June 28, 1949. R. L. HARVEY 2,474,667

SPEEDBOAT HULL

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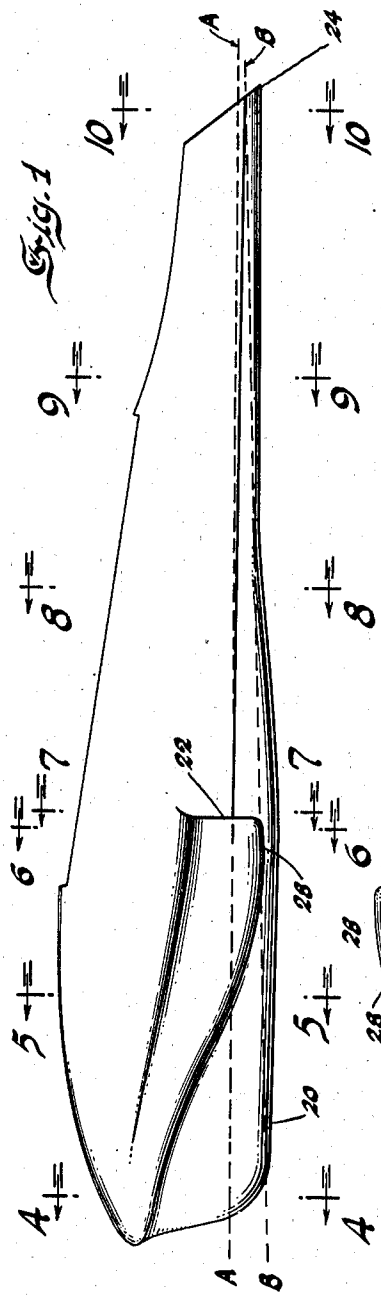


Fig. 1

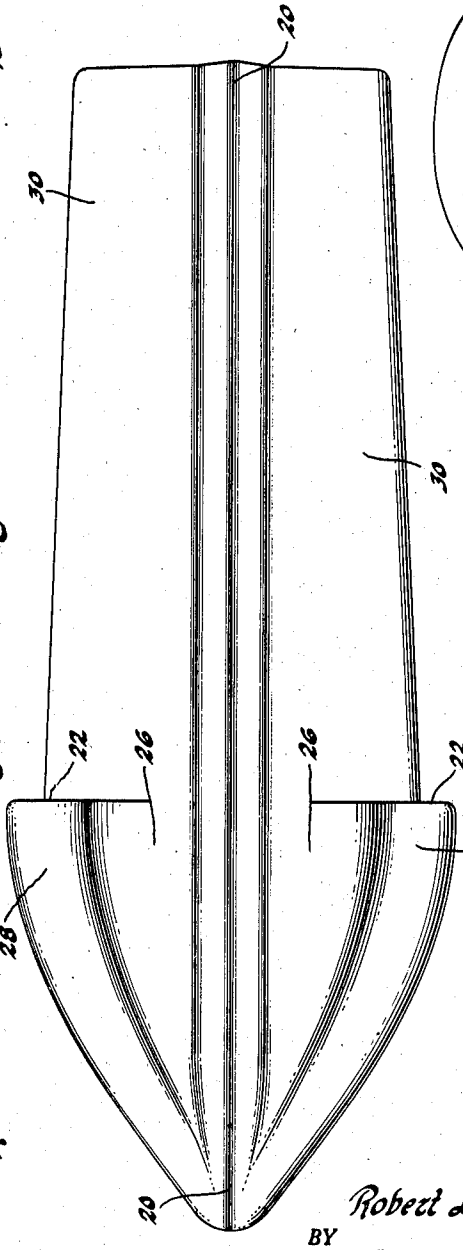


Fig. 2

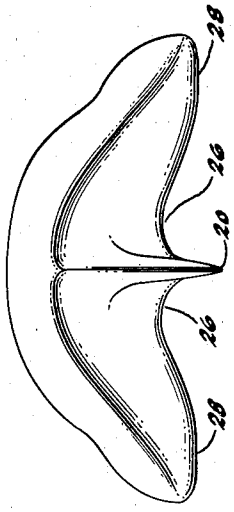


Fig. 3

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SPEEDBOAT HULL

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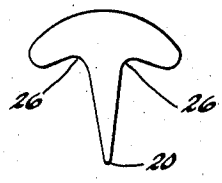


Fig. 4

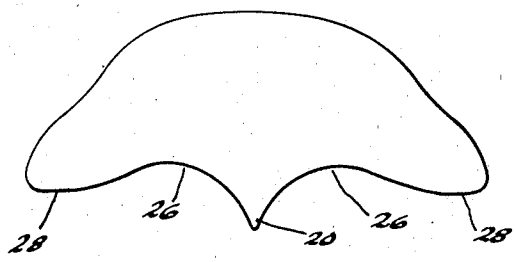


Fig. 5

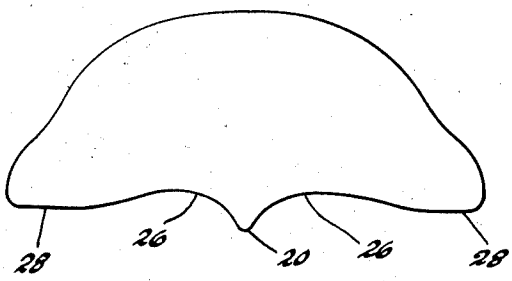


Fig. 6

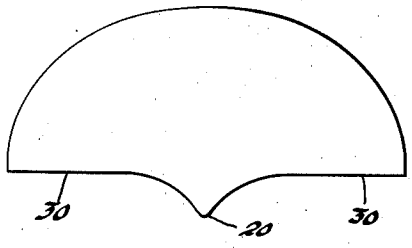
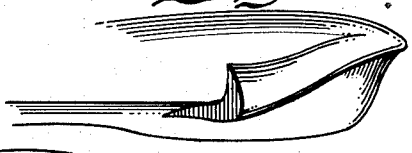


Fig. 7

Fig. 11



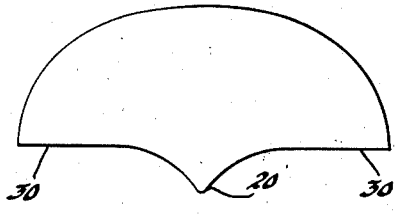


Fig. 8

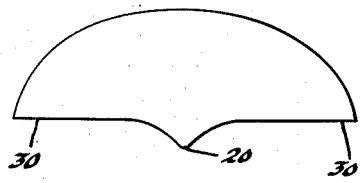


Fig. 9

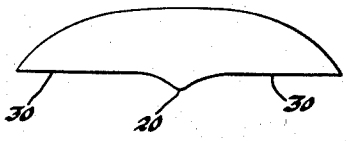


Fig. 10

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SPEEDBOAT HULL

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4 Claims. (Cl. 114—66.5)

1

This invention relates to improvements in the design of speed boat hulls.

An object is to provide an improved design of speed boat hull which will enable the hull to be driven over the water at a majimum rate of speed with a minimum amount of power.

Another object is to provide a speed boat hull so designed that the hull will travel at a high rate of speed over the water without jumping or bouncing and will maintain a substantially even straight line of travel.

Another obect is to provide a speed boat hull of the character heretofore described, so constructed that the hull will follow a determined course without deviation therefrom. The boat will rapidly and gradually attain a maximum rate of speed rising gradually in the water as it does so and will then travel on an even keel over and through the water.

The hull is so constructed that it does not push up a mass of water ahead of the bow but so divides the bow wave as to cause it to flow with a minimum of resistance outwardly and support the hull to maintain an even line of forward travel.

Other objects, advantages and meritorious features will more fully appear from the following description, appended claims and accompanying drawings, wherein:

Figure 1 is a side elevation of a boat hull embodying my invention.

Figure 2 is a plan of the bottom of the hull.

Figure 3 is a front elevation looking toward the bow.

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a vertical sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a vertical sectional view taken on the line 6—6 of Figure 1.

Figure 7 is a vertical sectional view taken on the line 7—7 of Figure 1.

Figure 8 is a vertical sectional view taken on the line 8—8 of Figure 1.

Figure 9 is a vertical sectional view taken on the line 9—9 of Figure 1.

Figure 10 is a vertical sectional view taken on the line 10—10 of Figure 1.

Figure 11 is a fragmentary perspective, partially in section illustrating the manner in which the step fades out as it approaches the keel.

The improved speed boat hull design of my invention is intended to enable the hull to attain a high-speed with the same amount of power that other conventional hulls having the same general hull dimensions. My improved design will also enable a hull to travel at a high speed at an even keel without jumping as it travels over the water. As embodied in a hull design of a model speed boat size this improved hull attained a speed several miles an hour faster than other conventional speed boat hulls of the same dimensions and utilizing the same size of motor and wheel.

2

Throughout the drawings the hull illustrated is shown as provided with a keel fin 20 which extends from the bow to the stern and which has a depth from a point adjacent to the vertical line of the forward point of the bow to the step as shown in Figure 1 greater than at any other point rearwardly of the step. The keel fin 20 extends from its forward point to the step in a substantially horizontal plane. From the step where it is substantially on a line with the step 22, it gradually slopes upwardly toward the stern and to a point intermediate the step and the stern 24 from which point it extends aft to the stern substantially on a straight line.

The hull is provided at the bow with a pair of complementary concavities 26 disposed on opposite sides of the keel fin and extending downwardly aft toward the step 20. These concavities extend outwardly laterally on each side away from the keel fin and terminate in stabilizer surfaces 28 which surfaces terminate immediately adjacent to the step in substantially flat horizontal plane surfaces as shown in Figures 1, 2 and 6. These stabilizer surfaces are spaced from the keel by the width of the concavities 26. The concavities merge gradually into the keel and the curve also is gradual outwardly and downwardly until it merges into the stabilizer surface portions.

The bottom of the hull aft of the step 22 consists of a pair of complementary substantially flat horizontal bottom surfaces 30 as shown in the figures of the drawing. These surfaces also merge gradually into the keel fin 20 and taper in width as they extend aft from the step toward the stern. The bottom surface on opposite sides of the keel and adjacent thereto and which constitutes the slope of the keel as it merges into the bottom of the hull is substantially flush as it passes over the step so that the concavities extend flush over the step at a point immediately adjacent to the keel fin as shown. The bottom surfaces of the hull upon opposite sides of the keel between the stabilizer surfaces 28 extend downwardly and outwardly toward such stabilizer surfaces as shown in Figure 6 forming the step. In other words, there is no step immediately adjacent to the keel because the bottoms of the concavities adjacent to the keel extend flush with the surfaces 30 but the step begins and increases gradually in depth as shown by the downward curvature of the lines 26 in Figure 6 and reaches its maximum drop in the surfaces 28.

The width of the hull at the step is greater as it appears in Figure 2 than the width of the hull aft of the step. The stabilizer plane surfaces are shown in Figure 2 as projecting out-

wardly laterally beyond the width of the hull aft of the step. The sides and upper surface of the boat are also shown as being streamlined.

In the operation of the boat as the hull gradually attains its maximum speed it rises in the water. When the hull is idle it will occupy the position in the water indicated by the dotted line A—A. When it attains maximum speed it will occupy the position in the water indicated by the dotted line B—B. As maximum speed is attained the keel divides the water at the bow and relative to the hull the water passes outwardly and rearwardly through the concavities 26 and the hull travels evenly over this water spray on a substantially even keel rather than bouncing or jumping from one wave to the next. Notwithstanding the rise of the boat as it attains speed relative to the water the keel fin is submerged substantially throughout the length of the boat so that the hull follows a determined course without danger of variation therefrom.

What I claim is:

1. A boat hull having a keel fin extending longitudinally substantially from the bow to the stern and having a step disposed nearer to the bow than to the stern, said bow having complementary concavities on opposite sides of the keel and extending aft from substantially the bow to the step and increasing in width from the bow to the step and terminating laterally in chines dropped vertically below the bottoms of the concavities intermediate the keel and the chines, and terminating laterally adjacent to the step in complementary substantially horizontal stabilizer planes spaced on opposite sides from the keel fin by the width of the concavities and dropped below the bottoms of the concavities intermediate the keel and said planes, the bottom of the hull abaft the step and on opposite sides of the keel fin consisting of two complementary substantially horizontal plane surfaces said complementary plane surfaces merging substantially flush with the bottoms of the concavities adjacent to the keel on a line with the step, said keel fin having a depth forwardly of the step greater than its depth aft of the step.

2. A boat hull having a step disposed in closer relationship to the bow than to the stern and having a keel fin extending longitudinally substantially from the bow to the stern, said hull having complementary concavities on opposite sides of the keel fin and extending aft from substantially the bow to a point substantially in line with the step and terminating laterally at the chines along lines spaced below the bottoms of the concavities intermediate the chines and the keel, said concavities terminating laterally adjacent to the step in complementary substantially horizontal stabilizer planes spaced on opposite sides from the keel fin by the width of the concavities and spaced vertically below the bottoms of the concavities and above the bottom of the keel, the bottom of the hull abaft the step and on opposite sides of the keel fin consisting of two complementary substantially horizontal plane surfaces, said keel fin having a depth forwardly of the step greater than its depth aft of the step and sloping upwardly as it extends aft from the step to a point spaced intermediate the step and the stern from which point it extends aft to the stern in a substantially horizontal plane.

3. A boat hull having a keel fin extending longitudinally substantially from the bow to the stern and having a step disposed nearer to the bow than to the stern, said hull shaped providing complementary concavities on opposite sides of the keel fin extending from the bow gradually downwardly aft therefrom and terminating aft substantially at the step, said concavities terminating laterally from adjacent to the bow to adjacent to the step in complementary chines dropped below the bottoms of the concavities intermediate the keel and the chines and terminating at the step and immediately forwardly thereof in substantially horizontal stabilizer plane surfaces spaced on opposite sides from the keel fin by the width of the concavities and providing a hull having a breadth at the step stepped laterally beyond the breadth of the hull aft of the step, the bottom of the hull aft of the step and on opposite sides of the keel fin consisting of two complementary substantially horizontal plane surfaces merging gradually into the keel and merging flush with the bottoms of the concavities on opposite sides of and adjacent to the keel, said keel fin having a depth from a point substantially adjacent to the forward point of the bow and aft to the step greater than the downward projection of the two stabilizer planes and greater than the depth of the keel aft from the step.

4. A boat having a hull provided with a step disposed nearer to the bow than to the stern and provided with a keel extending from the bow to the stern, said keel having a depth from a point adjacent to the stern and extending to the step greater than the depth of the keel aft of the step, the bottom of the hull aft of the step consisting of two complementary substantially horizontal plane surfaces disposed on opposite sides of the keel, the bottom of the hull forward of the step provided with two complementary concavities disposed on opposite sides of the keel and extending substantially from the stem to the step and terminating laterally in chines extending substantially from the stem to the step, said chines dropped to a point below the bottoms of the concavities intermediate the chines and the keel and above the bottom of the keel, said concavities terminating laterally adjacent to the step in complementary horizontal flat stabilizer plane surfaces spaced above the bottom of the keel and below the bottoms of the concavities, said hull having a breadth immediately forwardly of the step and at the step and over said stabilizer plane surfaces stepped outwardly laterally beyond the breadth of the hull aft of the step.

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