Aug. 6, 1929. F. REBL 1,723,577

BOAT CONSTRUCTION

Filed March 22, 1928 3 Sheets-Sheet 1

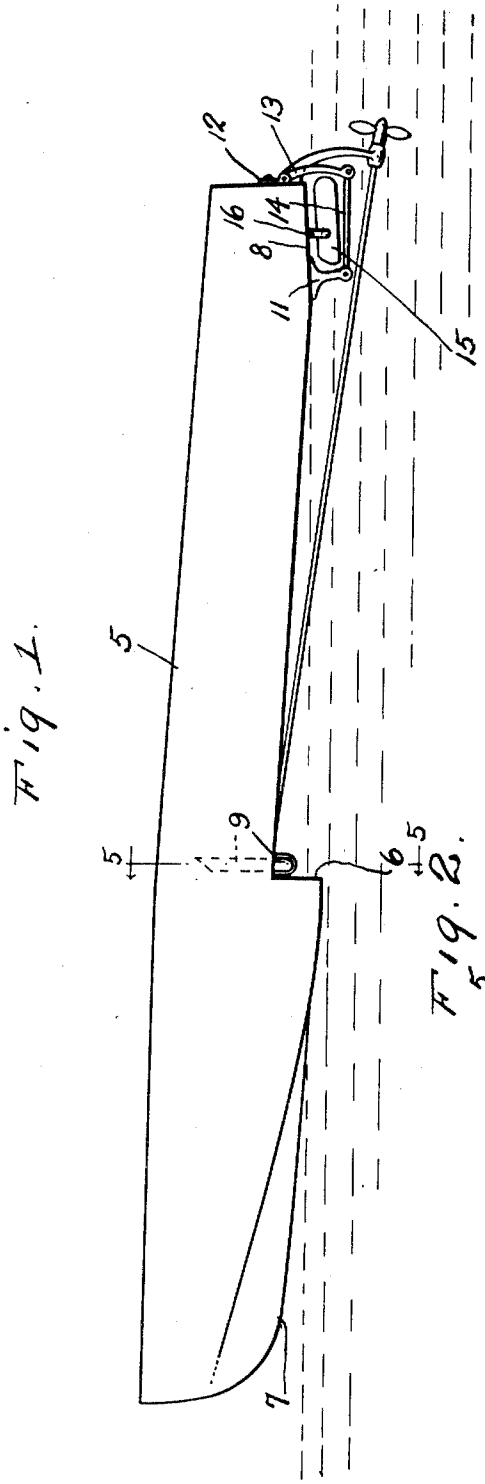

Fig. 1.

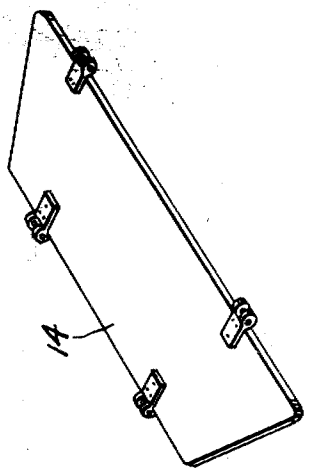

Fig. 3.

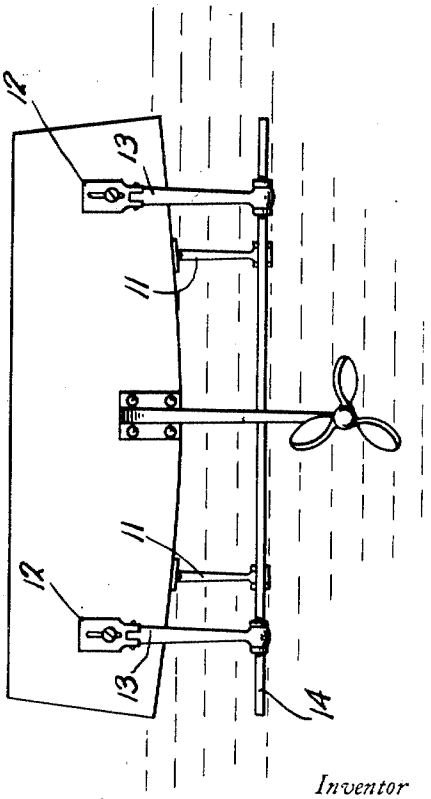

Fig. 2.

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BOAT CONSTRUCTION

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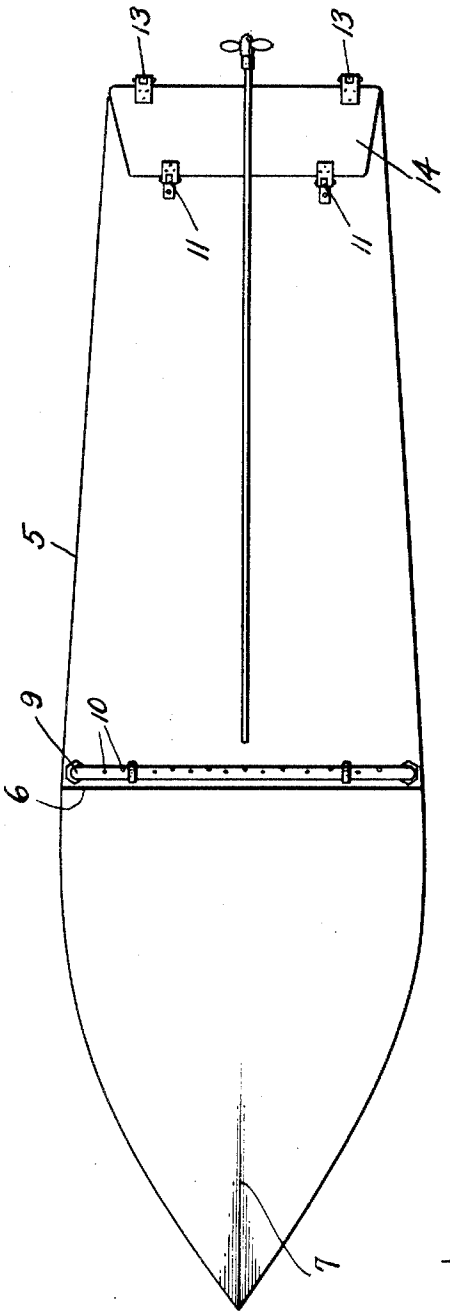

Fig. 4.

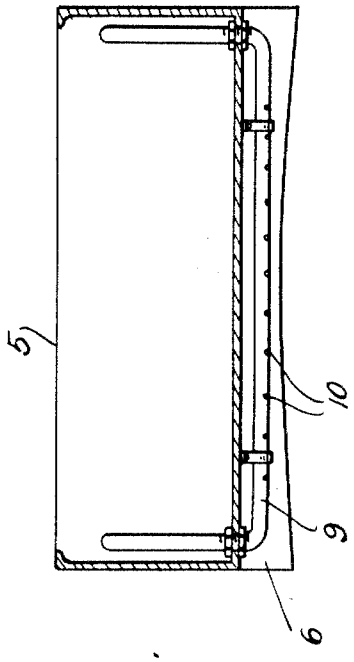

Fig. 5.

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BOAT CONSTRUCTION

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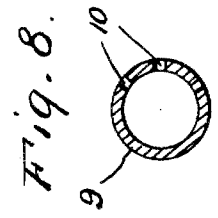

Fig. 8.

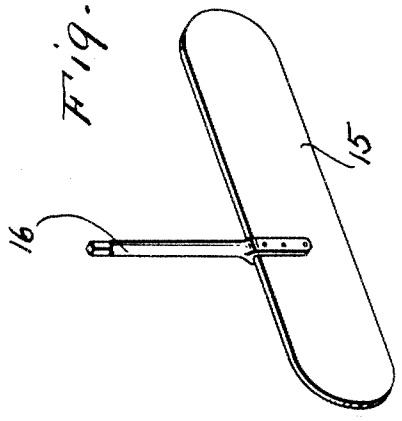

Fig. 9.

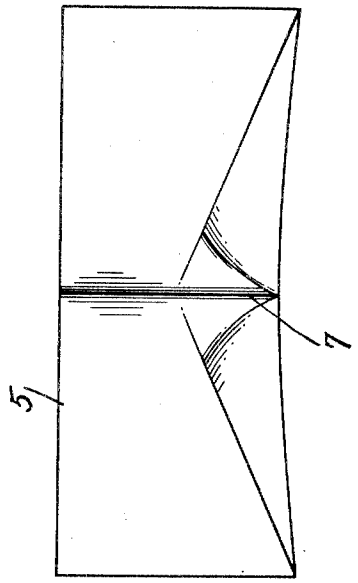

Fig. 6.

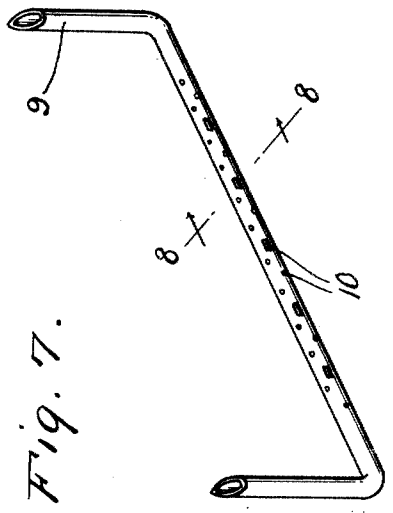

Fig. 7.

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Patented Aug. 6, 1929. 1,723,577

UNITED STATES PATENT OFFICE.

FRANK REBL, OF NEW YORK, N. Y.

BOAT CONSTRUCTION.

Application filed March 22, 1928. Serial No. 263,687.

This invention relates to new and useful improvements in the construction of sea sleds, speed boats, hydro-plane pontoons and the like and aims to provide a structure that will overcome the squatting of the rear end of the boat or pontoon within the water, which always results in a material reduction of the speed due to the fact that the boat is driven not only forwardly but also in a somewhat vertical direction.

In carrying out the present invention, there is provided a construction to maintain the forward end of the boat upon the surface of the water, and that tends to raise the rear end of the boat to the surface so that the boat will be in a relatively horizontal position, obviously resulting in an increase of speed.

An important object resides in the provision of a boat construction of this character that is simple in its nature and highly efficient in overcoming the squatting of the boat during its movement upon the water.

With the foregoing, and other objects in view as the nature of the invention will be better understood the same comprises the novel form, combination, and arrangement of parts may be resorted to without departing from the spirit of the invention and the scope of the appended claims.

In the drawings, wherein like reference characters indicate corresponding parts throughout the several views:

Figure 1 is a side elevation of a speed boat constructed in accordance with the present invention.

Figure 2 is a rear end elevation thereof.

Figure 3 is a perspective of a transversely arranged pin or plate adjustably supported beneath the rear end of the boat and positioned so as to cut through the water in such a manner as to tend to raise the rear end of the boat.

Figure 4 is a bottom plan view.

Figure 5 is a detail transverse section taken directly in back of a step formed in the bottom surface of the boat slightly amidships and in back of which is provided means for breaking a vacuum that will otherwise occur between the bottom of the boat and the surface of the water.

Figure 6 is a front end elevation.

Figure 7 is a perspective of the vacuum breaking unit.

Figure 8 is an enlarged transverse section thereof taken substantially upon the line 8—8 of Figure 7, and

Figure 9 is a perspective of a preferred character of steering rudder, used when the construction is incorporated in a sea sled, speed boat, or other power driven crafts.

In the drawings, the invention is shown as incorporated within a speed boat or the like, but it is of course to be understood that the major features of the invention may be incorporated in a hydroplane pontoon without affecting the spirit and scope of the invention. The boat is designated in its entirety by the reference character 5 and in the present instance, the bottom surface of the boat slightly forwardly of the center line thereof is dropped to provide a step 6. The under surface of the boat forwardly of this step is of concave formation as clearly disclosed in Figures 5 and 6.

A keel 7 extends longitudinally through this concave surface and terminates at the step 6 as disclosed in Figure 1. This concavity provides a pair of runners at opposite sides of the boat to prevent side slipping and to facilitate a hair pin turn.

The bottom surface of the boat terminating at the step 6 is beneath the surface of the boat 5 at the rear end thereof, the rear end of the boat being constructed with a horizontal surface 8 inclining toward the extreme end of the boat. This surface is of convex formation as disclosed in Figure 2. Intermediate this horizontal surface 8 and the step 6 the bottom surface of the boat inclines toward the upper edge of the step 6 providing a space between the bottom surface of the boat and the surface of the water, the length of which extends between the step 6 and said horizontal end surface 8 as disclosed in Figure 1.

In order to prevent a vacuum between the surface of the water and the inclined surface of the boat in back of the step 6 is arranged transversely upon the bottom surface of the boat directly in back of this step 6 a pipe 9 having air openings 10 therein, the ends of this pipe being bent upwardly and extended through the bottom of the

boat into the interior thereof as disclosed in Figure 5, these upturned ends being open so that air passing through the pipe opening 10 may escape under the bottom.

Depending from the bottom surface of the boat 5 at the forward end of the horizontal surface 8 at the rear end thereof is a pair of hangers 11—11, while vertically adjustably disposed upon the extreme rear end of the boat 5 is a pair of hanger plates 12—12 to the lower ends of which are pivotally connected depending hanger arms 13—13. Arranged between these hangers 11—11 and 13—13 is a transversely extending fin or plate 14 pivoted to the hangers at its front and rear edges. The rear hangers 13—13 may be raised or lowered so as to bring about the desired pitch of the fin or plate. At all times this fin or plate is inclined toward the forward end of the boat so that the cutting of the same through the water will cause an upward pressure upon the rear end of the boat cooperating with the stepped features 6, to prevent the squatting of the boat.

So far the features described constitute the essence of the present invention and these features may be incorporated into a sea sled, speed boat, hydroplane pontoon and the like to prevent the squatting of the same and a consequent reduction in the speed thereof. However, when the features of my invention are incorporated within a speed boat or other power driven craft there is provided a rudder 15 arranged upon the lower end of a steering shaft 16 journaled through the bottom of the boat and as disclosed in Figure 1 it is preferable that this rudder be arranged directly above the fin or plate 14.

In view of the foregoing description when considered in conjunction with the accompanying drawings it is believed that the construction and operation of an invention of this character will be readily appreciated by those skilled in the art, even though I have herein shown and described the invention as consisting of certain detail structural features it is nevertheless to be understood that some changes may be made therein without affecting the spirit and scope of the appended claims.

Having thus described the invention, what I claim as new is:—

1. In a boat structure of the character described, a concave bottom surface forwardly of the center of the boat, a substantially horizontal surface at the stern of the boat, an inclined surface between the forward concave surface and the horizontal surface providing an air space between the water and the bottom of the boat, and means beneath the horizontal surface for normally urging the stern of the boat into the surface of the water.

2. In a boat structure of the character described, a concave bottom surface forwardly of the center of the boat, a substantially horizontal surface at the stern of the boat, an inclined surface between the forward concave surface and the horizontal surface providing an air space between the water and the bottom of the boat, means beneath the horizontal surface for normally urging the stern of the boat into the surface of the water, said means consisting of a transversely arranged fin spaced from the bottom surface of the boat, and inclined throughout its transverse direction toward the forward end of the boat.

3. In a boat structure of the character described, a concave bottom surface forwardly of the center of the boat, a substantially horizontal surface at the stern of the boat, an inclined surface between the forward concave surface and the horizontal surface providing an air space between the water and the bottom of the boat, means beneath the horizontal surface for normally urging the stern of the boat into the surface of the water, said means consisting of a transversely arranged fin spaced from the bottom surface of the boat, and inclined throughout its transverse direction toward the forward end of the boat, and means whereby the inclination of the fin may be regulated.

In testimony whereof I affix my signature.

FRANK REBL.