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Marcil

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[54] **CATAMARAN STRUCTURE**

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[52] **U.S. Cl.** **114/39;** 114/61; 114/91

[51] **Int. Cl.** **B63h 9/00**

[58] **Field of Search** 114/39, 61, 132, 136, 143, 114/89, 90, 91, 102, 122, 124

[56] **References Cited**

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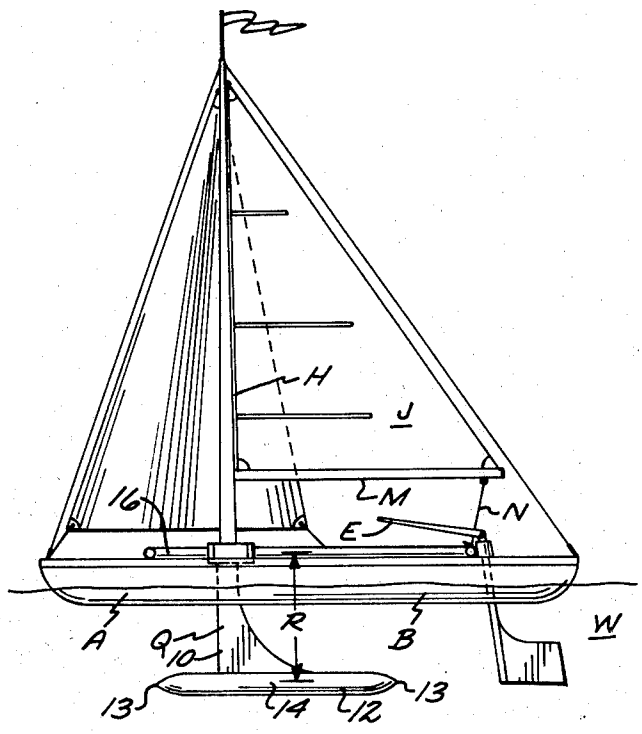
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[57] **ABSTRACT**

A catamaran structure that includes a longitudinally extending, intermediately positioned, elongate rigid member of circular transverse cross section that pivotally supports a tubular sleeve thereon. The sleeve serves as a support for a sail carrying mast that extends upwardly therefrom, and a keel structure that depends downwardly therefrom. The center of gravity of the keel structure and the weight of the keel structure are so related to the height of the mast and the area of the sail carried thereon, that the mast and sail will tilt laterally to port or starboard when the catamaran is wind driven, but without tilting the pontoons of the catamaran and the user supported structure situated therebetween. The relationship of the keep and mast structure above described is preferably such that the mast can tilt in the strongest wind that will normally be encountered, but without this tilting being sufficient to move the lowermost portion of the keel structure into contact with the catamaran to result in the overturn of the latter.

3 Claims, 4 Drawing Figures



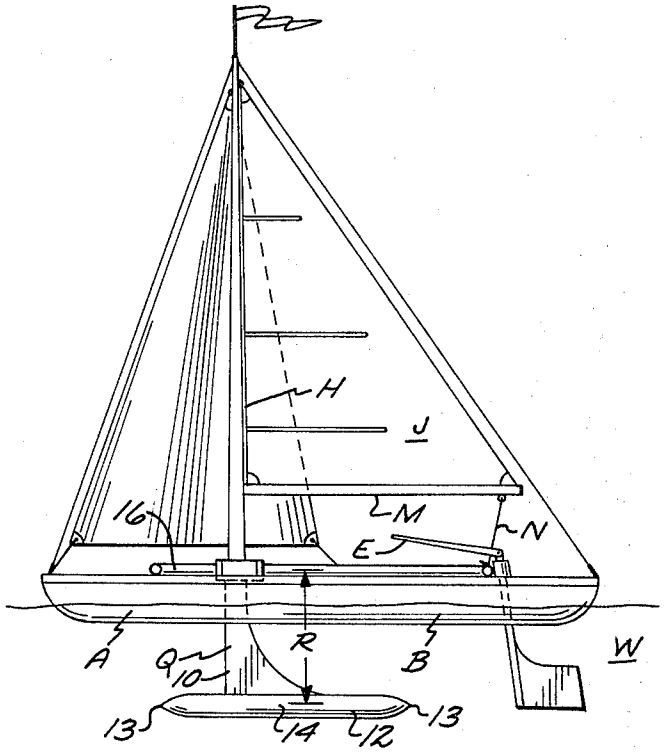


FIG. 1

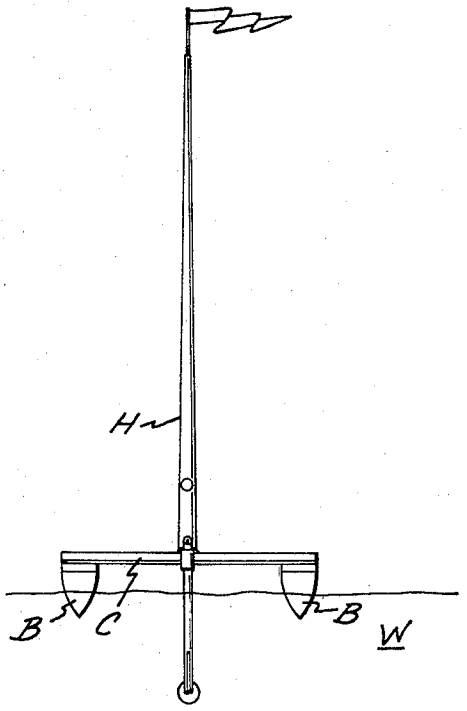


FIG. 2

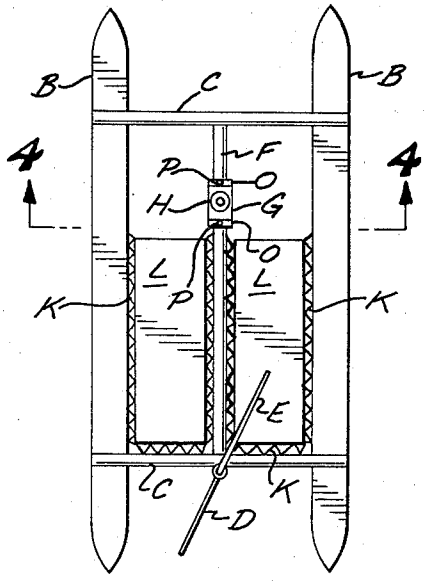


FIG. 3

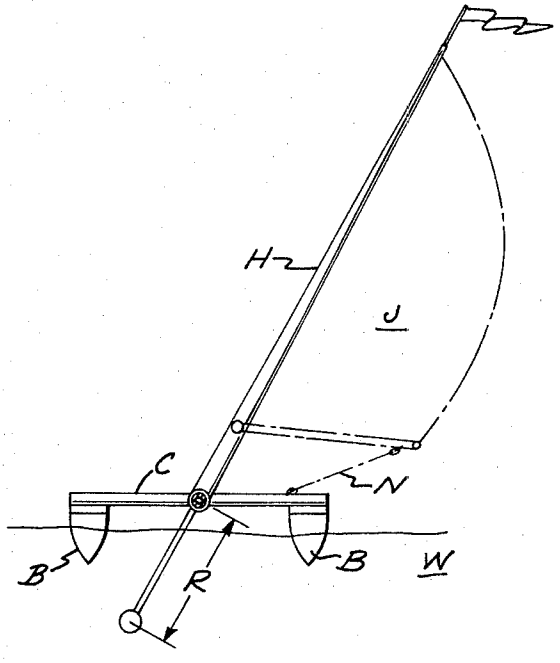


FIG. 4

CATAMARAN STRUCTURE

BACKGROUND OF THE INVENTION

1. Field of the Invention

Catamaran structure.

2. Description of the Prior Art

The popularity of the catamaran has increased markedly in recent years. However, such craft have the operational disadvantage that they are subjected to extreme tilting in a strong breeze, which requires the user or passengers to shift from side to side, and in some instances, the catamaran may actually be overturned in a particularly strong gust of wind. This operational disadvantage is eliminated in the present invention, by allowing the sail carrying mast and the keel structure to be concurrently supported from a pivotally mounted sleeve, and in a strong wind or breeze, the mast assuming a tilted position either port or starboard of the catamaran, but without displacing the pontoons and the user supporting structure therebetween from a horizontal position.

A major object of the present invention is to provide a catamaran that will have all of the operational advantages inherent to a conventional catamaran vessel, but with the keel structure and sail carrying mast capable of tilting either port or starboard when the catamaran is subjected to a substantial wind or breeze, and without this tilting in any way moving the pontoons and the user supporting structure situated therebetween from a horizontal position.

A further object of the invention is to supply a catamaran in which the mast and area of the sail carried thereon are so related to the weight and center of gravity of the keel structure, that even in the strongest wind that will normally be encountered, the mast and keel will pivot, but without danger of overturning the catamaran.

Yet another object of the invention is to provide a catamaran in which the enjoyment thereof is enhanced by the pontoon and user supporting portion of the catamaran therebetween remaining in a substantially horizontal position irrespective to the degree in which the sail carrying mast and the keet structure pivot transversely relative to the pontoons.

SUMMARY OF THE INVENTION

A catamaran that includes a pair of laterally spaced pontoons that are connected in fixed relationship with one another by a number of transversely extending cross pieces. An elongate rigid member extends longitudinally between the pontoons and is affixed to the cross pieces. The elongate member pivotally supports a sleeve, with the sleeve having a mast extending upwardly therefrom on which at least one sail is mounted. A keel structure depends downwardly from the sleeve, with the weight of the keel and the center of gravity thereof being so related to the height of the mast and the sail carried thereon that the mast and sail may pivot when the catamaran is subjected to a substantial wind or breeze, without the tilting of the mast and the keel structure resulting in like tilting of the pontoons or the user supporting portion of the catamaran situated therebetween. Thus, the catamaran, when subjected to even strong gusts of wind will merely have the mast, sail, and keel structure pivot relative to the elongate member, and without the necessity of the user or passengers on the catamaran shifting from side to side to keep one of the pontoons raising from the water. Due to the pivoting of the mast and sail carried thereon, as well as the keel structure, the possibility of the catamaran being overturned when subjected to strong justs of wind is substantially minimized as in such a gust the effective area of a sail exposed thereto is substantially lessened due to the sail and mast automatically pivoting to a lowered position.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevational view of a catamaran embodying a pivotally movable mast and sail supported thereon, together with a keel structure that depends downwardly from a rotatable sleeve;

FIG. **2** is an end elevational view of the catamaran when not subjected to a strong breeze or wind;

FIG. **3** is a top plan view of the catamaran as shown in FIG. **2**; and

FIG. **4** is an end elevational view of the catamaran when the latter is subjected to a strong wind, which wind is of sufficient magnitude to cause the sail carrying mast and the keel structure to tilt substantially to either port or starboard.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A catamaran A is shown in the drawings that embodies the present invention, with the catamaran including two parallel laterally spaced pontoons B that are supported in fixed relationship with one another by two or more cross pieces C. The rearwardly disposed cross piece C pivotally supports a rudder D that is controlled by a handle E. An elongate rigid member F is intermeidately positioned between the pontoons B and parallel thereto, and is rigidly secured to the cross pieces C.

The elongate member F has at least a portion thereof that is of circular transverse cross section, and this portion pivotally supporting a tubular sleeve G. A mast H has the lower end thereof rigidly secured to the upper portion of the sleeve G as shown in FIG. **1**, and the mast supporting at least one sail J.

The elongate member F and the pontoons B by webbing K or other means have a support L for a user or passengers extending therebetween. The sail J as is conventional in sailing vessels includes a boom M that is pivotally secured to the mast H, and lines N being provided to raise or lower the sail on the mast H as well as otherwise control the position of the sail. The sleeves G may be longitudinally disposed at a desired adjusted position on the elongate member F, by providing two collars O between which the sleeve G is positioned, and the collars O being held in a fixed position on the elongate member F by tightening set screws P or like conventional holding members.

A keel structure Q is provided that depends from the sleeve G and as may be seen in FIG. **4** that pivots concurrently with the sleeve when the mast H and sail J pivot to the port or starboard due to the sail being subjected to a substantial wind.

The keel structure Q as shown in FIGS. **1** and **2** includes a strong rigid plate **10** that depends from the sleeve G and has a first end secured thereto. The plate on the lower second end thereof supports a weight **12** that is illustrated in the drawings of being elongate shape and having pointed ends **13** to minimize the resistance of the weight as it is moved through the water W.

The distance R from the center of gravity **14** of keel weight **12** as shown in FIGS. **1** and **4** to the center line **16** about which the sleeve G pivots is so selected relative to the height of mast H and area of sail J that when the catamaran A is subjected to strongest wind it will normally encounter, the weight **12** will not be pivoted upwardly to the extent that it contacts one of the pontoons B and causes the craft to overturn.

The use and operation of the catamaran A will be obvious from the previous description and the drawings illustrating the catamaran, and further description of the operation of the catamaran is not required.

I claim:

1. In a catamaran that includes a pair of laterally spaced parallel pontoons, a plurality of spaced cross pieces secured to said pontoons to maintain them in a fixed spaced relationship, a mast having a first end, a sail supported from sail mast, a rudder pivotally supported in a fixed position relative to said pontoons, a support for a user of said catamaran intermediately disposed between said pontoons, the improvement for so supporting said mast and sail that said pontoons, support and cross pieces remain substantially horizontal when said catamaran is wind propelled, said improvement comprising:

a. a rigid elongate member secured to said crosspieces and normally disposed thereto, said member of circular transverse cross section;

b. a pair of longitudinally spaced collars adjustably secured to said rigid member;

c. a tubular sleeve pivotally supported from said elongate member and disposed between said collars;

d. first means for rigidly connecting said first end of said mast to said sleeve for said mast to extend upwardly therefrom; and

e. a keel weight

f. a rigid downwardly extending keel member that has first and second ends, said first end of said keel member secured to said sleeve and said second end to said keel weight, with the magnitude of said keel weight and the distance between said first and second ends of said keel member being so related to the height of said mast and the area of said sail that said mast and sail will pivot downwardly and outwardly and said keel member and keel weight upwardly and outwardly as said catamaran is subjected to wind without said pontoons crosspieces and support being appreciably displaced from a horizontal position.

2. A catamaran as defined in claim **1**, which in addition includes:

f. first means for slidably adjusting said collars to selected longitudinal positions on said elongate member to locate said mast and sleeve at a desired longitudinal position relative to said pontoon.

3. A catamaran as defined in claim **1** in which keel member includes the distance between the center of gravity of said weight and the centerline about which said sleeve pivots being so selected that said weight does not pivot upwardly to contact one of said pontoons in the strongest wind to which said catamaran will normally be subjected.

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