

July 12, 1960

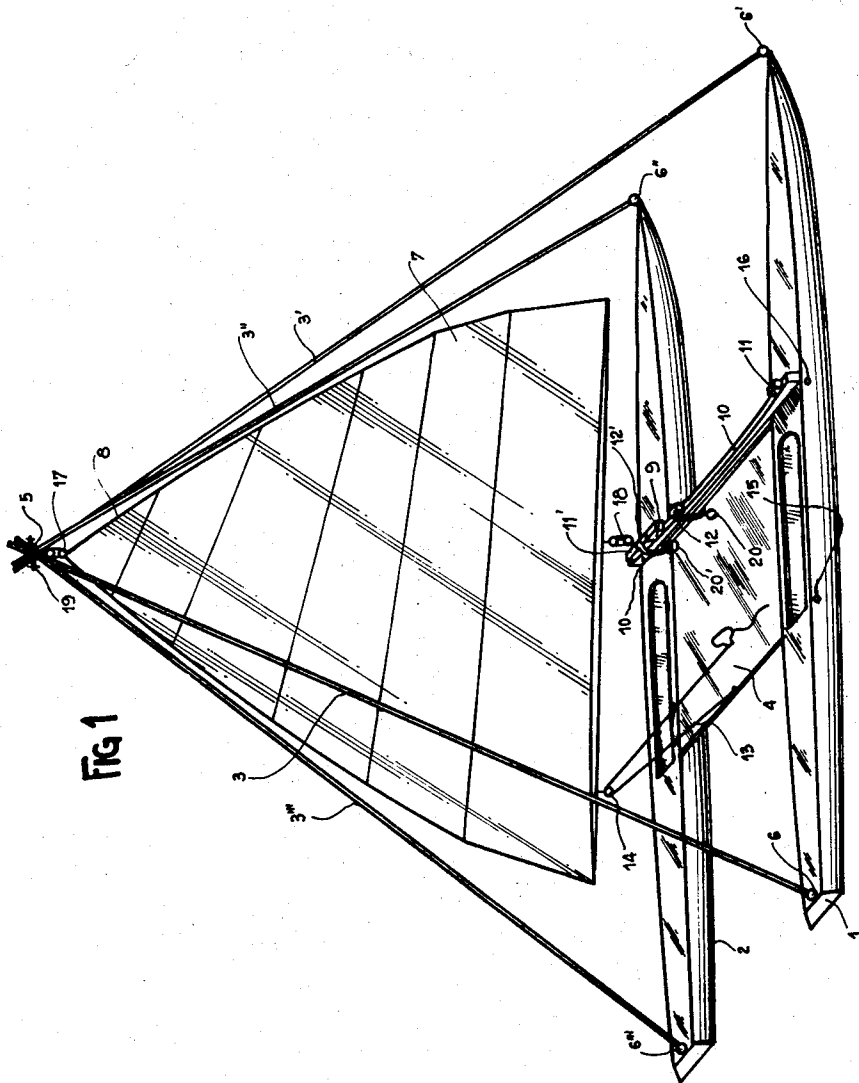
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CATAMARAN SAIL BOAT

Filed Nov. 22, 1955

2 Sheets-Sheet 1



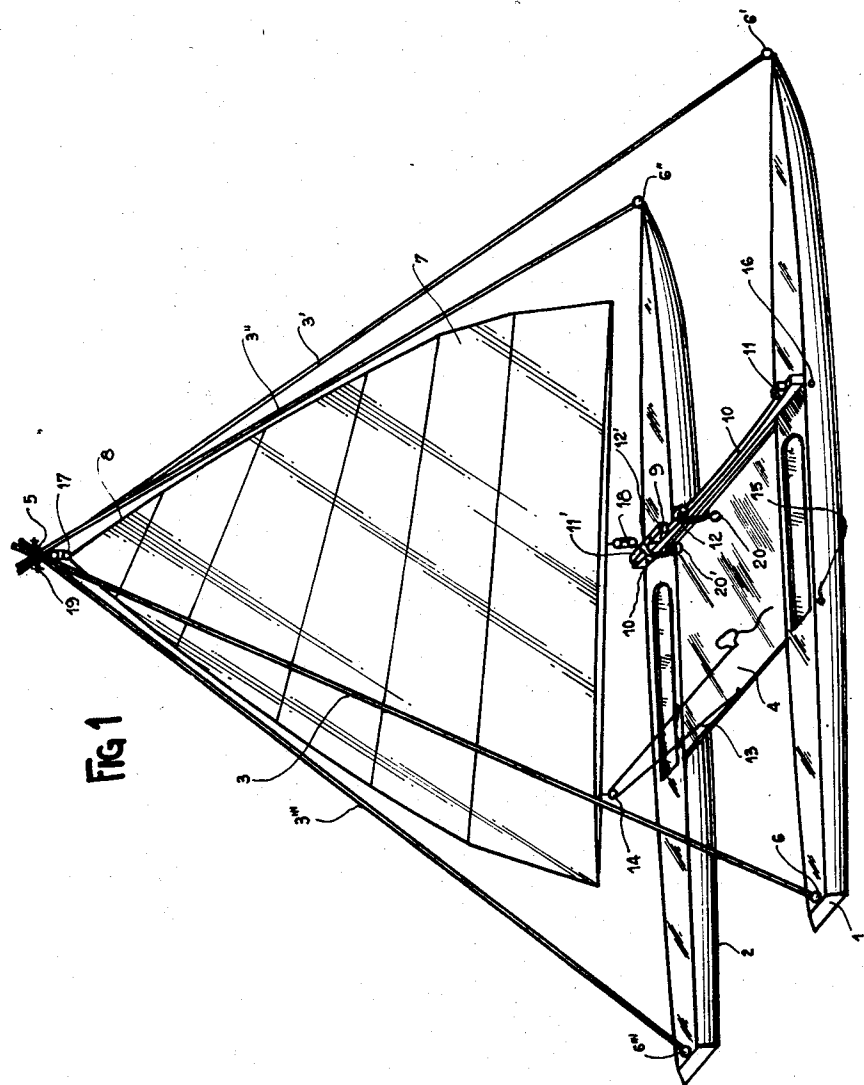
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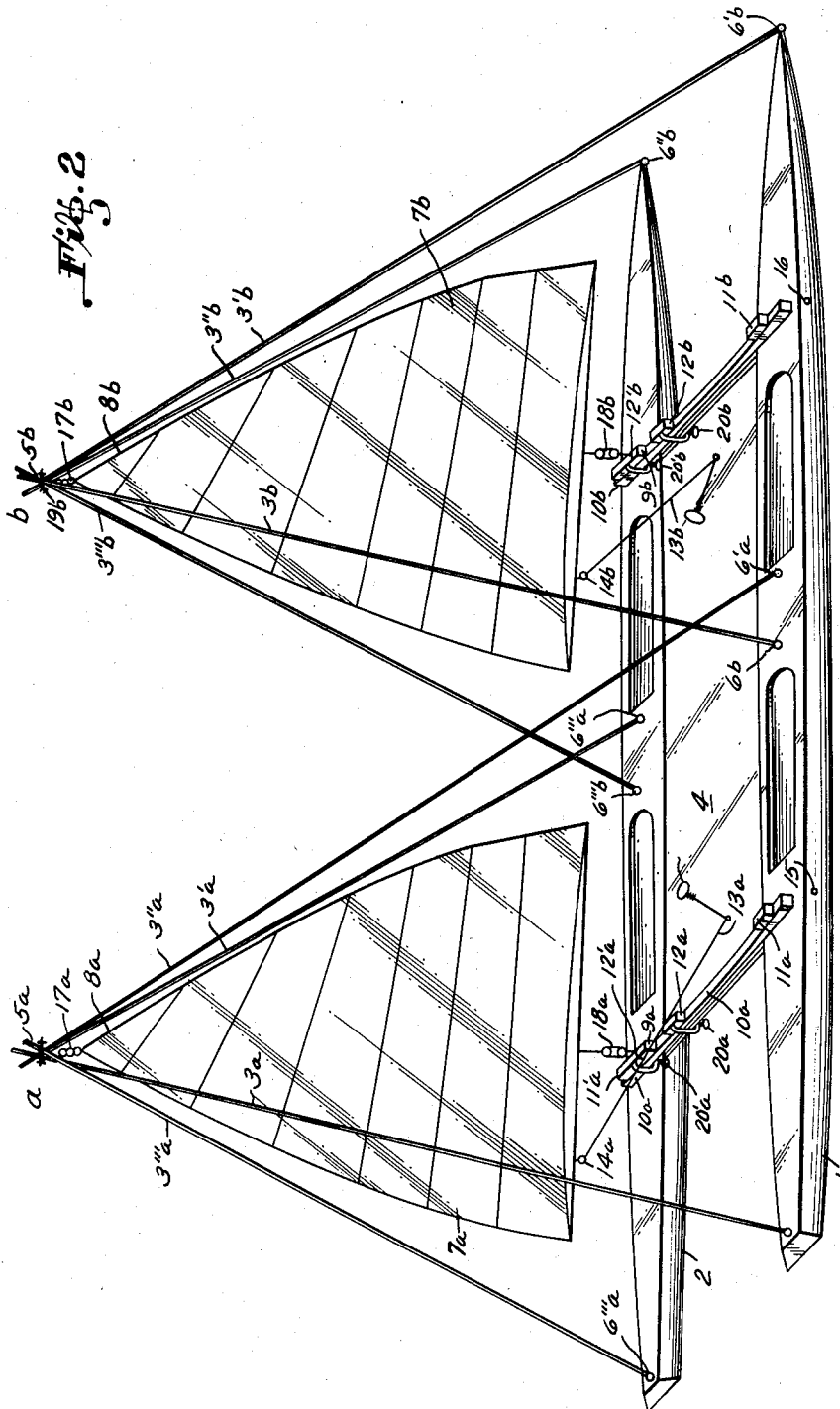
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CATAMARAN SAIL BOAT

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This invention concerns a sail boat having two or more coupled hulls of the catamaran type.

It is known that boats of this type comprise an element generally designed in the form of a relatively large cross-deck for assembling and joining the hulls, because the forces to which the hulls are independently subjected set up considerable torsional stresses in this intermediate assembly element. Consequently, the said deck must have considerable strength, which entails a considerable increase in the weight of the whole assembly to the detriment of the buoyancy and the speed of the vessel. The bulk and manoeuvrability of the vessel are thereby affected, whereby movement on land is rendered difficult and sometimes impossible.

The present invention concerns a catamaran sail boat comprising a number of separate hulls, connecting means between said hulls consisting of at least one group of inclined mast like elements secured to and extending over said hulls, connecting means between the lower end of each mast and the respective hull, further connecting means for connecting together the free opposite ends of at least some of said masts providing thereby a rigid connection between said hulls, deck means secured to said hulls and discharged by said masts of any torsion stresses and further at least one sail pertaining to a group of said mast like elements and secured to said mast like elements.

In accordance with another feature of the invention, the lower part of the said masts is preferably secured to the forward and stern ends of the aforesaid hulls.

It will thus be appreciated that the longitudinal torsional forces exerted on the catamaran result in comprehensive or tensile forces exerted on each mast and received and transmitted by the point at which these masts are connected together.

With this arrangement it is possible to distribute very large forces by means of an assembly of mast elements of low weight. The torsional forces being thus distributed, the intermediate element, for example the deck connecting the two hulls are only subjected to tensile or compressive forces.

The said arrangement may be designed in a very simple manner so as to permit rapid dismantling and re-assembly and consequently separation of the two hulls to enable them to be separately transported on land.

In the accompanying drawing, which is given solely by way of example; Fig. 1 is a diagrammatic view in perspective of a boat having two hulls and equipped with a device of the aforesaid type device.

Fig. 2 is a diagrammatic view in perspective of a boat equipped with a device of the aforesaid type but comprising two common points.

According to the form of embodiment shown on Fig. 1 comprising one common point, the said boat consists of two hulls 1 and 2 connected in accordance with the invention by an assembly of four masts 3, 3', 3'', 3''' connected at a common point 5 at their ends and secured to their lower ends at 6, 6', 6'', 6''' at forward and stern

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ends of the two hulls 1 and 2. The said masts may, of course, be formed in one or more separable parts and are connected at 5, preferably by a very simple means, such as a keyed member 19 or other appropriate means permitting of rapidly separating the masts from one another for the purpose of dismantling the whole assembly. The said masts may be secured at their lower ends to the hulls 1 and 2, for example by means of orifices formed in the said hulls, in which they are spigotted or keyed, or by any other means.

The hulls are connected together by an element 4 forming a cross-deck and consisting, for example, of fixed tubes 15, 16 disposed transversely, integral with the hulls. The said tubes then support the panel 4 forming the deck. These various elements may be very light by reason of the fact that this assembly has only to withstand transverse torsional forces which result in tension or compressive forces on the tubes.

The masts 3, 3', 3'', 3''' afford interesting possibilities for the rigging of the boat. A sail 7 is connected at its upper end 8 to the junction point 5 of the said masts by means of a pulley arrangement 17. Its lower part is connected to a slide 9 of a normal type by means of a pulley arrangement 18, said slide is adapted to travel on a guideway 10 consisting, for example, of appropriate irons or ledges.

The said guideway 10 is disposed transversely in a plane substantially perpendicular to the longitudinal axis of the boat. The travel of the slide enables the lower part of the sail to swing from one edge of the vessel to the other.

The said guideway is curved and has its concavity uppermost, for example in the form of an arc of a circle having as its centre the apex of the pyramid formed by the four masts 3, 3', 3'', 3'''. It is provided at its two ends with abutments 11, 11' limiting the travel of the slide.

As a result of this arrangement, the wind acting on the sail forces the slide as far as the opposite abutment, thus imparting to the sail a concave form preventing the wind from escaping upwardly and thereby increasing the effect of the sail.

Moreover, it will be appreciated that in the position illustrated in the figure the effect of the wind on the sail imparts an upwardly directed thrust to the hull 2 which tends to plunge. This results in a lifting effect which can naturally be very simply regulated by means of adjustable abutments 12, 12' maintaining the slide at a desired point of the guideway. Said adjustable abutments may be maintained at a chosen point of the guideway by means of any known type for instance screws 20, 20'. A planing action of the vessel can thus be more readily produced than with an existing type of sailing boat.

There is shown at 13 a rope gear secured at one end to the deck 4 and permitting of manoeuvring the sail by means of the reversing pulley 14.

The device hereinbefore described is also applicable to boats having two or more hulls of large dimensions. It may comprise a plurality of pyramids of four or more masts each of said pyramids being disposed in a succeeding relation longitudinally of the vessel, the bases of said pyramids overlapping each other in order to increase the rigidity of the hull. These pyramids may support one or more sails connected to the apex thereof.

The hulls may naturally consist of any appropriate material, such as wood, metal, synthetic plastic materials or the like.

According to the form of embodiment shown on Fig. 2, the hulls 1 and 2 are connected by a first group *a* of four masts 3*a*, 3'*a*, 3''*a*, 3'''*a* and by a second group *b* of four masts 3*b*, 3'*b*, 3''*b*, 3'''*b*. The masts of the group *a* are connected at 5*a* at their upper ends and maintained by means of a keyed member 19*a*, they are secured to their lower ends at 6*a*, 6'*a*, 6''*a*, 6'''*a*. A sail 7*a* is connected

at its upper end 8a to the junction point 5a by means of a pulley arrangement 17a. The lower part of said sail is connected to a slide 9a by means of a pulley arrangement 18a, said slide is adapted to travel on a guideway 10a, provided with fixed abutments 11a, 11'a and adjustable abutments 12a, 12'a provided with screws 20a and 20'a. The sail 7a is manoeuvred by means of a rope 13a and a reversing pulley 14a.

Similar elements to those described in connection with the mast group a are to be found in mast group b. Said elements are indicated by corresponding reference numerals. The masts pertaining to groups a and b constitute two pyramid shape configurations having overlapping bases.

Naturally, the invention is in no way limited to the embodiment illustrated and described, which has only been referred to by way of example.

What I claim is:

1. A catamaran sail boat comprising a number of separate hulls, connecting means between said hulls consisting of at least one group of inclined mast like elements secured to and extending over said hulls, connecting means between the lower end of each mast and the respective hull, further connecting means for connecting together the free opposite ends of at least some of said masts providing thereby a rigid connection between said hulls, deck means secured to said hulls and discharged by said masts of any torsion stresses and further at least one sail pertaining to a group of said mast like elements and secured to said mast like elements.

2. A catamaran sail boat comprising a number of separate hulls, connecting means between said hulls consisting of at least one group of inclined mast like elements secured to and extending over said hulls, all of said masts pertaining to one group forming the edges of a substantially pyramid shaped configuration, connecting means between the lower end of each mast and the respective hull, further connecting means for connecting together the free opposite ends of at least some of said masts providing thereby a rigid connection between said hulls, deck means secured to said hulls and discharged by said masts of any torsion stresses and further at least one sail pertaining to a group of said mast like elements and secured to said mast like elements.

3. A catamaran sail boat comprising a number of separate hulls, connecting means between said hulls consisting of at least one group of inclined mast like elements secured to and extending over said hulls, all of said masts pertaining to one group forming the edges of a substantially pyramid shaped configuration and converging in a substantially common direction, connecting means between the lower end of each mast and the respective hull, further connecting means for connecting together the free opposite ends of at least some of said masts providing thereby a rigid connection between said hulls, deck means secured to said hulls and discharged by said masts of any torsion stresses and further at least one sail pertaining to a group of said mast like elements and secured to said mast like elements.

4. A catamaran sail boat comprising a number of separate hulls, connecting means between said hulls consisting of at least one group of inclined mast like elements secured to and extending over said hulls, all of said masts pertaining to one group forming the edges of a substantially pyramid shaped configuration and converging in a substantially common direction, connecting means between the lower end of each mast and the respective hull, further connecting means for connecting

together the free opposite ends of at least some of said masts providing thereby a rigid connection between said hulls, and deck means secured to said hulls and discharged by said masts of any torsion stresses and further at least one sail pertaining to a group of said mast like elements and secured to said mast like elements, either hull having at least two symmetrically located converging masts lying in a common plane which is inclined in the direction of the adjacent hull.

5. A catamaran sail boat comprising a number of separate hulls, connecting means between said hulls consisting of at least one group of inclined mast like elements secured to and extending over said hulls, all of said masts pertaining to one group forming the edges of a substantially pyramid shaped configuration, connecting means between the lower end of each mast and the respective hull, further connecting means for connecting together the free opposite ends of at least some of said masts providing thereby a rigid connection between said hulls, and deck means secured to said hulls and discharged by said masts of any torsion stresses and further at least one sail pertaining to a group of masts and secured to said masts at their common connecting point and adjustable control means at the lower end of said sail registering with said deck.

6. A catamaran sail boat according to claim 5 wherein said adjustable control means consists of a slide secured to the lower end of said sail and a guideway extending across said deck for supporting and guiding said slide.

7. A catamaran sail boat according to claim 6 wherein said guideway is curved according to an arc of a circle having its center located substantially at the upper connecting point of said masts.

8. A catamaran sail boat according to claim 1 wherein said further connecting means consists of a keyed member easily detachable.

9. A catamaran sail boat according to claim 5 comprising a pulley arrangement secured to the said common point for supporting said sail.

10. A catamaran sail boat according to claim 7 comprising a plurality of said guideways fixed with said hulls and disposed in a direction substantially perpendicular to the longitudinal axis of the vessel, comprising moreover a plurality of said slides adapted to run on said guide elements, each one of said slides being connected to the lower part of each one of said sails.

11. A catamaran sail boat according to claim 3 wherein the said masts form successive groups each containing at least four masts, all of said groups extending along the said hulls.

12. A catamaran sail boat according to claim 11 wherein said further connecting means connects together the free ends of the masts of each group of masts, the masts of each group forming a substantially pyramid shaped configuration.

13. A catamaran sail boat according to claim 12 wherein at least certain of said pyramid shaped configuration have overlapping bases.

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