

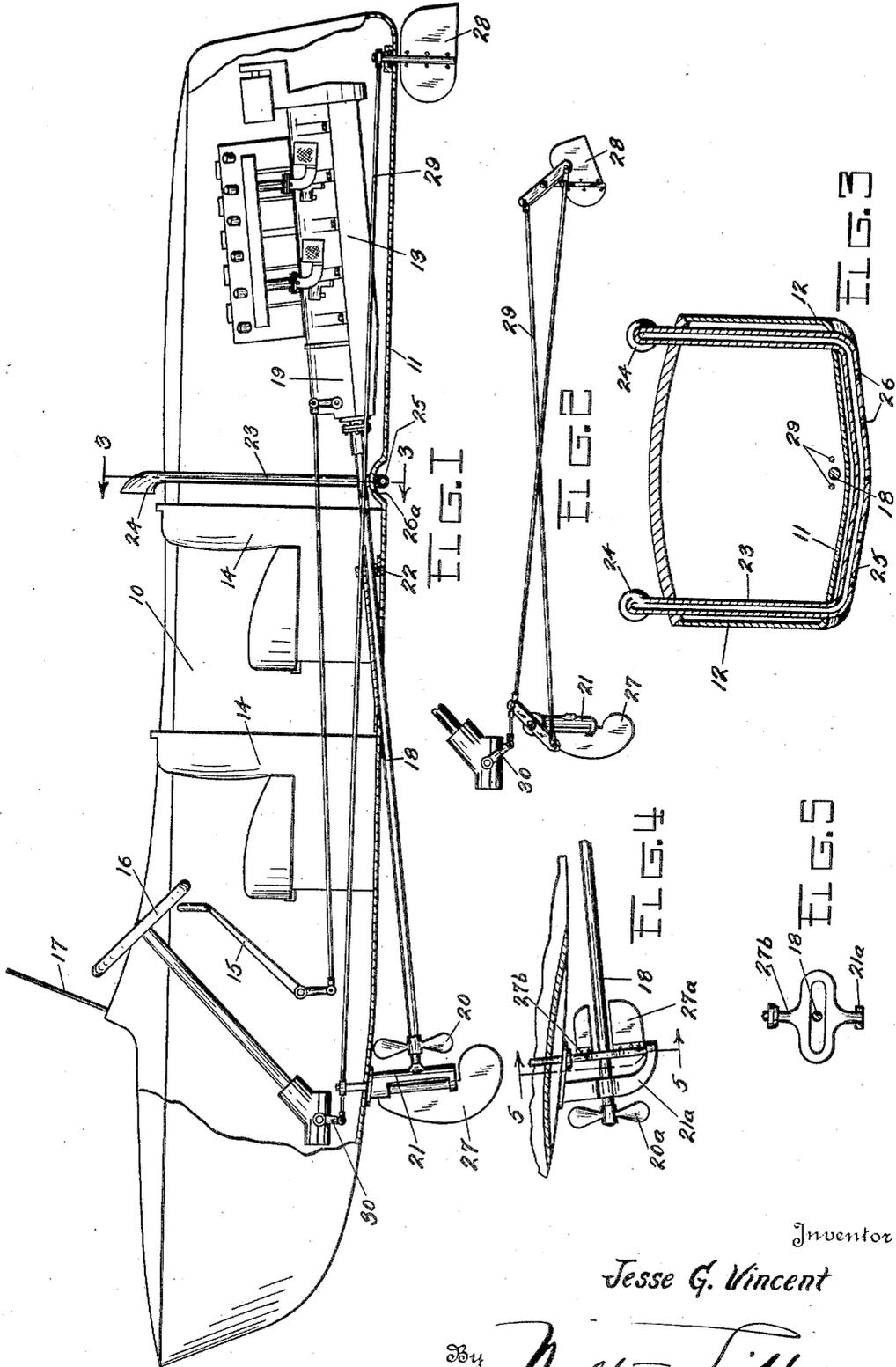
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BOAT

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# UNITED STATES PATENT OFFICE.

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## BOAT.

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This invention relates to boats and more particularly to motor boats.

One of the objects of the invention is to provide a boat with a hull and propelling means adapted to acquire great speed.

Another object of the invention is to provide a boat with a propelling means that will largely eliminate suction at the stern.

Another object of the invention is to provide a boat hull with a forward propeller and an engine mounted at the stern to thereby produce a better distribution of weight.

Another object of the invention is to provide a boat with means of feeding air to the bottom surface without affecting the propelling means.

Another object of the invention is to provide a boat with improved propelling and steering means.

Another object of the invention is to provide a boat with propulsion means at the bow to thereby produce greater speed and stability.

Other objects of the invention will appear from the following description taken in connection with the drawings, which form a part of this specification, and in which:

Fig. 1 is a vertical longitudinal section through a boat embodying the invention;

Fig. 2 is a more or less diagrammatic view of the rudders and connections;

Fig. 3 is a vertical transverse section on the line 3—3 of Fig. 1;

Fig. 4 is a view of a slightly modified form of propeller and rudder arrangement, and

Fig. 5 is a section on the line 5—5 of Fig. 4.

Referring to the drawing, 10 represents the hull of a boat made in accordance with this invention. The hull, while technically of the displacement type, yet is formed at its rear portion at least with almost a flat bottom, as shown in Fig. 3. It will be seen that the bottom is of slightly V-shape but yet is nearly flat so that considerable planing effect is obtained. The bottom is indicated at 11 and the sides are marked 12.

Since the propeller of this boat is to be mounted at the bow, thereby reducing the stern suction that occurs with a stern propeller, means are provided for overcoming what might otherwise be a tendency to raise the stern of the boat. Thus the engine 13

is mounted in the stern of the hull and the passengers' and operator's seats 14 are mounted forwardly of the engine, the operator's seat 14 being well forward of the middle of the hull and the operator's controls, such as his gear shift 15 and his steering gear 16, being mounted adjacent the forward seat 14 and immediately in the rear of a windshield 17. This provides a very advantageous distribution of weight so that the hull settles in the water at the stern as the boat is propelled forwardly thus causing a certain amount of planing and greatly reducing the displacement at speed.

A propeller shaft 18, connected to the engine crankshaft, extends forwardly from the engine 13 and reverse gear box 19, to a propeller 20 adjacent the bow of the boat. The forward end of the propeller shaft 18 is supported by a bearing in a bracket 21 which extends downwardly from the keel of the boat as shown particularly in Fig. 1. The propeller shaft 18 extends through the usual stuffing box 22 and is arranged at an acute angle to the boat bottom as is clearly indicated in the drawings.

Means are provided for feeding air to the bottom of the boat so that the surface friction may be reduced. As shown, this air feeding means is in the form of a U-shaped pipe 23 having the upper ends 24 preferably open forwardly so that air may freely enter the pipe. The pipe 23 extends crosswise along the bottom of the boat as shown at 25 and is there provided with a series of openings 26. If desired, the bottom of the boat may be recessed as at 26<sup>a</sup> to receive the pipe.

It will be understood that when the boat is moving rapidly suction will be created along its bottom and this will draw air through the pipe 23 and feed it along the bottom of the boat thereby making the boat ride on the air, as it were, instead of directly in contact with the water. With the propeller mounted at the front as shown in this invention, a large volume of air may be thus fed to the boat bottom without in any way interfering with the propeller.

In the form of the invention shown, both bow and stern rudders are used, a bow rudder 27 being shown as mounted in the bracket 21 and a stern rudder 28 being suitably mounted at the stern of the hull. These rudders are shown as interconnected by rods

29 and in turn are connected to the steering arm 30 of the steering gear 16 above referred to.

In Figs. 4 and 5 the propeller shaft 18 extends through a forward bracket 21<sup>a</sup> and a propeller 20<sup>a</sup> is mounted forwardly of said bracket. In this construction a bow rudder 27<sup>a</sup> is mounted just aft of the bracket 21<sup>a</sup> and it is intended that this rudder should be connected with the stern rudder as is the rudder 27 of Fig. 1. The rudder post 27<sup>b</sup> is looped around the propeller shaft 18 as shown particularly in Fig. 5, so that the rudder may be operated without interfering with the propeller shaft.

It will be understood that various forms of the invention other than those described above may be used without departing from the spirit or scope of the invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a boat, in combination, a hull having a keel, a propeller shaft making an acute angle with the bottom of the hull and extending to adjacent the bow thereof, an engine mounted in the stern of the hull and connected to said shaft, and a propeller positioned at the forward end of the shaft below said keel.

2. In a boat, in combination, a hull, propelling means at the forward end of the hull, and means including a conduit extending transversely of said hull and exteriorly thereto for feeding air to the bottom of the hull.

3. In a boat, in combination, a hull, and air feeding means for the bottom of the boat, comprising a conduit extending transversely of said hull, said conduit terminating in two funnels open to the atmosphere.

4. In a boat, in combination, a hull, a

propeller at the forward end, an engine at the stern of the boat and connected to drive said propeller, and a pipe having a portion extending laterally across the bottom of said hull and having vertical extensions positioned along opposite sides of said hull, adapted to lead air to the bottom of the boat.

5. In a boat, in combination, a hull, air feeding means for the bottom of said hull, comprising a U-shaped conduit having a plurality of openings, certain of said openings being normally submerged and others thereof being normally open to the atmosphere.

6. In a boat, in combination, a hull, a laterally extending recess therein, an air pipe positioned in said recess and having openings, normally submerged.

7. In a motor boat, in combination, a hull, an engine mounted in the stern of said hull, a forward propeller, and a gear connection for said propeller to said engine, forward and rear rudders, a common control means for said rudders, and a gear shift control, said control means and gear shift control being positioned in the bow of said hull.

8. In a boat, in combination, a hull, a bracket near the forward end of the hull extending downwardly from the bottom, a bow rudder mounted on said bracket, and a propeller shaft having a bearing in said bracket.

9. In a motor boat, in combination, a hull, an engine mounted in the stern of said hull, a forwardly extending propeller shaft connected to the engine, a propeller on said shaft near the bow end of said hull, and a rudder mounted immediately aft of said propeller.

In testimony whereof I affix my signature.

JESSE G. VINCENT.