casing bottom, a propeller carried by the shaft of said engine, cooperating means in said well and in said casing to lift and lower said, casing in said well and means in the lower mouth of said well for supporting said casing bottom for the normal operation of the boat.

5. In a motor boat having propelling means in the central portion of its hull, the combination of a well in the central portion of said hull opening in the water under it, a casing having a bottom and located in said well, an internal combustion engine having a

plurality of cylinders in line in the direction of the axis of said hull and mounted in said bottom with part of its cylinders enclosed within said casing, said engine comprising a shaft case of elongated form, located under said casing bottom, a propeller carried by the shaft of said engine, and cooperating means in said well and in said casing to support said casing with its bottom at the lower mouth of said well for the normal operation of the boat and to lift said casing into said well.

In testimony whereof I have signed my name to this specification.

ERNESTO CUMBO.