F. W. WIELAND.

BOAT.

APPLICATION FILED NOV. 20, 1909.

998,437. Patented July 18, 1911.

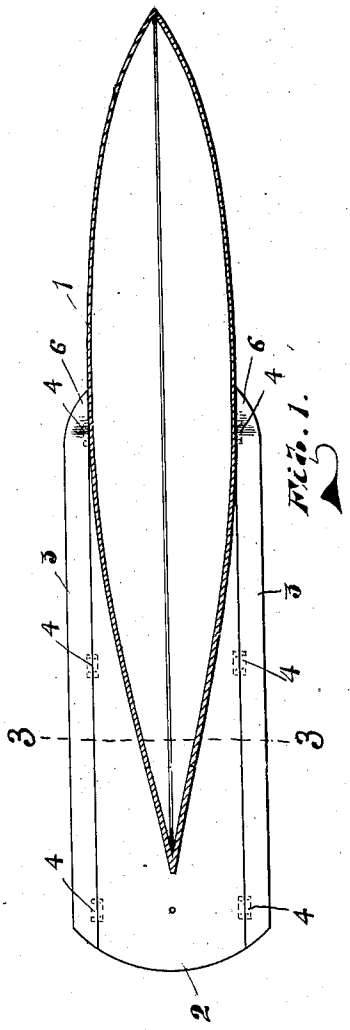

Fig. 1.

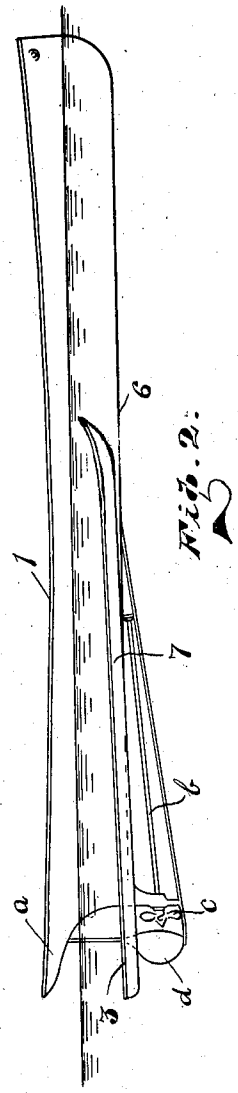

Fig. 2.

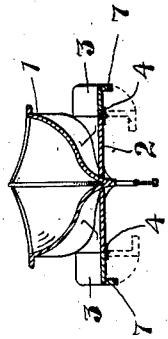

Fig. 3.

WITNESSES:

C. R. Wright, Jr.

L. L. Bucket.

INVENTOR.

F. W. Wieland,

BY

A. S. Pattison,

ATTORNEY.

UNITED STATES PATENT OFFICE.

FRED W. WIELAND, OF DULUTH, MINNESOTA.

BOAT.

998,437. Specification of Letters Patent. Patented July 18, 1911.

Application filed November 20, 1909. Serial No. 529,079.

To all whom it may concern:

Be it known that I, FRED W. WIELAND, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Boats, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in boats, and relates more particularly to motor and high speed motor boats.

It is well known that motor boats have a tendency to settle, especially at the stern when in motion, and that this tendency is increased as the speed of the boat increases, so that for speed boats it has been found necessary to give them special and peculiarly shaped sterns in order to prevent them from settling at their rear ends when moving rapidly through the water.

The present improvement pertains to means adapted to be applied to any form of boat and especially to those forms which do not have their sterns particularly constructed and adapted to prevent them from settling. This improvement consists in providing the hull with a projecting hydroplane which is preferably slightly inclined forwardly, so that the draft of the boat automatically decreases as its speed increases, thus lifting the boat to some extent out of the water and reducing its displacement.

I am aware that it is not new to provide a boat with a hydroplane, but my improvement consists of the particular arrangement thereof to be hereinafter fully described and illustrated.

Referring to the accompanying drawings—Figure 1 is a horizontal longitudinal sectional view through the hull of a boat, the present improvement being shown in top plan view. Fig. 2 is a side elevation of a boat with my improvement attached thereto. Fig. 3 is a vertical transverse sectional view on the line 3—3, of Fig. 1.

Referring now to the drawings, 1 is the hull of a boat and is here shown of a contour adapted for high speed, and has what is known in the art as an overhanging stern *a*. As is customary in speed boats the propeller shaft *b* extends downwardly and rearwardly as shown, at the rear end of which is a propeller *c* and located in rear of the propeller is the rudder *d*.

The present improvement consists in providing a hydroplane which extends from about midships rearwardly to a point about in a vertical line with the rear end of the stern *a*. This hydroplane consists of a main or body portion 2, which is rigidly secured to the hull of the boat and extends slightly upwardly and forwardly, thus producing a forwardly inclined hydroplane. This plane is located above the propeller or rudder so that it is an imperforate or closed plane. This main portion 2 is of a width about equal to the greatest width of the hull of the boat and hinged to opposite sides of this rigid inclined plane 2 by hinges 4 are the wings 3, the forward ends of the wings 3 projecting forward beyond the front end of the rigid body or main plane 2, and these forward ends are hinged to the sides of the boat hull. The forward ends of the wings 3, are slightly turned upward, as shown at 6. These wings will normally drop down, as shown in dotted lines Fig. 3, when the boat is quiet, and as the boat moves through the water, these wings are raised to the horizontal positions shown in solid lines Fig. 3, by reason of their forwardly inclined ends and also by reason of the fact that the wings are set at an inclined plane corresponding to the inclination of the main or body portion 2. For the purpose of steadying the action of the water on the planes and to cause them to take firmer hold on the water, they are provided with any suitable number of depending flanges. As here shown, these depending flanges are at the outer edges of the wings 3, as shown at 7, but I wish it understood that any desired number of depending longitudinally extending flanges may be provided and some of them may be located on the main or body portion 2 of the plane.

By having the outer edges of the plane adapted to automatically drop when the boat is either quiet or moving slowly, they will fall out of the way when approaching a dock to prevent injury to the plane and will also reduce the space occupied by the boat when it is not moving, which, in many instances, will be found convenient.

By having the hydroplane above the propeller and rudder, it will insure that the

propeller and rudder will be under water and, as previously stated, permits an imperforate or unbroken surface for the plane.

This invention is adapted to be applied to any form of boat and more particularly to the overhanging stern type herein shown, which are more in need of such a device than the hulls which have their sterns especially constructed to prevent them from depressing. By the use of this invention the stern of the hull of the boat can be made of the best form to prevent the suction and pulling action, while at the same time the hydroplane will prevent the settling of the stern; will lift the boat in proportion to its speed and thus reduce its displacement and therefore the friction of the hull upon the water.

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

1. The combination with the hull of a boat, of a hydroplane carried by the after portion of the boat, and wings hinged to the hydroplane.

2. The combination with the hull of a boat, of a hydroplane carried by the after portion of the boat, and wings hinged to the sides of the hydroplane.

3. The combination with the hull of a boat, of a hydroplane carried by the after portion of the boat, and wings hinged to the sides of the hydroplane and having a limited upward movement.

4. The combination with the hull of a boat, having a tapered overhanging stern, of a hydroplane secured to the after portion of the hull of the boat and extending rearwardly under and ending in about a vertical line with the rear end of the overhanging stern and wings hinged to the outer edge of the hydroplane.

5. The combination with a boat hull, of a hydroplane having a main or body portion rigidly secured to the after portion thereof, and side wings hinged to opposite edges of the main or body portion and having a vertical movement limited to the hydroplane of the main or body portion.

6. The combination with the hull of a boat, of a hydroplane secured to the side of the boat, wings hinged to the sides of the hydroplane and having laterally turned outer edges.

7. The combination with the hull of a boat, of a hydroplane secured to the side of the boat, wings hinged to the edges of the hydroplane, and their upward limit of movement being in a horizontal plane with the hydroplane.

8. The combination with the hull of a boat, of a hydroplane secured to the side of the boat, wings hinged to the edges of the hydroplane held in a vertical position by gravity and having their upward limit of movement parallel with the hydroplane, and the outer edges of the wings having downwardly turned lateral edges.

9. The combination with the hull of the boat, having a tapered overhanging stern, of a hydroplane rigidly secured to the sides of the boat about midship and extending rearwardly and downwardly to the after portion of the boat to a point just above the keel and extending around the stern and ending in a vertical line with the rear end of the overhanging stern.

10. The combination with the hull of a boat having a tapering overhanging stern, of a hydroplane secured to the sides of the boat and extending rearwardly and downwardly around the stern of the boat just above the keel, and side wings hinged to the edges of the hydroplane and having a limited movement.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

FRED W. WIELAND.

Witnesses:

NORMAN E. LA MOND,

S. GEO. STEVENS.