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H. G. AYLSWORTH

2,555,307

FISHTAILED HULL

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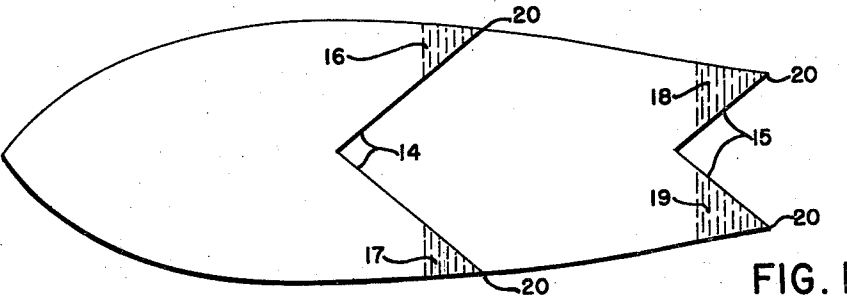


FIG. 1

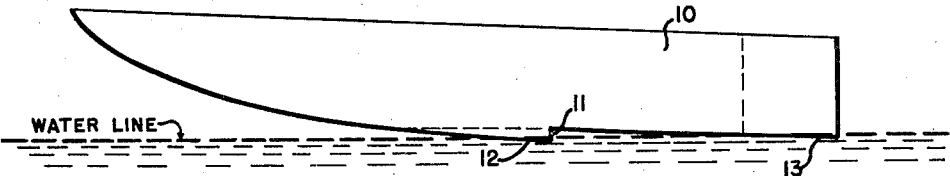


FIG. 2

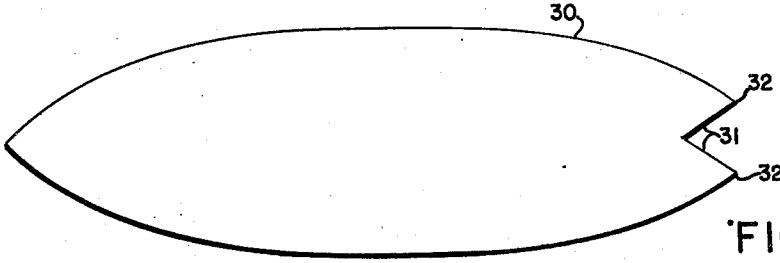


FIG. 3

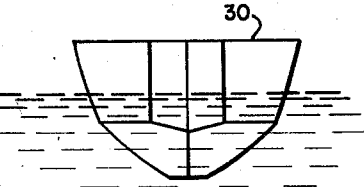


FIG. 5

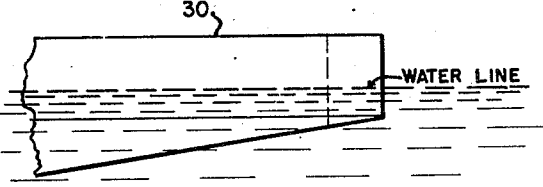


FIG. 4

INVENTOR
HERBERT G. AYLSWORTH

BY *McHayer*
ATTORNEY

UNITED STATES PATENT OFFICE

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FISHTAILED HULL

Herbert G. Aylsworth, Charlestown, Mass.

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2 Claims. (Cl. 114—66.5)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

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This invention relates to ship hulls and more particularly to such hulls incorporating means for reducing the displacement drag existing when such hulls are moved through the water.

It is well known that the displacement drag retards the motion of a ship through the water due to the necessity of pulling a heavy wake. This requires substantially more power than would otherwise be necessary. To increase the speed of a ship it is necessary to take this displacement drag into account in designing the hull. Numerous hull constructions have already been proposed to overcome in part this displacement drag.

It is an object of this invention to provide a hull which reduces the displacement drag to a minimum.

It is a further object of this invention to provide a hull which releases the displacement drag from the sides of the hull.

These and other objects will be more apparent when considered together with the following detailed description of the invention together with the accompanying drawing in which:

Fig. 1 is a bottom plan view of a hull embodying the invention;

Fig. 2 is an elevational view of Fig. 1;

Fig. 3 is a top plan view of an alternative hull embodying the invention;

Fig. 4 is a fragmentary elevation of Fig. 3; and

Fig. 5 is an end view of Fig. 4.

Referring now to Figs. 1 and 2, there is disclosed a planing hull 10, the hull being shown in the planing position with respect to the water line in Fig. 2. The bottom of hull 10 is stepped at 11 to provide two planing surfaces 12 and 13 as shown. The aftward facing portions of the planing surfaces are formed to provide substantially V-shaped recesses 14 and 15 with the apex of each V positioned on the center line of the hull and pointing forward, and the sides of the V extending outward and aftward from the apex to the sides of hull 10. These aftward facing portions are thus shaped as a fish tail. It will be apparent that hull 10 will be supported in the planing position at four distinct areas 16, 17, 18, and 19 as represented by the shaded lines in Fig. 1. These areas are the wetted surface of the hull when planing, and depend in size on the speed of the hull.

Referring now to Figs. 3, 4, and 5, a displacement hull 30 is there disclosed. The stern of hull 30 is formed as a substantially V-shaped recess 31 similar to that described above. The apex of the V is positioned at the center line of the hull,

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and the faces extend outward and aftward from the apex to the sides of the hull 30.

In both embodiments the water which would ordinarily drag behind the faces of the V-shaped recesses now tends to flow outwardly from the center along the faces of the V-shaped recesses to the respective sides of the hull. It will be noted that the recesses form edges with the sides of the hull. These edges (20 in Fig. 1, and 32 in Fig. 3) enable this outwardly flowing water to leave the hull in a smooth vacuumless flow. Thus the displacement drag and the turbulence ordinarily existing has been substantially reduced with a resulting increased speed for a given amount of power.

The shape of the V-shaped recesses will be dependent on the type of hull to which it is applied. For a slow moving boat with a wide stern the recess would only have a slight depth. With a speed boat the recess would have a much greater depth.

This invention is applicable not only to ships but also to seaplane hulls and pontoons, and is only to be limited by the appended claims.

The invention described herein may be manufactured and used by or for the Government of the United States of America for government purposes without the payment of any royalty thereon or therefor.

What is claimed is:

1. A planing hull wherein the bottom of said hull is stepped to provide first and second planing surfaces at different levels each of which extend to the sides of said hull, the aftward portion of said first planing surface being formed at the step to provide a V-shaped recess having its apex pointing forward and positioned on the center line of said hull and its faces extending outward and aftward from the apex to the sides of said hull, said faces forming an acute angle with the sides of the hull at their respective intersections therewith, said second planing surface being formed at the aft end thereof to provide a V-shaped recess having its apex pointing forward and positioned at the center line of said hull and its faces extending outward and aftward from the apex to the sides of said hull, said faces forming an acute angle with the sides of the hull at their respective intersections therewith and extending vertically upward from the bottom of said hull completely through the hull.

2. A planing hull wherein the bottom of said hull is stepped to provide forward and aft planing surfaces at different levels each of which ex-

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tend to the sides of said hull, the aftward portion of said forward planing surface being formed at the step to provide a V-shaped recess having its apex pointing forward and positioned on the center line of said hull and its faces extending outward and aftward from the apex to the sides of said hull, said faces forming an acute angle with the sides of the hull at their respective intersections therewith, said aft planing surface being formed at the aft end thereof to provide a V-shaped recess having its apex pointing forward and positioned at the center line of said hull and its faces extending outward and aftward from the apex to the sides of said hull, said faces forming an acute angle with the sides of the hull at their respective intersections therewith and extending completely through the hull, said forward and aft planing surfaces being wetted only at the

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aft tips thereof defined by said recesses when said hull is in its planing position.

HERBERT G. AYLSWORTH.

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