

Oct. 19, 1971

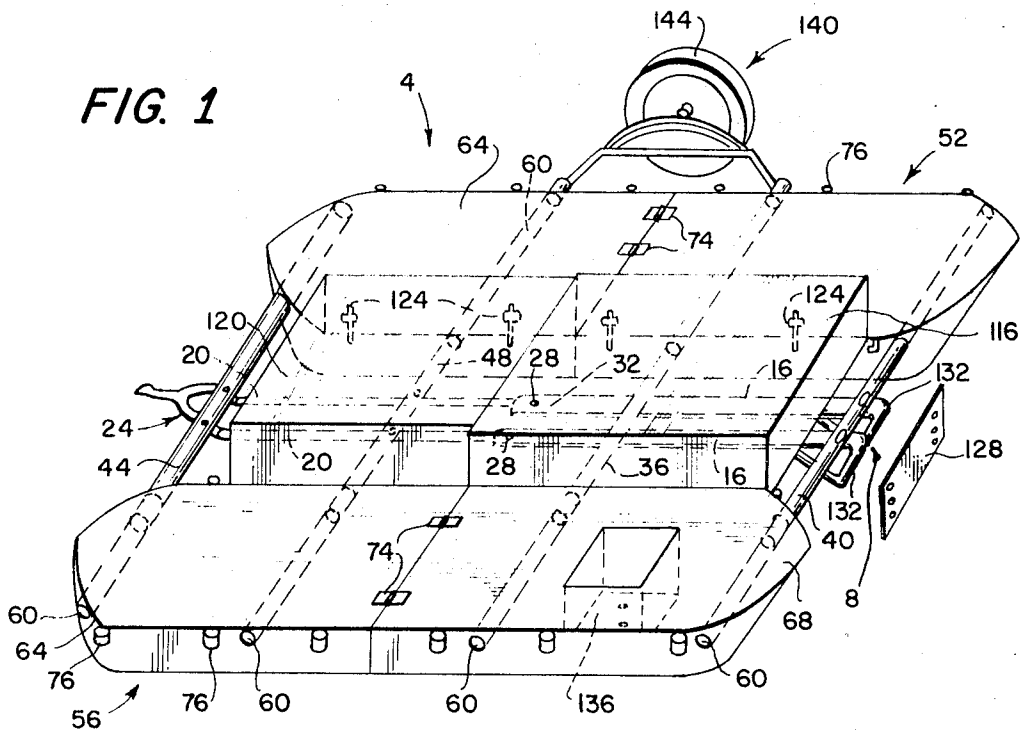
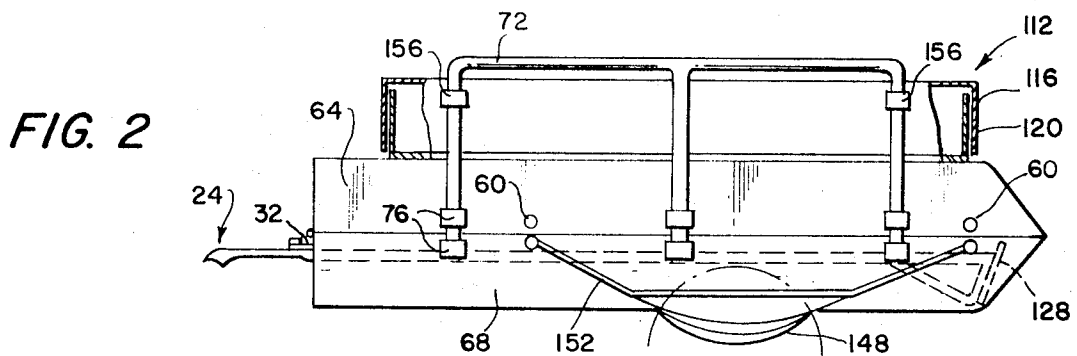
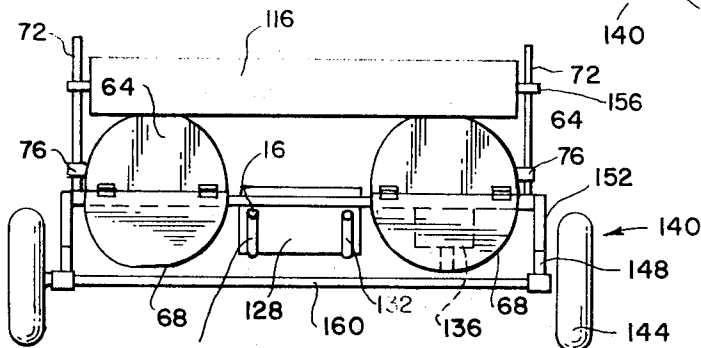
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3,613,136

CATAMARAN

Filed Oct. 3, 1969

3 Sheets-Sheet 1



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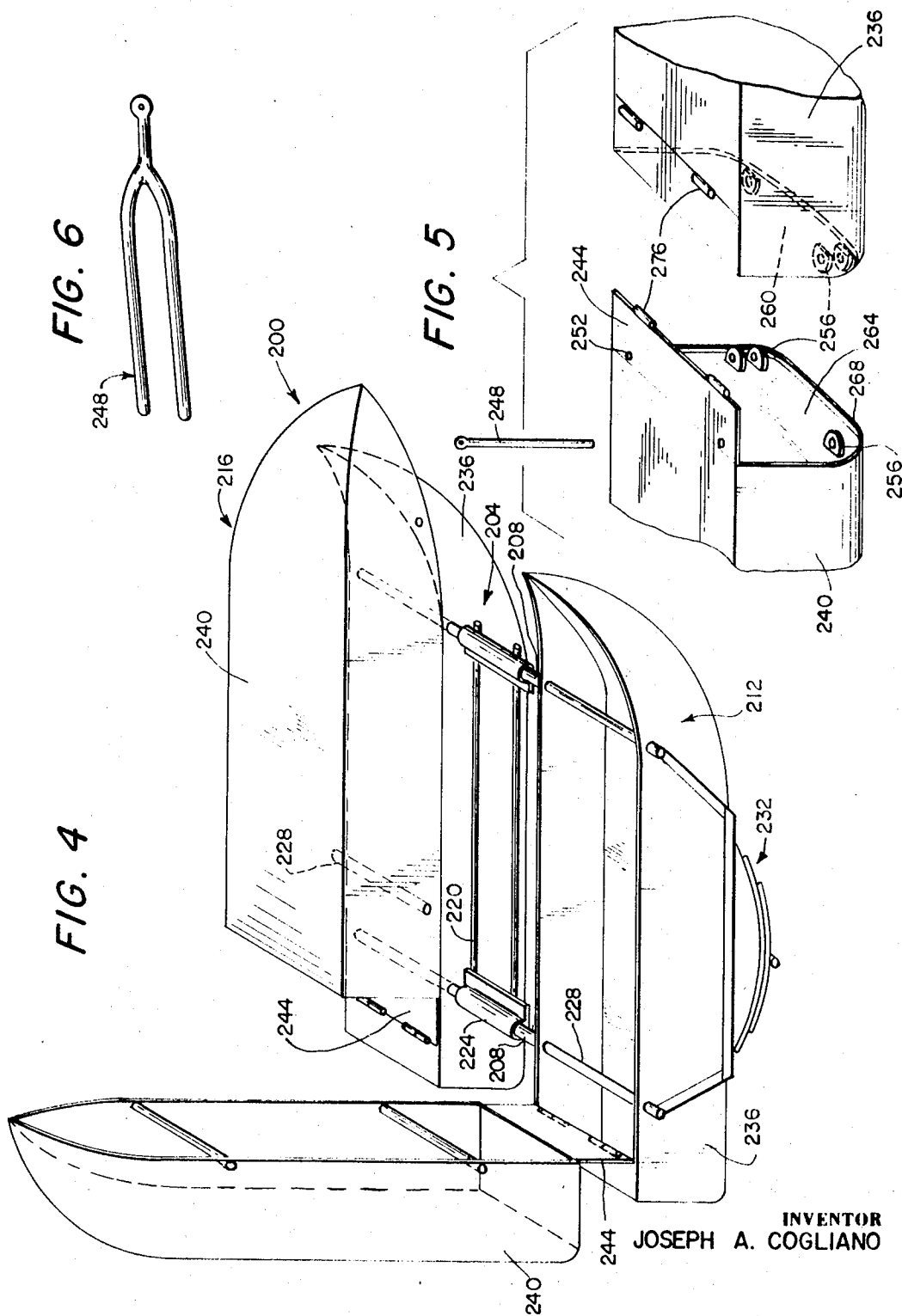
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CATAMARAN

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3 Sheets-Sheet 2



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CATAMARAN

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3 Sheets-Sheet 3

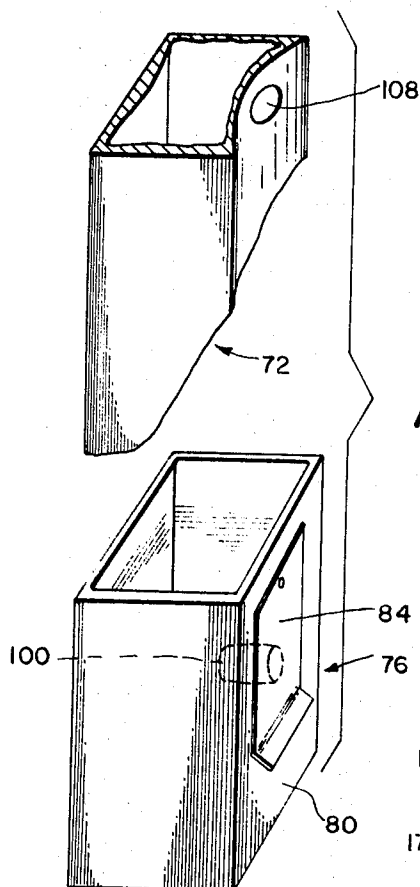


FIG. 9

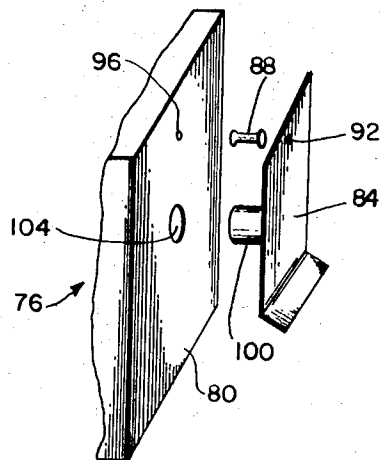


FIG. 10

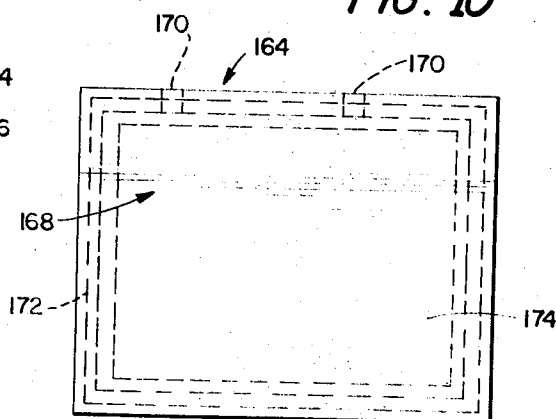


FIG. 7

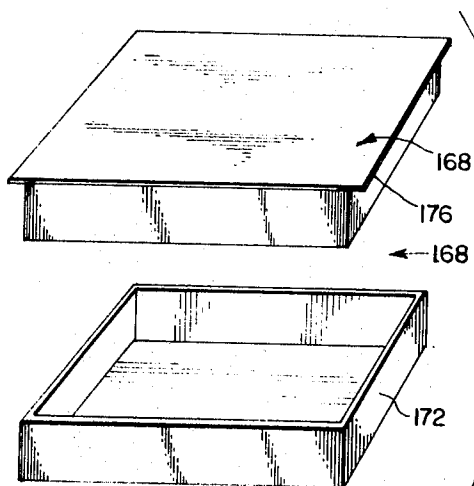


FIG. 8

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3,613,136

CATAMARAN

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12 Claims

ABSTRACT OF THE DISCLOSURE

A catamaran is disclosed which can be converted into a trailer. The catamaran includes a central support unit which telescopes, two cross members which telescope and which are attached to the central support unit, and two boat units which are formed of two sections, each of which is attached to one of the cross members. One of the boat sections of each boat unit is folded over on the other boat.

BACKGROUND OF THE INVENTION

(1) Objects

An object of this invention is to provide a basic catamaran assemblage which can be easily and quickly converted into a trailer. Other important objects and advantageous features of this invention will be apparent from the following description, accompanying drawings and claims.

(2) Prior art

Boats consisting of several sections are well-known, see U.S. Pat. No. 2,879,525. Boats of that type are arranged in U.S. Pat. No. 2,460,935 so that the two boat sections are hinged upon each other and the back section can be swung up on top of the front section. Wheel arrangements are located on the boat in such a manner that when the boat is in the normal position, the wheels are in position alongside of the boat—the wheels are in the water when the boat is in the water. When the back boat section is swung up on top of the front boat section, the wheels protrude below the bottom boat section, forming a trailer.

Catamarans that are sectional are shown in U.S. Pat. No. 2,745,118. Those catamarans are formed from two inflatable flexible pontoons and a deck. The deck is constructed so that when the flexible pontoons are deflated and removed the deck can be folded into two parts.

U.S. Pat. No. 3,061,845 discloses a catamaran that can be collapsed and converted into a trailer. The two boat portions of the catamaran have two segments that can be folded one on top of the other. The boat portions are attached by two cross bars to a central bar. A tube is mounted on a portion of the central bar. That tube is pivotally attached to two sets of intersecting bars. The upper end of each of those bars is attached across the top of the front segments of the boats, pivotal on the inner side point of attachment. Wheels are attached to the tube. In water use the catamaran is arranged so that the wheels are in the water (between the two boat portions). When the catamaran is placed in the trailer form, the intersecting bars are pivoted upwards so that the boat portions segments are pulled inside of and above the wheels. The two cross bars must be removed at that point. The central bar is removed. The back boat segments can then be folded over onto the top of the front boat segments.

BROAD DESCRIPTION OF THE INVENTION

The catamaran of this invention includes a centrally-located longitudinally-elongated unit which contains at least one member which has two telescoping parts. Elongated cross members are affixed to the centrally-located

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longitudinally-elongated unit. Two boats are attached to cross members in a manner which allows them to be slid towards and away from the centrally-located longitudinally-elongated unit. A motor can be mounted on the catamaran to propel it. The trailer form of the catamaran is formed by moving the boat inwardly, loosening the appropriate elongated cross members, folding one set of boat units over the other and telescoping the telescoping member of the centrally-located unit. Wheel assemblies are mounted in a manner to hold the catamaran off the ground. When the catamaran is in the non-trailer form, the wheel assemblies are mounted in a manner that keeps them out of the water.

The catamaran of this invention is easy and economical to construct, easy to operate, and can be easily converted into a trailer form which can be towed on the highway because it has been reduced in width to the legally required width.

DETAILED DESCRIPTION OF THE INVENTION

The accompanying drawings illustrate several of the embodiments of this invention. In such drawings:

FIG. 1 is a modified top perspective view, partially separated, of the catamaran of this invention;

FIG. 2 is a partial side view, partially cut away, of the trailer form of the catamaran;

FIG. 3 is a partial front view of the trailer form of the catamaran;

FIG. 4 is a partial top perspective view of another form of the catamaran (trailer form) of this invention;

FIG. 5 is a partial top perspective view of one of the boats of the catamaran of FIG. 4;

FIG. 6 is a top perspective view of a trailer hitch used in conjunction with the trailer form of the catamaran of FIG. 4;

FIG. 7 is a top view of a box deck used in this invention;

FIG. 8 is a top perspective view, separated, of the box deck of FIG. 7;

FIG. 9 is a side perspective view, partially cut away, of a railing holder of this invention; and

FIG. 10 is a separated view of the railing holder of FIG. 9.

FIG. 1, the numeral 4 represents the entire catamaran in the non-trailer configuration. Catamaran 4 is the preferred embodiment of my invention. Center portion 8 includes two telescoping bars 12, each of which are constructed from outer hollow bar 16 and inner bar 20 that slides or telescopes in outer bar 16. The cross section of bars 16 and 20 can be any shape, e.g., circular, square, etc., which allows bar 20 to telescope in bar 16. The end of bars 16 towards the front of catamaran 4 are terminated in Y-shaped trailer hitch 24. (If desired, a trailer hitch can be mounted, permanently or temporarily, on the other end of center portion 8 in place of trailer hitch 24.) Outer bars 16 contain holes 28 and inner bars 20 contain holes 32, through which pins, etc., can be inserted to hold bars 16 and 20 in the extended and non-extended positions (as desired).

Cross bars 36 and 40 are attached to outer bars 16. Cross bars 36 and 40 can be temporarily attached, e.g., bolts inserted through holes in cross bars 36 and 40 and outer bars 16, or be permanently attached, e.g., welded. Cross bars 44 and 48 are temporarily attached to inner bars 20 by means of bolts (utilizing holes in inner bars 20 and cross bars 44 and 48).

Boats 52 and 56 are attached to the central portion of catamaran 4 by inserting cross bars 36, 40, 44 and 48 into tubes 60, which are mounted crosswise in the upper part of boats 52 and 56. Boats 52 and 56 are adjustable in relationship with the central portion of catamaran 4 by sliding along the cross bars. Boats 52 and 56 can be fixed

in one place by any convenient means, such as, pins or bolts in matching holes in tubes 60 and the cross bar. Boats 52 and 56 are shown in extended positions in FIG. 1. Boats 52 and 56 are similar in construction, so only boat 56 will be described in detail. Boat 56 has two portions, front portion 64 and back portion 68, which are preferably hinged (hinges 74) so that front portion 64 can be swung over on top of back portion 68 (see FIG. 2). When boat 52 is in the extended position (as in FIG. 1) front portion 64 and back portion 68 can be fixed in position by any convenient method, e.g., a bolt attached to both portions on their bottom side. Boat portions 64 and 68 do not have to be hinged.

Railings 72 can be placed around catamaran 4 by inserting railings 72 in rail holders 76. Railings 72 can be seen in FIG. 2. Holders 76 are shown in FIGS. 9 and 10. Holders 76 include box 80, spring piece 84, which is affixed to box 80 by means of pin 88 in holes 92 and 96. Pin 100 fits through hole 104 in box 80 and hole 108 in the bottom portion of railing 72. Box 80 is open on the top and bottom.

Box 112 (see FIG. 2) has two sections, top section 116 and bottom section 120. Top section 116 and bottom section 120 fit onto catamaran 4 in the manner shown in FIG. 1 (as dotted lines) to form a deck over the center part. Center portion 8, the boat and the cross bars serve as a support for boxes 116 and 120. Box sections 116 and 120 are detachably affixed to boats 52 and 56 by any convenient means, such as the bolting system 124 shown in FIG. 1.

Motor mount 128 is attached to bars 132 which are affixed on the back under portion of outer bars 16. A conventional outboard motor is affixed to motor mount 128 and is a pivotal unit which serves as a rudder for catamaran 4. The catamaran can be propelled by means other than an outboard motor, for example, it can be propelled manually by means of oars, paddles, etc., or propelled by means of a sail or sails or propelled by means of an inboard motor, etc. Also, the catamaran can be propelled by motor-driven fan means such as that used in swamp boats. The motor and fan would most likely be mounted on cross bar 40 and the back portion of outer bars 16. The sail, if used, could be mounted on the deck or inserted through a hole in the deck and mounted on center portion 8.

Each boat portion of catamaran 4 can be a canoe, pontoon, etc. Each boat portion of catamaran 4 can be enclosed on top or left open, partially or completely. Each boat portion of catamaran 4 can be divided into several compartments and each compartment can contain an inflated balloon-like unit, or can be filled with foam (e.g., polyurethane foam, or so forth). See FIG. 1 for optional box 136 in boat portion 68. Box 136 can be used to store items, as a refrigerator, to hold ballast, etc.

Wheel unit 140 includes wheel 144 rotably affixed on springs 148 which are affixed to support rod 152. Support rod 152 is bent on each end and can be detachably affixed in the ends of tubes 60. In FIG. 1 wheel unit 140 (only one of the two used are shown) is mounted upside down in the center two tubes 60. This allows the wheel units to be carried on the catamaran when it is being used as a boat without the wheel units (or wheels) being in the water.

When catamaran 4 is being transported, etc., it forms into a trailer which can be hauled on the highways. FIGS. 2 and 3 illustrate the trailer form. FIG. 3 is a front view of the trailer form of catamaran 4 (minus inner bars 20 and trailer hitch 24) and FIG. 2 is a side view of the trailer form. Cross members 44 and 48 are detached from bar 20. Railings 72 are removed from boat portions 64 and 68. Box 112 (sections 116 and 120) are removed and put together as a closed box. Each wheel unit 144 is turned rightside up and the ends of support rod 152 are inserted in the ends of both of tubes 60 in one of boat portions 68 (see FIG. 2). Boats 52 and 56 are slid in-

wards as far as they will be on the cross members and detachably affixed thereon. Boat portions 64 are swung over so that they lay on boat portions 68 (see FIG. 2). Box 112 is placed on top of boat portions 64. Two of the railings 72 are inserted down through rail holders 156 (on box 112) and rail holders 76 on boat portions 64, and are affixed in rail holders 76 on boat portions 68. Inner bars 20 are telescoped in (as in FIG. 2) and affixed in place. The trailer is in a form to be transported on a highway, etc.

To stabilize the trailer, stabilizing bar 160 can be affixed to wheel units 140 as shown in FIG. 3.

Another form of the two-piece box used as the deck is shown in FIGS. 7 and 8. Box 164 can be used exactly as box 112. Box 164 has two sections, top section 168 and bottom section 172. Top section 168 has two parts which are hinged together (see hinge 170). Lip 176 of top 174 of top box section 168 keeps rain out of the box when catamaran 4 is in the trailer form.

Supporting structures can be placed on the top of railings 72 so that a weather covering, such as canvas top, can be used.

Catamaran 4 has the cross bars sliding in tubes 60 in boats 52 and 56, but other arrangements can be used. The cross bars themselves can be set up as telescoping units that allow boats 52 and 56 to be moved in or out without the cross bars actually moving in tubes 60. Tubes 60 themselves can be similarly set up as telescoping units.

The various structural parts of the catamaran can be constructed of any suitable material, e.g., stainless steel, plastics, copper, etc. which is resistant to the weather and conditions of exposure to boat travel on open bodies of water (fresh and salt) and has the necessary structural strength, but marine aluminum is the preferred construction material.

The beam-to-length ratio makes the catamaran of this invention very stable when under power, particularly sail power, so that to capsize is nearly impossible. Also the great beam provides far greater useful space and carrying capacity than conventional craft of similar length.

Another form of the catamaran is shown in FIG. 4, where numeral 200 represents the entire catamaran. The parts of catamaran 200 which differ from catamaran 4 are shown. Catamaran 200 includes center portion 204, cross bars 208 and boats 212 and 216. Boats 212 and 216 are canoe shaped or are any craft having a raised prow. Center portion 204 includes two telescoping bars, of which only outer hollow bar 220 is shown, and two raised cross bars 224. Cross bars 208 are affixed to raised cross bars 224 and are slideably mounted in tubes 228 (but can be affixed in the in or out position). Wheel unit 232 is identical to wheel unit 140 and is mounted as shown in FIG. 4 when catamaran 200 is in the trailer form. Boat 212 is identical to boat 216. Boats 212 and 216 contain boat sections 236 and 240. Boat section 240 contains lip 244 which is attached to boat section 236 in an overlapping manner as shown in FIG. 4 so that boat unit 240 can be placed on top of boat unit 236 with the boat tops offset. FIG. 6 shows trailer hitch 248 which can be mounted on the center portion 204 by insertion in outer hollow bars 220.

FIG. 5 illustrates how boat units 236 and 240 can be affixed in the non-trailer form. Rods 248 are inserted through holes 252 in lip 244 and the holes in rod holders 256. Surface 260 of boat unit 236 and surface 264 of boat unit 240 are recessed to allow a tight fitting of rims 268 and 272 when rods 248 are in place. Rod holders 256 are mounted on surfaces 260 and 264 as shown in FIG. 5. (Hinge portions 276 have a pin placed through them. That allows the boat units to be swiveled in relation to each other and gives stability to the boat when the catamaran is in the non-trailer form.)

Wheel units 140 of FIG. 1 can be varied; for example, the units can be put into the up and down positions (or trailer and non-trailer positions) by being made pivotable at the ends of support rods 152. Or, wheel units 140 can

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be swung up or down into position (and inserted) around one end of support rods 152.

In the various embodiments of this invention, the center deck serves as seats for the catamaran occupants. Special seats can be attached to the deck.

The embodiment of the catamaran in FIG. 4 has the boat portions offset by means of lip 244 to allow the prows to miss each other when the catamaran is in the trailer form. The same object can be achieved in other ways, for example, the boat portions can be of different lengths or the walls of each boat portion can be constructed on a slant so that lip 244 is not necessary.

What is claimed:

1. A catamaran which can be converted into a trailer form which comprises:

- (a) centrally-located longitudinally-elongated unit which is comprised of at least one member which is comprised of at least two portions which telescope, one portion in the other portion;
- (b) at least one elongated cross member which is affixed to said portion of said longitudinally-elongated unit (a) which serves as the outer part of said telescoping unit (a); (c) at least one elongated cross member which is affixed to said portion of said longitudinally-elongated unit (a) which serves as the inner part of said telescoping unit (a), when said inner telescoping portion is in the extended position;
- (d) two boats, each boat which is affixed to each end of each of elongated cross members (b) and (c) in a manner that each of said boats (d) are movable in relationship to each other and which is comprised of two segments, the front segment which can be placed on the back segment when said catamaran is in said trailer form; and
- (e) two wheel assemblies, each of which is affixed, when said catamaran is in said trailer form, to a segment of one of said boats (d) in a manner holding the remainder of said catamaran off of the surface of the earth and which is affixed, when said catamaran is in the non-trailer form, to said boats (d) in a manner where said boats of said catamaran contact the surface of the earth.

2. A catamaran as described in claim 1 wherein both of said segments of each boat (d) are affixed to each other in a manner where one of said segments can be swiveled over to a position above the other segment, the top portion of each of said segment facing the top portion of the other segment.

3. A catamaran as described in claim 1 wherein a motor mount is attached to the back end of said centrally-located longitudinally-elongated unit (a) and wherein an outboard motor is affixed to said motor mount.

4. A catamaran as described in claim 1 wherein said centrally-located longitudinally-elongated unit (a) is comprised of two longitudinally elongated members, each of which is comprised of two portions which telescope, the front portion in the back hollow portion, the front end

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of said front portions of said longitudinally-elongated members being inwardly shaped so that they touch and are permanently affixed to each other.

5. A catamaran as described in claim 1 wherein said elongated cross members (b) and (c) are comprised of an outer hollow portion, which is affixed to said centrally-located longitudinally-elongated unit, and of two inner portions, each of which is located in one end of said outer portion, each of which are attached to one of said boats when said catamaran is in said non-trailer form and which can be telescoped in said outer portion.

6. A catamaran as described in claim 1 wherein said catamaran contains a deck, said deck being two box portions, one box portion fitting inside of said other box portion and capable as such of being mounted on top of said boats when said catamaran is in the trailer form, which are mounted on the top of said catamaran with the main surface of each box portion facing upwards and with one box portion affixed to the back portion of said centrally-located longitudinally-elongated unit (b) and the other box portion affixed to the front portion of said centrally-located longitudinally-elongated unit (b).

7. A catamaran as described in claim 1 wherein a railing is mounted around most of the top portion of said catamaran.

8. A catamaran as described in claim 1 wherein each segment of said boats (d) are at least partially foam filled.

9. A catamaran as described in claim 1 wherein said boats are pontoons.

10. A catamaran as described in claim 1 wherein at least one segment of each of said boats contains a covered box.

11. A catamaran as described in claim 1 wherein each of said boats contains as many hollow cross members as there are elongated cross members (b) and (c) and wherein elongated members are slidably located in said hollow cross members and one end of which are attached to said elongated cross members (b) and (c).

12. A catamaran as described in claim 1 wherein a trailer hitch is attached to one of the ends of said centrally-located longitudinally-elongated unit (a).

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