

[54] **CATAMARAN**  
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 114/61  
 [51] **Int. Cl.**..... **B63b 1/12**  
 [58] **Field of Search**..... 9/6, 310 B, 310 E;  
 114/0.5 F, 39, 61, 66.5 F

[57] **ABSTRACT**

A catamaran is made with two hollow plastic hulls. Each hull consists of two vacuum formed plastic sheets heat sealed together at a vertical peripheral flange. The flange is enlarged on the lower side of the hull to define a keel. A load supporting framework is mounted on the hulls.

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**5 Claims, 8 Drawing Figures**

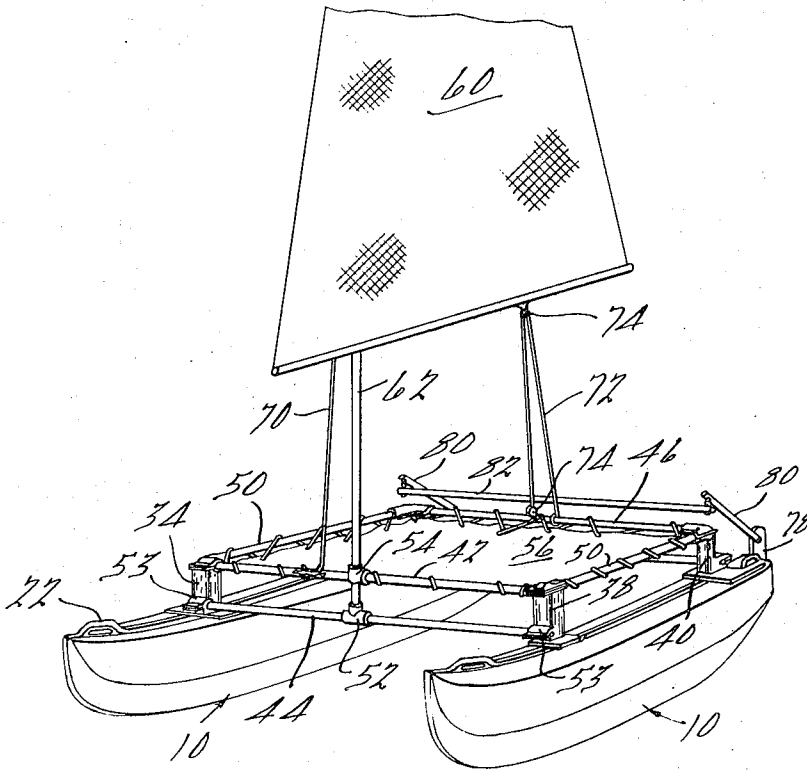


FIG. 1.

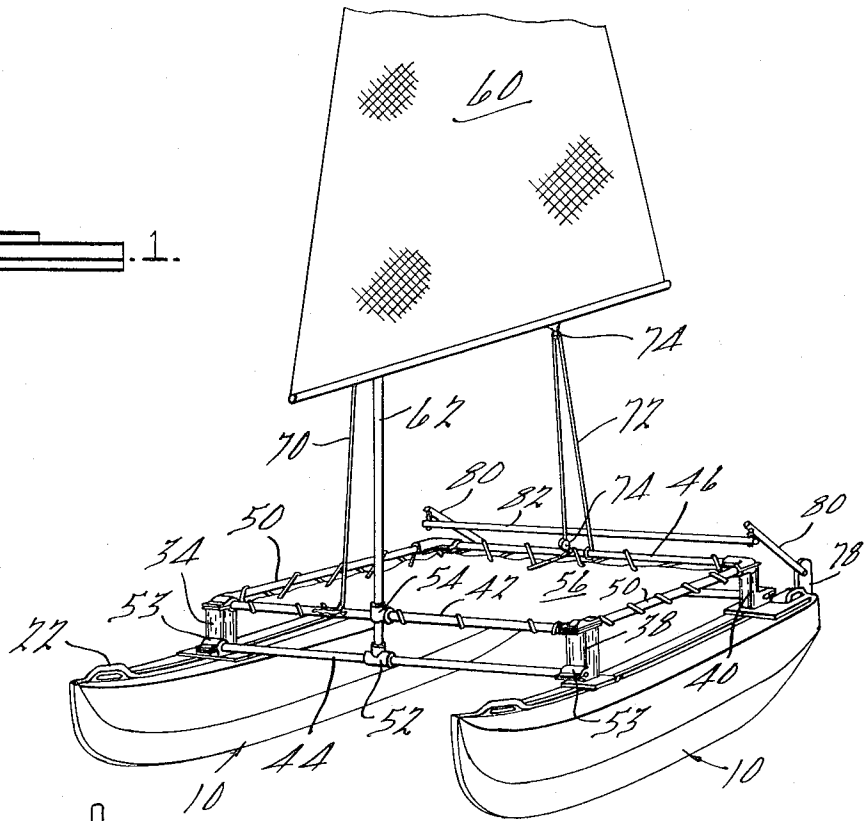
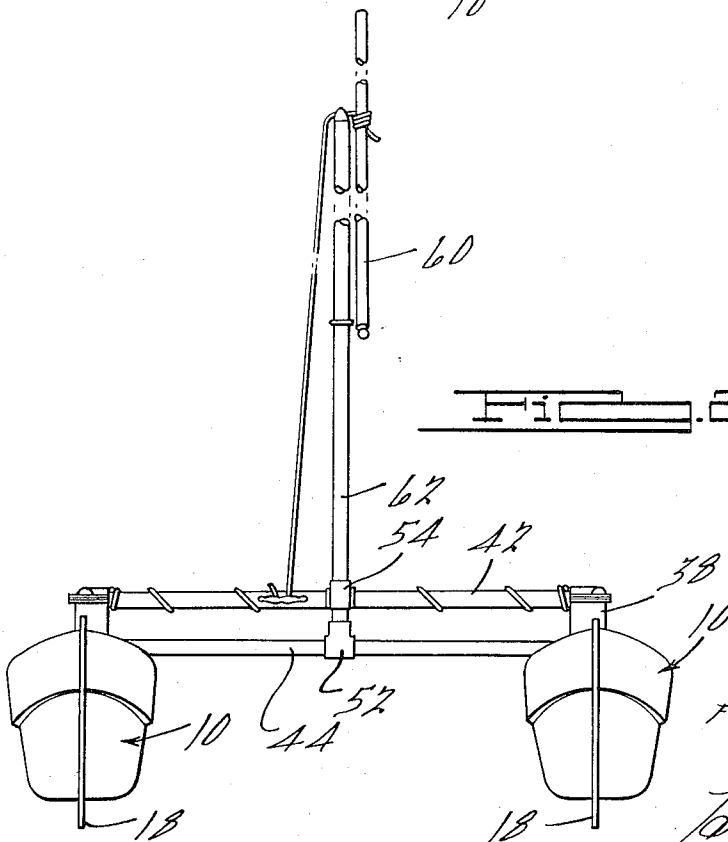


FIG. 2.



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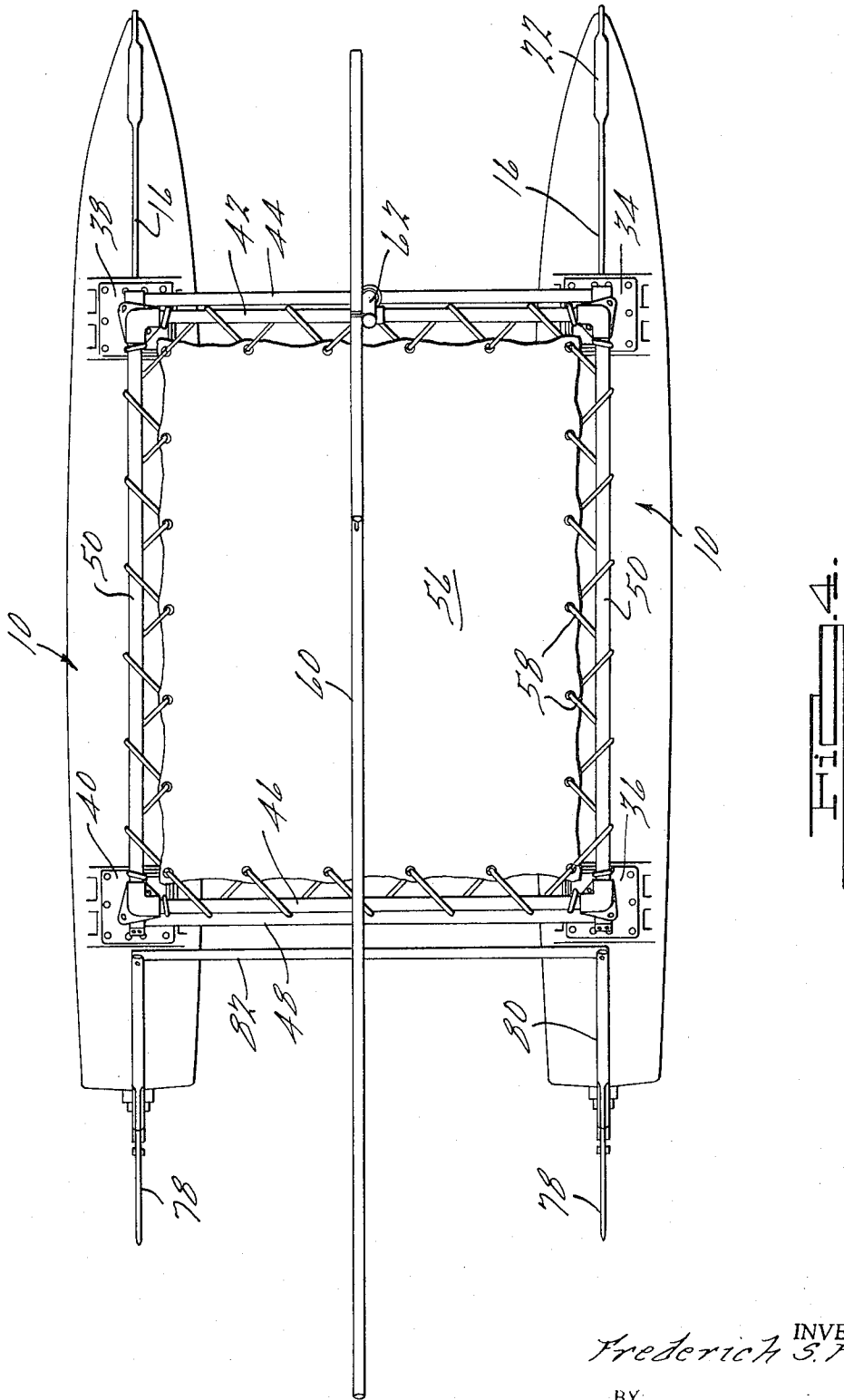
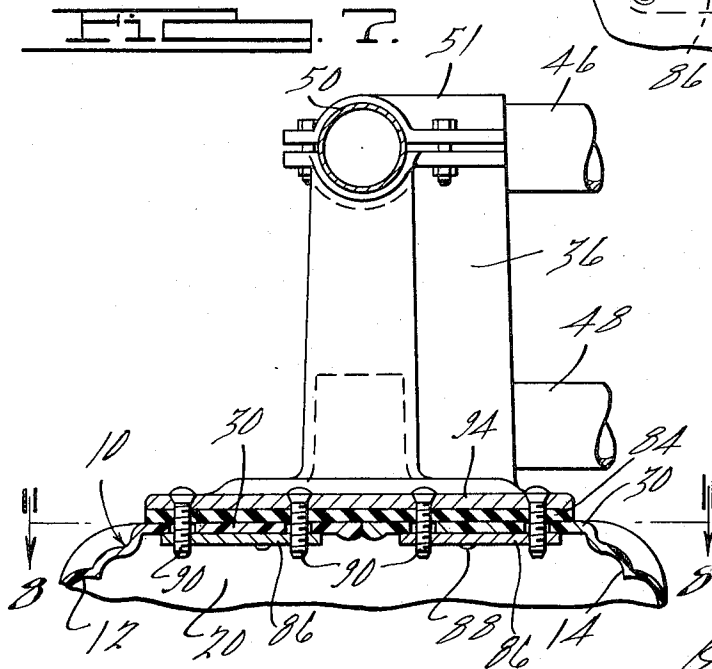
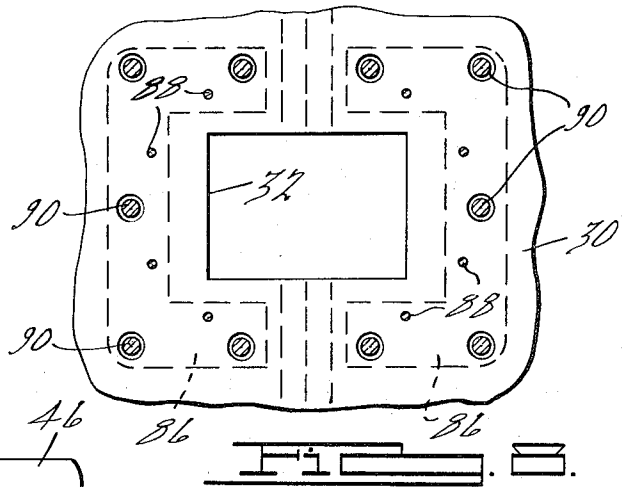
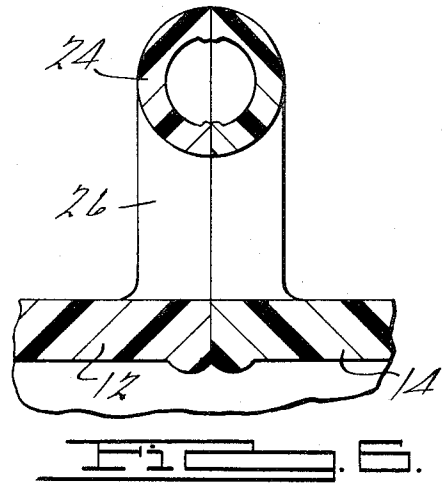
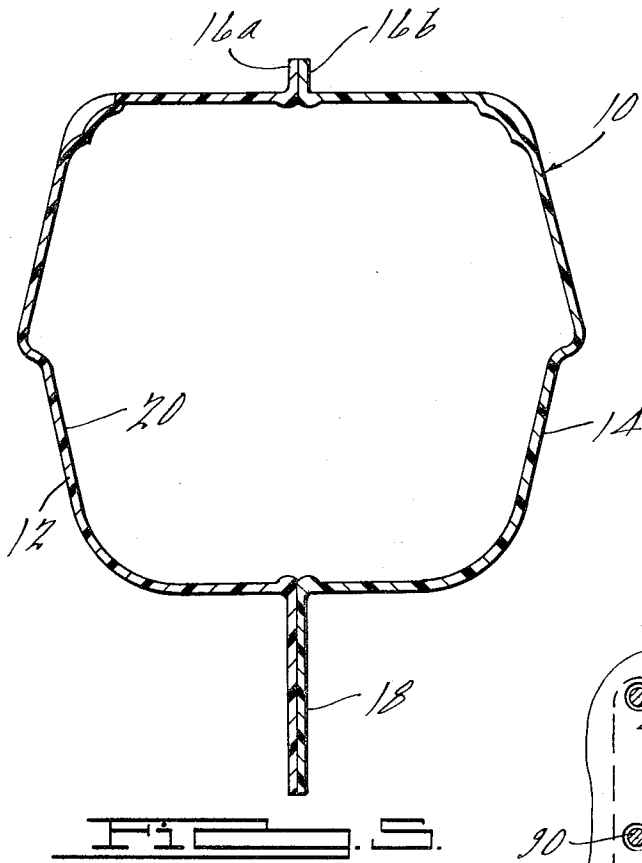


FIG. 4.

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CATAMARAN

SUMMARY OF THE INVENTION

The present invention relates to a catamaran and to a hull which is particularly adapted for use in a catamaran. The catamaran of the present invention is particularly distinguished by its utilization of relatively inexpensive light-weight hollow plastic hulls. The hulls of the present invention incorporate integral keels and support a light-weight metal platform on which a canvas or other load supporting surface is held. The catamaran of the present invention is particularly designed for manufacture in relatively small or compact sizes and is distinguished by simplicity of design, its lightness of weight and the multiple functions which its various structural components serve.

The catamaran hull is desirably made from two vacuum formed plastic sheets which are heat sealed or otherwise joined at peripheral flanges thereof. The flange is arranged in a generally vertical plane and performs several different functions. The flange is enlarged on the underside of the hull to define a keel or the like while hand holes are formed in the flange at the top of the hull to facilitate carrying the catamaran. The vertical orientation of the flange also gives the hull a desired vertical stiffness. The flange is also used as a point of attachment for rudder brackets. The two sheets of each hull define a water tight compartment which gives the boat its buoyancy and renders it incapable of being swamped. The supporting framework on which the occupants sit is connected to the hulls in a unique manner which assures the integrity and water tightness of the hulls. Four stanchions of the supporting framework comprise the only points of attachment of the framework to the hulls. The framework cooperates with the hulls to afford substantial rigidity to the entire structure.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a catamaran made in accordance with the present invention;

FIGS. 2, 3 and 4 are front elevational, side elevational and top plan views, respectively, of the catamaran illustrated in FIG. 1;

FIGS. 5, 6 and 7 are enlarged sectional views of the structure illustrated in FIG. 3, taken along the lines 5-5, 6-6 and 7-7 thereof, respectively; and

FIG. 8 is a sectional view of the structure illustrated in FIG. 7, taken along the line 8-8 thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

FIGS. 1 to 4 illustrate the overall shape of the catamaran of the present invention which will be seen to be constructed with two identical hulls 10. The shape of each hull 10 is best seen in FIGS. 5 and 6 from which it will be noted that each hull is made from two formed plastic sheets 12 and 14. The manufacture of the hull 10 is desirably accomplished with the use of the method and apparatus described in U.S. Pat. Nos. 3,242,245 and 3,250,660. The material from which the hulls 10 are formed may constitute polyethylene resin. The sheets 12 and 14 are originally in a planar configuration, the central portions thereof being vacuum formed. Portions of the sheets 12 and 14 which are not deformed out of their planar shape are heat sealed together to define peripheral flanges 16a and 16b of the

2

sheets 12 and 14, respectively. The flanges 16a and 16b are heat sealed together to define a single flange which will hereafter be referred to as the flange 16. A portion of the flange 16 on the underside of the hull is enlarged to define a keel 18. As used herein, the expression "keel" is intended to refer generically to any relatively thin downward projection on the underside of the hull which provides resistance against leeward movement of the hull.

It will be seen that portions of the sheets 12 and 14 bounded by the flange 16 are deformed outwardly away from one another into a hydrodynamically desirable configuration defining a hollow water tight compartment 20. Portions of the flange 16 on the upper surface of each hull are shaped to define a front handle 22 and a rear handle 24. As seen in FIG. 6, with respect to the handle 24, each handle is of enlarged hollow configuration and is separated from the main portion of the hull 20 by a hand hole 26. Subsequent to formation of the hull, portions of the flange 16 are cut or ground away adjacent a front mounting pad 28 and a rear mounting pad 30 thereof. Each of the mounting pads 28 and 30 has a central portion thereof cut away to define a hole or opening 32 (FIG. 8).

The hulls 10 are positioned in laterally spaced parallel relationship and are held in that relationship by a framework which includes a right front stanchion 34, a right rear stanchion 36, a left front stanchion 38 and a left rear stanchion 40. The front stanchions 34 and 38 are connected by an upper front cross bar 42 and a lower front cross bar 44, both of tubular shape. The cross bars 42 and 44 are parallel to one another, with the lower front cross bar 44 being positioned beneath and slightly forwardly of the upper cross bar 42. The rear stanchions 36 and 40 are connected by an upper rear cross bar 46 and a lower rear cross bar 48, both of tubular shape. The lower rear cross bar 48 is parallel to the upper cross bar 46, is spaced below the upper cross bar 46 and is positioned slightly rearwardly of the upper cross bar 46. The stanchions 34 and 40 are identical to one another while the stanchions 36 and 38 are identical to one another, the front stanchions being of mirror image configuration and the rear stanchions being of mirror image configuration. Tubular longitudinal frame members 50 connect the front and rear stanchions on each side of the boat and are generally coplanar with the upper cross bars 42 and 46. It will be seen that each stanchion 34, 36, 38 and 40 is provided with a cap 51 (FIG. 7) which is fastened thereon to clamp the longitudinal frame members 50 and upper cross bars 42 and 46 respectively. The opposite ends of the lower cross bars 44 and 48 are clamped to their respective stanchions by integral clamping portions on said stanchions which are representatively identified at 53 in FIG. 1.

The lower front cross bar 44 carries a mast base 52 at its mid-length. The upper front cross bar 42 is provided with a mast supporting bracket 54 which projects forwardly therefrom in a position in generally vertical alignment with the mast base 52. The base 52 and bracket 54 comprise the sole means of support of a mast 62 which is thus maintained in a desired vertical attitude. The arrangement is such that the mast 62 may be easily disassembled.

The various cross members 42, 44, 46 and 48, as well as the longitudinal frame member 50 are preferably made from tubing of aluminum or other light weight

materials. The stanchions 34 to 40 are desirably cast from aluminum or other light weight metal. The connection of the stanchions 34, 36, 38 and 40 to the hulls 10 in the manner to be described affords the entire vessel with a desired degree of rigidity. The hulls 10 take the place of lower longitudinal frame members on the sides of the vessel and cooperate with the various cross members and longitudinal frame members to resist relative movement of the said hulls.

The catamaran is completed by various gear, the utility of which will be readily apparent to those familiar with sailing craft. A canvas seat or the like 56 is held taut by a rope 58 wrapped around the longitudinal frame members 50 and the upper cross members 42 and 46. A lateen sail assembly 60 is mounted on the mast 62 and is held in a raised position thereon by a halyard 70. A main sheet 72 is connected at one end thereof to the upper rear cross bar 46 and passes through pulleys 74 connected to the sail assembly 60 and upper rear cross bar 46. A rudder bracket 76 is affixed to the flange 16 at the rear end of each hull 10 and serves to support a rudder 78 for pivotal movement about a vertical axis. Each rudder is provided with a pivoting tiller 80. A tiller bar 82 is loosely connected to the forward ends of each of the two tillers 80 in a suitable location for it to be grasped by a person sitting on the seat 56.

The manner of connection of the stanchions 34, 36, 38 and 40 to the hulls 10 is the same in each case and is shown in FIGS. 7 and 8 with reference to the stanchion 36. A resilient rubber gasket 84 is positioned on the pad 30 (or 28) in surrounding relationship to the hole 32. A pair of drilled and tapped mounting plates 86 of generally U-shaped configuration are positioned on the inner surface of the mounting pad 30 and on opposite sides of the hole 32. They are held in this position by means of rivets 88 which extend through the plates 86 and the wall of the pad 30. A plurality of

screws 90 are fitted through a solid base portion 94 of the stanchion 36 which rests on the gasket 84. The screws 90 pass through the mounting pad 30 and are threaded into the mounting plates 86. Thus, the pad 30 is tightly gripped between the mounting plates 86 and the base portion 94 of the stanchion. The gasket 84 is squeezed tightly against the mounting pad 80 and cooperates with the stanchion 36 to seal the hole 32 against the entry of water. The hole 32 is necessary for the insertion of the mounting plates 86 into the interior of the hull.

What is claimed is:

1. A multi-hulled sailboat including at least a pair of hollow water tight hulls each being made of two formed plastic sheets joined together at a peripheral flange extending around the hull and lying in a generally vertical plane, a load supporting platform mounted on and connecting said hulls, the flange of each of said hulls having a portion on the lower side thereof which is enlarged with respect to the remainder of said flange and which possesses a substantially greater vertical than transverse dimension to define a keel.

2. The structure set forth in claim 1 in which a hand hole is formed in said flange on the upper side of said hull.

3. The structure set forth in claim 1 in which a handle is formed in said flange on the upper side of said hull, said handle comprising an enlarged hollow portion and a hand hole opening formed in said flange beneath said enlarged hollow portion.

4. The structure set forth in claim 1 including a rudder bracket secured to said flange at the rear end of said hull.

5. The structure set forth in claim 1 in which said sheets are heat sealed together at marginal portions thereof to define said flange.

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