Aug. 5, 1941. A. W. W. VAN HOORN 2,251,621

HULL FOR BOATS

Filed Jan. 3, 1939

Fig. 1.

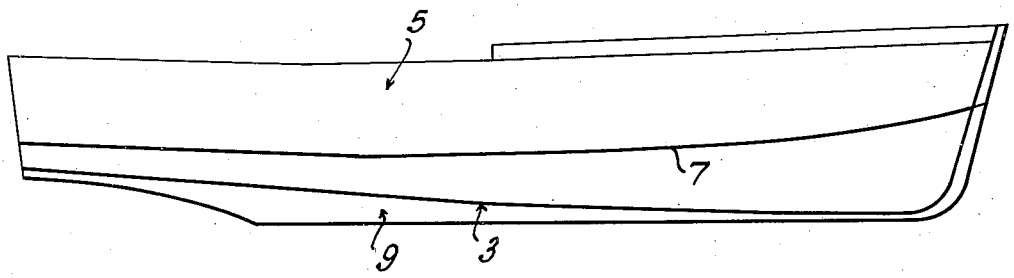
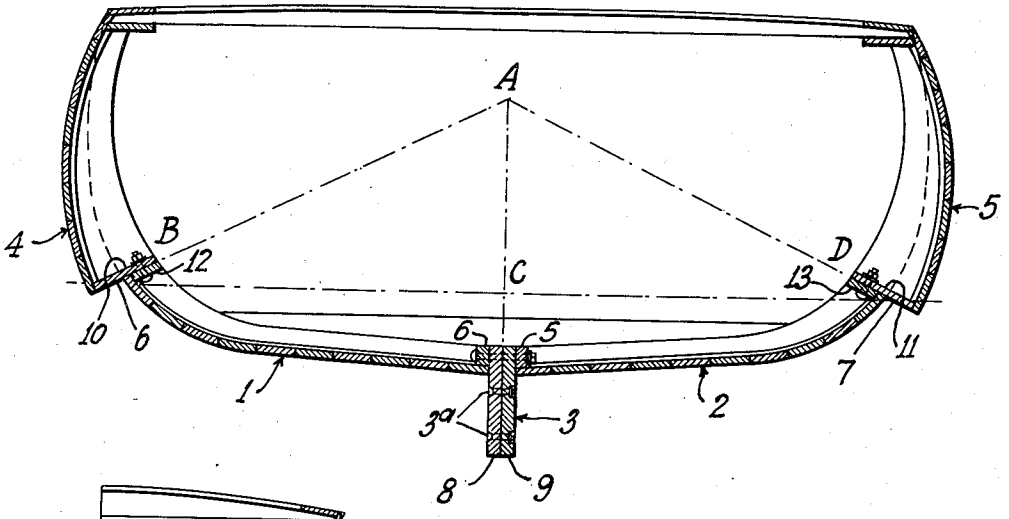


Fig. 2.



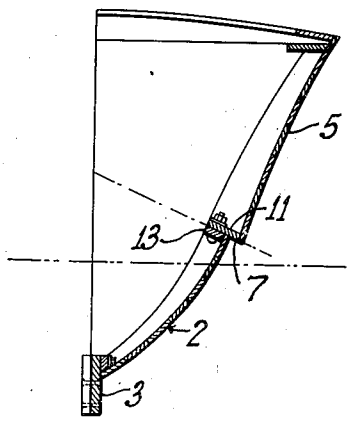


Fig. 3.

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HULL FOR BOATS

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3 Claims. (Cl. 9—2)

The present invention relates to a boat construction and hull shape, more particularly to that type known as express cruisers and speed boats.

It is essential that boats of that character may be turned at high speed without capsizing or shipping water, and with a minimum of slippage. It is therefore an object of the invention to provide a boat construction which will reduce such hazards to a minimum.

Another object of the invention is the provision of a boat construction which will permit the retention of certain desirable features, such as a round bottom, that make for good designing from the standpoint of forward motion of a speed boat, but which must be compromised or eliminated in order to secure reasonable safety in turning at high speeds.

Another object is the provision of a boat construction novel in form, reliable and efficient in functioning, and simple and inexpensive to manufacture.

With these and other objects in view, the invention consists in certain novel features of construction and arrangement of parts as will be hereafter more fully described, and illustrated in the accompanying drawing, which discloses the preferred embodiment of the invention.

Referring to the accompanying drawing:

Figure 1 is a side elevation of a hull embodying the invention.

Figure 2 is a center line cross section of the complete hull.

Figure 3 is a half cross section of the complete hull in the fore part thereof.

In high speed power boats, the tendency of a rounded hull is to squat in the water as one reaches speed, the bow going up and the stern going down in the water. To overcome this there has been a tendency to flatten out the V shape of the rear of the body so that at the stern the boat approaches being completely flat giving an aqua-planing effect. This is very helpful in going ahead but it makes the boat dangerous in making a turn because the stern end of the boat will not swish around but instead its relatively flat edges hit the side of the water and tend to overturn the boat.

In accordance with the invention, to overcome this difficulty, the hull is provided with a plurality of surfaces arranged longitudinally and offset outwardly with respect to the bottom or bilge section having the usual keel. These surfaces extend preferably from stem to stern and substantially parallel with the keel. Contiguous with these offset surfaces are surfaces or sections forming the sides of the boat.

Within the broad scope of this invention the hull may be constructed as a single section having the contours specified herein but the invention lends itself particularly to construction in accordance with my co-pending application Serial #238,326, filed November 2, 1938, for Process of constructing boats, and on this account I shall more particularly describe the invention in that form.

Referring to the drawing the hull surface is formed of two bottom or central portions 1 and 2 meeting 1 at the keel line 3 and two side portions 4 and 5 which are offset or staggered outwardly from the central portions to provide longitudinal surfaces 6 and 7 substantially transverse to the body of the hull and longitudinal of the boat.

When the hull is constructed in accordance with the invention of my previous application above referred to, these separate surfaces are made as separate sections of the hull 1, 2, 4 and 5. These sections are each constructed with a longitudinal member running the length of the section on each of its longitudinal edges, and with rib sections extending transversely between the longitudinal members. These members and rib sections form a frame to which the skin is attached. The various sections are fastened together to form the complete hull by bolting together the adjacent longitudinal members together. All of this is fully described in my co-pending application Serial Number 238,326.

Toward the stern, as will be seen from Figure 2, the sections 1, 2, 4 and 5 are all convex in cross section to permit of easy turning, but toward the bow as seen in Figure 3, the sections 4 and 5 will preferably be concave, in accordance with good hull construction.

Thus the keel 3 itself may be formed by fastening together the central longitudinal members 8 and 9 of the two bottom sections by bolts 3*a*, and the central sections may be fastened to the side sections by bolting together the longitudinal members 10 and 11 of the sections 4—5 to the adjacent longitudinal members 12 and 13 of the central sections 1 and 2.

The amount of the overhang provided by these surfaces 10—11 will vary with the design of the hull and it will vary from bow to stern of the boat. In some respects these surfaces 10—11, at the bow of the boat, play a different part from the same surfaces at the rear.

During motion of the boat when the bow

is lifted out of the water, the surfaces 10 and 11 hold the spray and bow wave down, while that portion of the surfaces 10 and 11 which is under the water provides a pocket between them and the central section of the hull holding the main slip stream of the water beneath the boat. At the same time this construction offering a minimum resistance to the sideward movement of the boat during turning, thus permitting turning at high speed without danger of capsizing.

It will thus be seen that if the hull is forced sideways through the water to the left, as seen in Figure 2, the sections 1 and 4 afford reduced resistance because of their curved contours, while the surface 11 is itself in the lee of the body of the hull and thus has its own resistance reduced.

Thus by this construction I gain the advantages of a high speed hull with the ease of steering and turning more comparable to the rounded hull while at the same time the construction gives a high speed hull and holds down the spray and bow wave, thus increasing the dirigibility, efficiency, safety and comfort of the hull.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

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

1. A hull of the type having progressively curved sections throughout, comprising a plurality of sections on each side of the vertical central plane, each section comprising a complete independent unit extending in a direction from stem to stern and adjacent edges of said sections terminating in a common plane substantially parallel to the center line of the hull, the upper of said sections being offset outwardly to provide a longitudinally extending downwardly and inwardly facing surface to stabilize the hull.

2. A hull of the type having progressively curved sections throughout, comprising a plurality of sections on each side of the vertical central plane, each section comprising a complete independent unit extending in a direction from stem to stern, the lower of said sections having a longitudinal stringer along its upper edge and the upper of said sections having a longitudinal stringer on its lower edge adapted to engage said first mentioned stringer throughout its length along a plane substantially parallel to the center line, said upper section being offset outwardly from said lower section and said last mentioned stringer being of materially greater width measured transverse to the surface of the hull, whereby when said stringers are attached together to form the hull, there is provided a longitudinally extending and downwardly and inwardly facing surface to stabilize the hull.

3. A hull of the type having progressively curved sections throughout, said skeleton comprising a plurality of sections on each side of the vertical center plane of the hull extending in the direction from stem to stern, each comprising a self-supporting frame, each of said sections having a longitudinal stringer curved to correspond to the curvature of the hull, on each edge thereof, and a plurality of rib sections also curved to correspond to the curvature of the hull extending between and firmly attached to said stringers to form with said stringers a self-supporting hull section, the adjacent stringer of the hull sections on each side of the said center plane lying in a common plane parallel to the center line of the hull and being firmly attached together to form said hull, the upper of said adjacent stringers being of greater width transverse to the surface of the hull, whereby when said sections are joined said upper section will extend beyond the lower to provide a longitudinally extending downwardly and inwardly facing surface to stabilize the hull.

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