No. 874,031. PATENTED DEC. 17, 1907.

I. E. PALMER.

HULL OF VESSELS.

APPLICATION FILED JAN. 12, 1904.

Fig. 1.

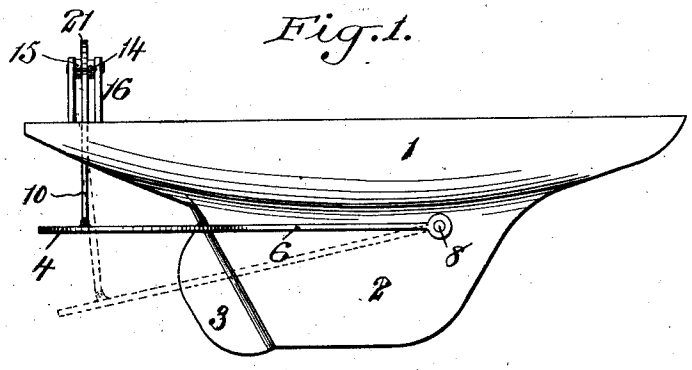


Fig. 2.

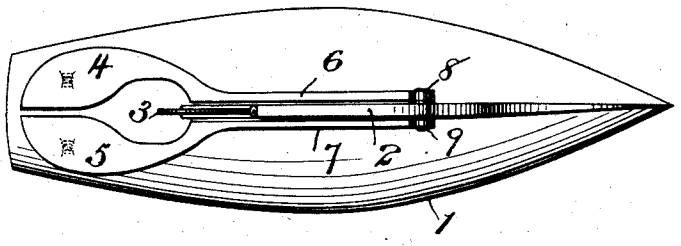
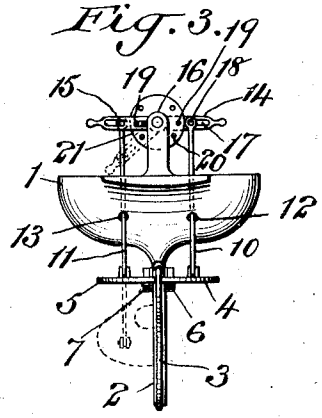


Fig. 3.



Witnesses:-
Henry Thieme.
F. George Barry.

Inventor:
Isaac E. Palmer
by attorneys
Brown & Seward

UNITED STATES PATENT OFFICE.

ISAAC E. PALMER, OF MIDDLETOWN, CONNECTICUT.

HULL OF VESSELS.

No. 874,031. Specification of Letters Patent. Patented Dec. 17, 1907.

Application filed January 12, 1904. Serial No. 188,708.

To all whom it may concern:

Be it known that I, ISAAC E. PALMER, a citizen of the United States, and resident of Middletown, in the county of Middlesex and State of Connecticut, have invented new and useful Hulls of Vessels, of which the following is a specification.

My invention relates to hulls of vessels, with the object in view of rendering them more stable under sail pressure or in sea-way or in both.

In the accompanying drawings, Figure 1 is a view in side elevation of the hull of a vessel embodying my invention, Fig. 2 is a bottom plan view of the same, and Fig. 3 is a stern view of the same.

The type of hull which I have chosen to illustrate my invention is a modern keel boat intended to be propelled by sail power alone, but it is to be understood that the invention may be applied to power propelled craft as well as those propelled by sail power.

The body of the hull is denoted by 1, its keel by 2 and its rudder by 3. Wings 4, 5, consisting of thin flat plates and provided with forwardly extending shanks 6, 7, are hinged at the forward ends of the shanks, as shown at 8 and 9, respectively, to opposite sides of the keel 2. The said wings 4 and 5 are laterally disposed upon opposite sides of the fore and aft central vertical plane of the hull and are preferably located under the stern of the vessel and below the water line. They are made vertically adjustable by means of rods 10 and 11 hinged to their upper faces, one to each, and extending up through sockets 12, 13, in the stern of the vessel and into engagement with suitable operating mechanism.

In the present instance I have shown operating levers, one, 14, for operating the rod 10 and one, 15, for operating the rod 11. These levers 14 and 15 are independently fulcrumed on a post 16 fixed on the stern of the vessel, and each is provided with an elongated slot 17 through which the upper end of the operating rod is connected to the lever by a suitable pin 18 to permit the lever to swing without bending the rod. The levers 14, 15, are locked in their different swinging adjustments by means of pins 19 carried by the levers and adapted to slide into and out of holes 20 in a perforated plate 21, attached to the post 16.

In sailing craft when the pressure on the sail tends to heel the boat over at an acute angle to the water level, the wing on the leeward side, the wing 5, for example, may be lowered into a slanting position as shown in dotted lines, Figs. 1 and 3, and the forward movement of the hull will tend to produce an upward pressure on the wing 5 and hence on the lower side of the hull, tending to right the hull into a level or nearer a level position. When the hull is being forced forwardly on an even keel, as by power, the two wings may be slightly lowered and the tendency will be to lift the stern and prevent "squatting". When there is no need of lowering the one or the other or both to level the hull, the two act as a preventer to keep the boat from pitching in sea-way as the stern will be prevented from a sudden lift by the water above the wings and from a sudden depression by the water below the wings. The wings may, either one or both of them, be lifted into an upwardly slanting position above the surface of the water if so desired to relieve the drag.

It is obvious that changes might be resorted to in the form and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the structure herein shown and described, but

What I claim is:—

The combination with the hull of a vessel, of wings independently movable in a vertical direction and means for raising and lowering the said wings and for locking them in the desired adjustment, the said wings being hinged one on each of the opposite sides of the keel, their shanks extending thence rearwardly along the opposite sides of the keel and the blades of the wings gradually extending laterally as they pass under the overhanging stern of the vessel on opposite sides of the central vertical longitudinal plane thereof.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this 31st day of December 1903.

ISAAC E. PALMER.

Witnesses:
CHAS. M. SAUER,
E. H. TRAUTMAN.