Aug. 12, 1969 D. CARMICHAEL 3,460,502

CATAMARAN

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FIG. 1

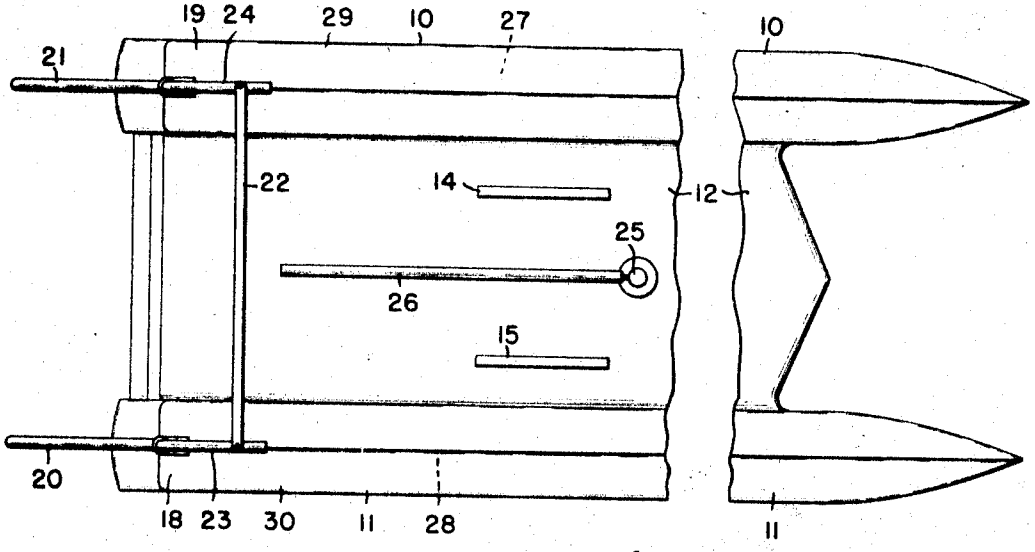

FIG. 2

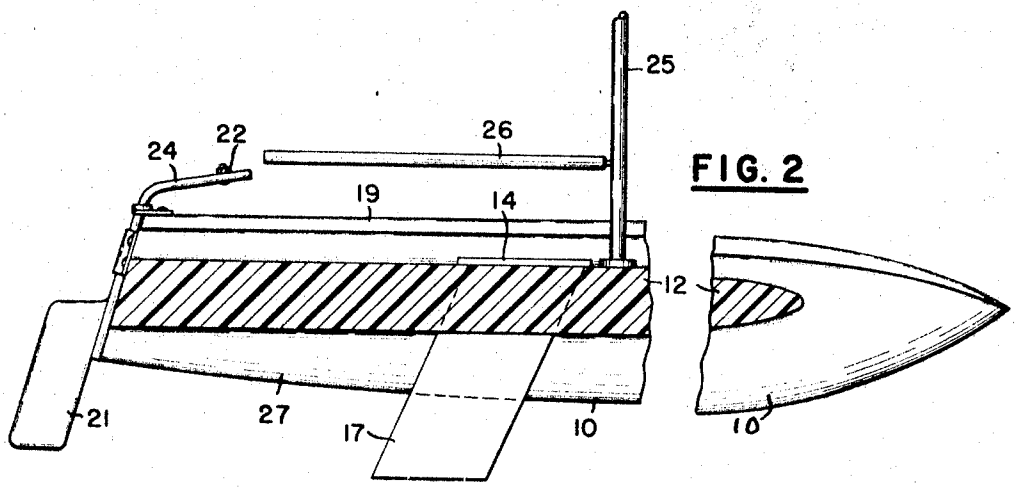

FIG. 3

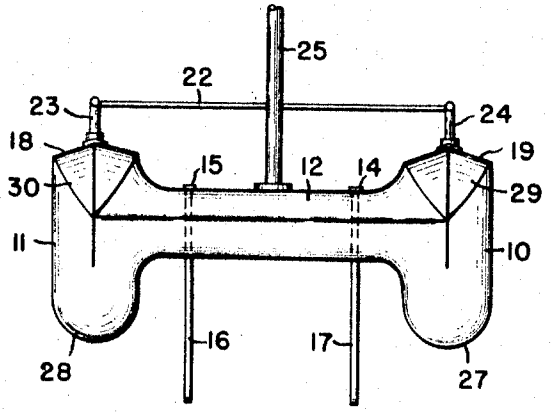

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FIG. 4

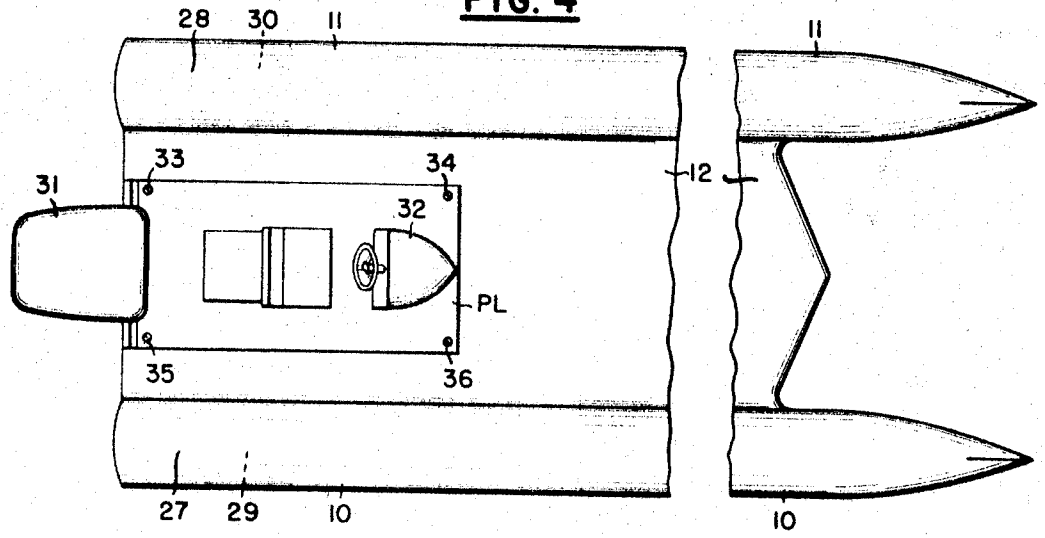


FIG. 5

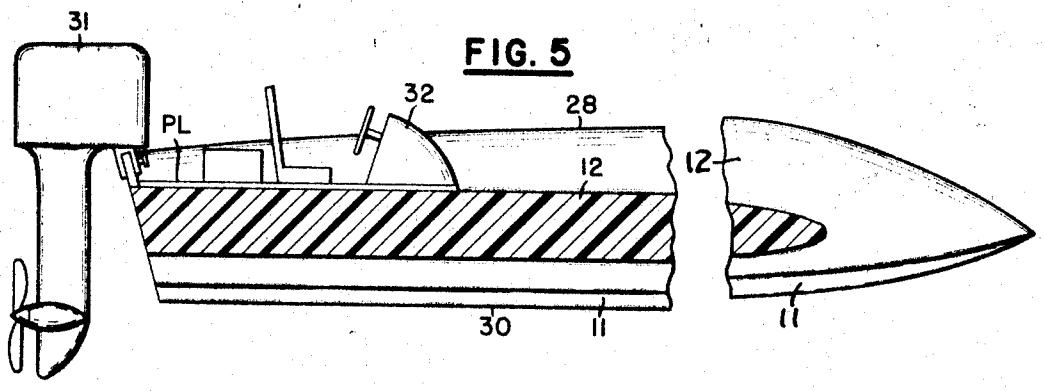
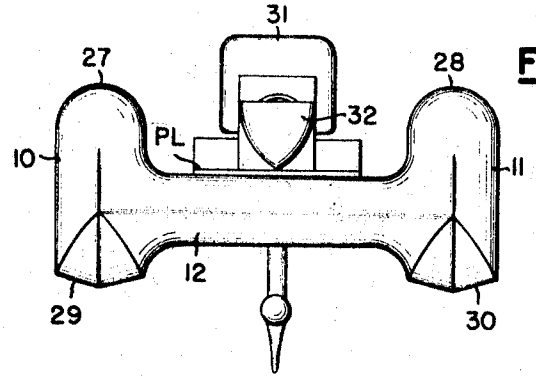


FIG. 6



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United States Patent Office 3,460,502
Patented Aug. 12, 1969

3,460,502

CATAMARAN

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Filed Nov. 27, 1967, Ser. No. 685,889
Int. Cl. B63b 1/12, 1/18
U.S. Cl. 114—61 5 Claims

ABSTRACT OF THE DISCLOSURE

A water-borne vehicle of the catamaran type wherein the pontoons which comprise the twin hulls are of a new and novel construction in that they are so fabricated that they are contrapositive in cross section and may be reversed or inverted so that two different water engaging surfaces are presented to the surface of the water.

The water engaging surfaces of the improved catamaran are so constructed that each surface presents to the water a hull having a different contour; thus providing a planing configuration in one instance and a displacement hull or configuration in the other.

My invention relates to water borne vehicles and more particularly to a vehicle of the twin hull or catamaran type. My improved catamaran structure contemplates twin hulls which may be reversed or inverted to present to the surface of the water, hulls having different configurations, one a displacement hull particularly adapted for propulsion under sail and the other a planing hull for use with mechanical propulsion, i.e., an out-board motor.

I have devised a new and novel catamaran structure which may with a minimum amount of time and effort, be converted from a sail boat to a motor boat, merely by reversing or inverting the hulls.

The hulls of my improved structure present to the surface of the water two unlike configurations, one relatively flat to provide a planing surface and the other somewhat deeper to provide a low resistance displacement sailing hull. The deeper displacement structure is used when the catamaran is used under sail and the shallow planing hull is used when it is propelled by a motor.

Since hulls of the catamaran type are relatively light in weight no difficulty will be experienced in inverting or reversing the hulls when it is desired to utilize the vehicle for the desired purpose.

The primary object of my invention contemplates an improved twin hull structure for catamarans and the like wherein each individual hull is so fabricated that two water engaging surfaces, having different configurations or contours, are provided and are diametrically opposed with respect to each other, one a displacement hull and the other a planing hull.

Another object of my invention is the provision of a catamaran wherein the changing from the deep or displacement draft hull to the shallow draft planing hull may be accomplished with a minimum amount of time and effort.

A further object of my invention is the provision of a shallow planing hull and deep draft displacement hull for catamarans, wherein the deep draft hull will provide a low resistance configuration to the craft when underway by sail.

A still further object of my improved catamaran structure is the provision of a new and novel configuration or cross section of the pontoons or hulls which while increasing the efficiency of the craft when it is underway, does not cause undue friction between the water and the hull by planing action.

The above and various other objects and advantages of my invention, will be readily understood from the following detailed description when read with reference to the following drawings:

FIG. 1 is a top plan foreshortened view of the cataramaran of my invention when used as a vehicle under sail and having a deep draft, the upper or top side extending vertically a lesser distance than the under-water engaging surface to provide a displacement configuration.

FIG. 2 is a side elevational view, partly in section, of the structure shown in FIG. 1, and illustrates the center board arrangement and the comparatively deep draft of the displacement hull.

FIG. 3 is a bow or front end view of the structure in FIGS. 1 and 2, and shows the contours of the twin hulls and in particular the deep draft displacement configuration thereof.

FIG. 4 is a top plan view similar to FIG. 1, except that the structure is illustrated in its inverted or reversed position, suitable for shallow draft planing operation, under mechanical propulsion and includes a motor console platform or base which is readily removable when the catamaran is to be inverted and used for sail propulsion.

FIG. 5 is a side elevational view, partly in section, of FIG. 4, and illustrates the flat planing surface of the hull.

FIG. 6 is a front or bow end view of the structures shown in FIGS. 4 and 5 and shows the contours of the twin hulls and the substantially flat planing configurations thereof.

In the accompanying drawings and the various figures, wherein like reference characters indicate like parts, I have shown, with particular reference to FIGURES 1 and 3, a catamaran structure which comprises a pair of spaced apart pontoons, **10** and **11**, which may be secured permanently, or may be detachably fastened by suitable means (not shown), in spaced relation to the deck or center section structure **12**.

Located in the deck **12** and spaced in juxtaposition with respect to each other are the wells **14** and **15**, for the accommodation of the center boards **16** and **17**.

Pivotally mounted on the stern portions **18** and **19** of the pontoons **10** and **11**, are the rudders **20** and **21**. These rudders are linked together and controlled by the bar **22**, which is rotatably secured to the bellcrank members **23** and **24**, to which the rudders **20** and **21**, are secured. A mast, **25**, is stepped in the deck **12**, and is provided with the usual boom **26**.

With particular reference to FIG. 3, there is depicted the contour or configuration of the pontoons **10** and **11**. As shown in this figure the water engaging surfaces of the pontoons **10** and **11**, are adapted for motivation under sail and project downwardly from the deck structure **12** at **27** and **28**, a greater distance than the portions **29** and **30** extend above the deck **12**. Thus as shown when the craft of this invention is under way by sail the portions **27** and **28** of the pontoons **10** and **11**, will extend downwardly into the water a greater distance than the portions **29** and **30** extend vertically above the deck thus providing a displacement to the structure. The structure depicted in FIGURES 4, 5 and 6, is substantially the same as that shown in FIGURES 1, 2 and 3, except that hull portion, which comprises the pontoons **10** and **11** have been inverted or reversed so that now the greater portions **27** and **28** of pontoons **10** and **11**, which extended downwardly as shown in FIGURE 3, are now reversed and now extend upwardly, with the upwardly extending portions **29** and **30** of FIGURE 3 extending downwardly to provide a planing hull particularly adapted for operation by means of mechanical propulsion, for example, the motor shown at **31** which is operated and controlled by a suitable console **32** mounted on the platform PL,

secured to the deck **12**. The platform PL, with its associated equipment, may be readily removed prior to the conversion to a sailing craft by removing the securing means **33**, **34**, **35** and **36**, which anchor the platform PL to the deck.

Thus it will be observed that my invention contemplates a novel catamaran structure having a dual purpose.

As shown in the various figures and described in the specification, the water engaging surfaces of the dual or invertable pontoons each have a different contour, one providing a planing hull and the other a displacement hull, thus providing in a single unitary structure hulls structures for sail and mechanical propulsion which may be inverted or reversed to meet the requirements of the operator.

While I have shown and described the preferred embodiment of my invention, it is understood that various changes and modifications may be made therein without departing from the spirit of the invention and I am only limited by the appended claims.

What is claimed is:

1. A catamaran, comprising in combination a pair of longitudinally extendig pontoons spaced apart in lateral relation with respect to each other, means between said pontoons and secured thereto for maintaining said pontoons in spaced relation, each of said pontoons having contraposed diametrically opposite upper and lower surfaces of unlike contour and size.

2. A catamaran as exemplified in claim **1**, characterized in this, that the upper portions of the pontoons extend vertically above the deck, a lesser distance than that portion of the pontoon below the deck.

3. A catamaran as exemplified in claim **2**, characterized in this, that means is provided for stepping a mast on the top side of the deck interposed between the upwardly extending pontoons.

4. A catamaran as exemplified in claim **1**, wherein the lower portions of the pontoons extend downwardly a distance directly proportional to the vertically extending upper portion.

5. A catamaran as exemplified in claim **1**, characterized in this, that the contour of the pontoons is such that a minimum amount of friction is generated between them and the water when the indicated surface is used for its intended purpose.

References Cited

UNITED STATES PATENTS

2,984,845 5/1961 Gregoire ---------- 114—61 XR

FOREIGN PATENTS

669,001 12/1938 Germany.

ANDREW H. FARRELL, Primary Examiner