

C. HOFFMAN.

BOAT.

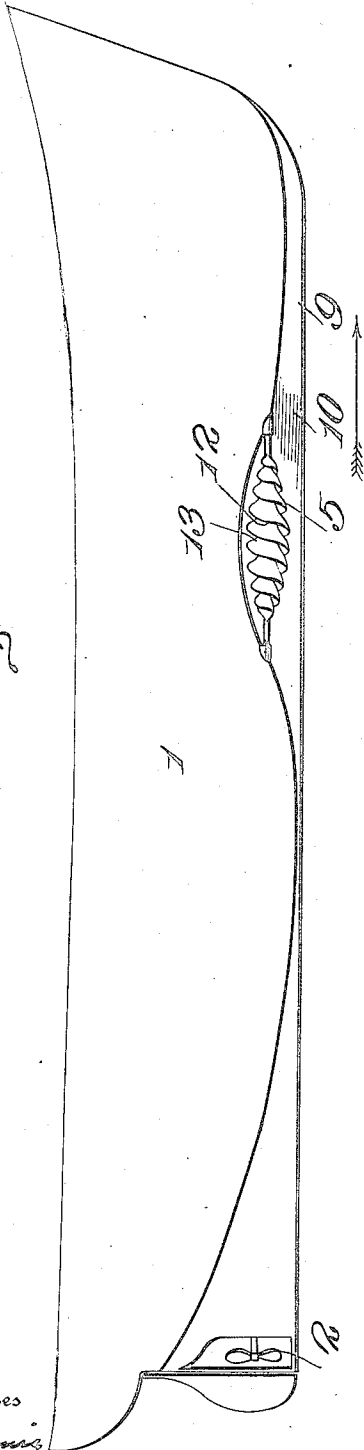
APPLICATION FILED MAR. 19, 1909.

941,923.

Patented Nov. 30, 1909.

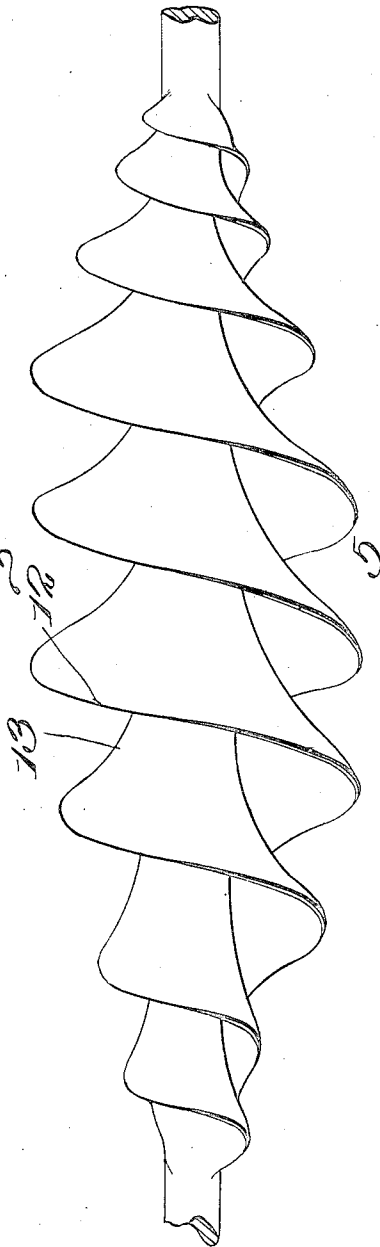
2 SHEETS—SHEET 1.

FIG. 1.



Witnesses
R. S. Magnus
J. M. Copenhafer.

FIG. 2.



Charles Hoffman
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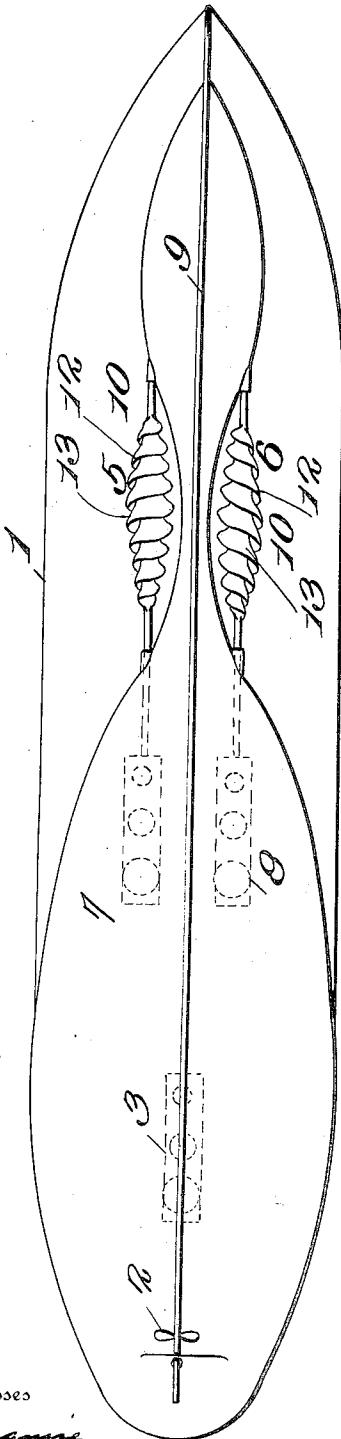
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2 SHEETS—SHEET 2.

Fig. 2.



Witnesses
F. I. Magnus
J. M. Copenhagen

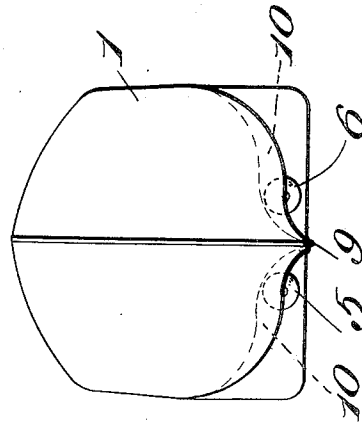


Fig. 3.

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UNITED STATES PATENT OFFICE.

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BOAT.

941,923.

Specification of Letters Patent.

Patented Nov. 30, 1909.

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To all whom it may concern:

Be it known that I, CHARLES HOFFMAN, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Boats; 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.

The primary object of this invention is to so form and locate auxiliary screw propellers as to secure a maximum of power and insure the propellers being always submerged regardless of the rolling or pitching of the vessel.

The invention will be hereinafter fully set forth and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a diagrammatic view in side elevation. Fig. 2 is a bottom plan view. Fig. 3 is an end view. Fig. 4 is an enlarged view of one of the auxiliary propellers.

Referring to the drawings, 1 designates the hull of a vessel; 2 the ordinary propeller; 3 the engine or series of engines for operating such propeller; 5 and 6 two auxiliary propellers; and 7 and 8 two engines or series of engines for separately operating each of the auxiliary propellers. To accommodate and afford protection to these auxiliary propellers, the hull of the vessel, at a point preferably between the bow and amidships, is formed on its underside, and on opposite sides of keel 9, with two concaved recesses 10 wherein the auxiliary propellers are located in such juxtaposition to the keel as to insure the throwing of the water away from the vessel and toward the stern. These recesses conform to the general outline of the contiguous portions of the propellers so that the latter may fit in said recesses and be so positioned as to prevent floating objects being carried between the propellers and the hull.

Each of the auxiliary propellers is composed of a continuous duplex screw of double cone shape in outline, that is to say, the spiral blades composing the propellers are widest at the centers and gradually terminate in width toward the ends. The novelty of my invention resides primarily in the manner in which these spiral blades are

formed, each being concaved radially on its forward face, as at 12, and also concaved transversely on its rear face, as at 13, the overhanging portions of the blades presenting a hood-like appearance. By this means the concaved faces 12 form pockets for the water which is guided thereinto by the rear face of the overhanging forward spiral. By this means I am enabled to procure a maximum of power, each propeller taking hold of the water so as to force the latter rearwardly toward the stern and at the same time throw it away from the keel, thus precluding all possibility of floating objects becoming entangled with the propellers. The action of the rearward faces of the spirals in taking hold of the water is aided by the concaved formation of the forward faces thereof.

It is manifest that by means of my invention the auxiliary propellers will always be submerged, being placed close to the keel and at a point in rear of the bow but forward of amidships. In this way I avoid all liability of racing. The auxiliary propellers present large surfaces acting on the water, thereby increasing the speed of the vessel, and the power of these propellers is greatly increased by the formation of the pockets by the forward faces of the spirals, the water being guided thereinto by the rear faces of the forward spirals.

I claim as my invention:—

In combination with a boat having its hull provided, at points forward of amidships, with inwardly extended recesses, two auxiliary screw propellers, located each in one of said recesses, each of said propellers having duplex spirals extending the full length thereof and concaved radially on their forward faces and concaved transversely on their rearward faces, the overhanging portions of the spirals being of hood-like formation, each propeller being of gradually increasing width from its ends to the center thereof.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

CHARLES HOFFMAN.

Witnesses:

JOHN A. MURPHY,
FRANCIS S. MAGUIRE.