

Dec. 27, 1966

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3,294,055

WATERCRAFT

Filed Jan. 15, 1965

2 Sheets-Sheet 1

FIG. 1

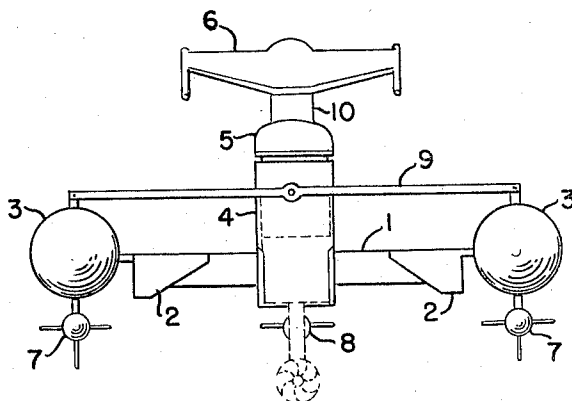
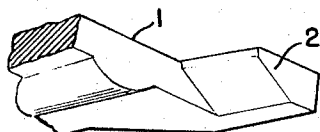


FIG. 2

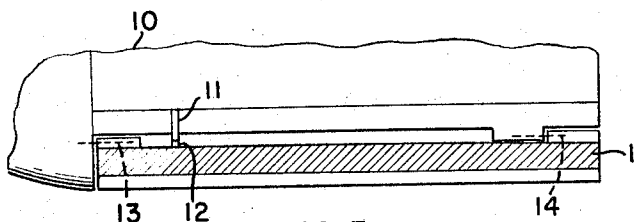


FIG. 3

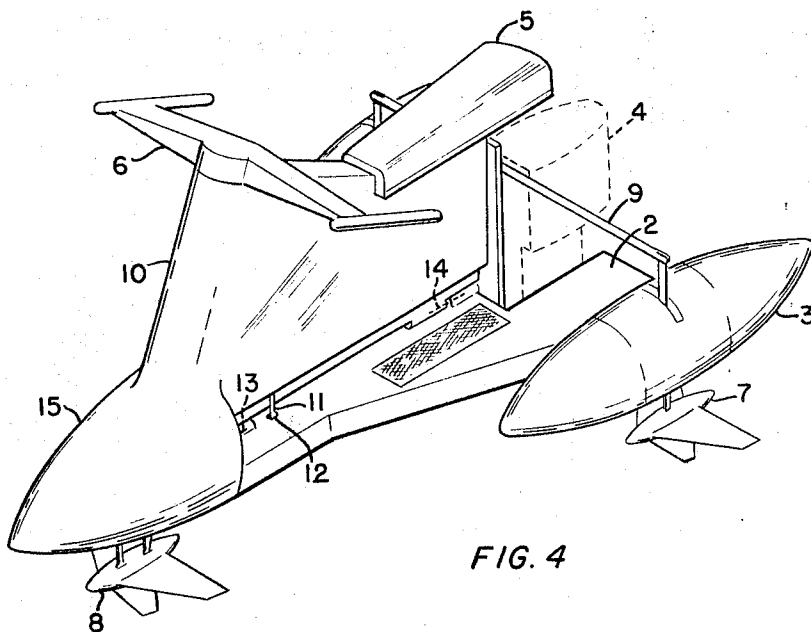


FIG. 4

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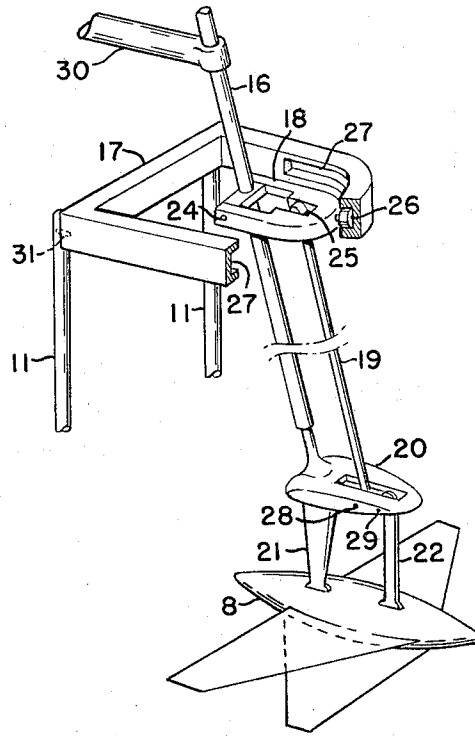
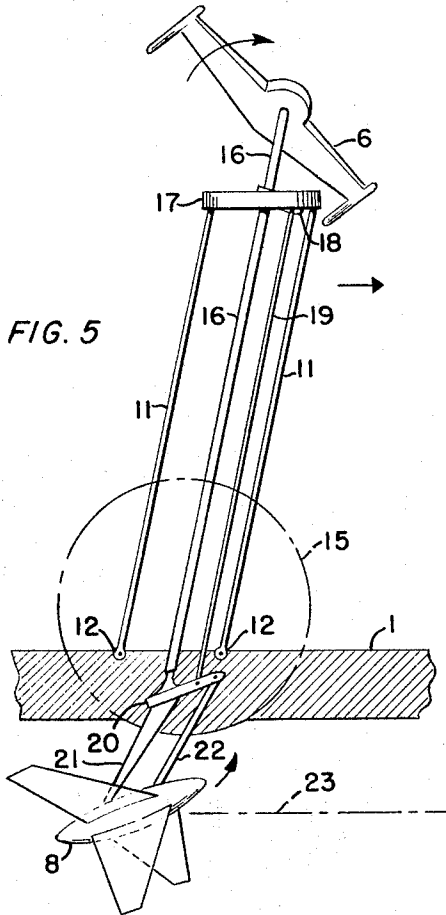


FIG. 6

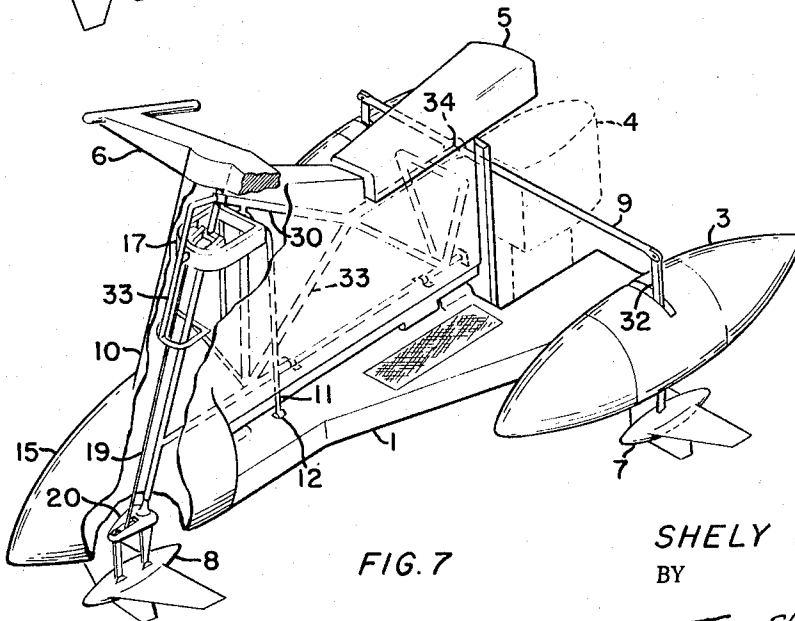


FIG. 7

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WATERCRAFT

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12 Claims. (Cl. 115-70)

My invention relates to a watercraft, and more particularly of a pontoon type provided with hydrofoils for leaning the craft in the manner of a motorcycle.

A principal object of my invention is to provide a watercraft on which the operator can easily maintain balance even while negotiating sharp turns at high speeds in rough water.

A further object is to provide such a watercraft which floats while stationary and which will partially rise out of the water when in motion.

A further object is to provide a watercraft which is self-propelled by a conventional outboard motor.

A further object is to provide such a craft which is safe and entertaining to persons of all ages or agility.

A further object is to provide all the advantages of a motorcycle to a watercraft.

A still further object is to provide a watercraft which is easy and inexpensive to manufacture and maintain.

Other objects and advantages of the present invention will become apparent as the following description proceeds taken in connection with the accompanying drawing, in which:

FIGURE 1 is a fragmentary view of the horizontal member.

FIGURE 2 is a view from the rear of the craft.

FIGURE 3 is a detail of the hinge arrangement between the horizontal member and the body member.

FIGURE 4 is a perspective view of the craft.

FIGURE 5 is a detail showing the operation of the steering mechanism.

FIGURE 6 is a detail of the steering arrangement.

FIGURE 7 is a perspective view showing the steering arrangement with the framework of the body member.

It is to be understood that the specific drawing illustrations provided are supplied primarily to comply with the requirements of 35 U.S.C. 112 and that the invention is susceptible to other embodiments that will be obvious to those skilled in the art. Consequently the appended claims are to be construed as broadly as the relevant prior art will permit.

Referring to the drawing showing the preferred structure and in which like numbers represent like parts the number 1 represents a horizontal member which is substantially triangular in shape. It and other parts of the craft may be formed of solid material or may be a framework covered by suitable materials. Suitable materials for construction of the craft are those which combine strength, lightness, economy and resistance to weather and water. Specific materials may include marine woods; certain plastics, for example fiberglass and certain metals, especially those commonly used for aircraft such as aluminum and magnesium alloys. Such member is of sufficient size to function as a stand platform for the rider of the craft. It is preferably recessed in the mid area on the rear side thereof to have secured thereto propulsion means 4. Such propulsion means is preferably a conventional outboard motor. Member 1 at all times remains on a substantially parallel spaced plane with the surface of the water. Two rear stabilizer portions 2 are formed on each side of motor 4.

Along the mid-section of member 1 is mounted a center body member 10. It is operatively associated with the horizontal member at substantially right angles thereto. Hinge means 13 and 14 are bolts or pins permitting

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the angle between the horizontal member and the body member to be varied by the rider.

A seat 5 is mounted on the body member and manual controls 6, preferably handlebars, are positioned for easy reach by a person occupying the seat. The lower front portion of the body member is bullet shaped and is hollowed out to serve as a pontoon in which the front part of the craft floats when it is at rest. It also serves as a housing for part of the steering mechanism as shown in FIG. 7. The pontoon is integral with the body. Said body portion may serve as a housing for preferably metal framing 30 and 33 which functions as support members.

A plurality of water contacting means, preferably two in number are provided in the rear extremity of horizontal member 1 in outrigger fashion. Said means are preferably elliptical shaped pontoons 3 with hydrofoils 7 associated therewith.

The hydrofoils are preferably made to tilt in unison with the body portion by transverse connecting rod 9 and vertical rod 32 which operatively join the body member with the hydrofoil. Rod 9 may be tubular or solid and preferably has an orifice at the mid-point thereof to operatively engage bolt 34. Bolt 34 is formed as an extension of frame 33.

A frontal water contacting means 8 is preferably single as illustrated. It comprises the pontoon portion 15 of the body and hydrofoil 8 in association therewith.

A unique steering mechanism and arrangement is achieved by a substantially vertical steering column with upper section 16 secured to handlebar 6 and lower section 21 partially connected thereon by coupling arm 20. A D-shaped guide member 17 surrounds the upper portion of the steering column as shown in FIG. 6. The arcuate portion 27 thereof has a track portion for guide follower 26 mounted therein. Said follower is integral with U-shaped connecting member 18 which is mounted on column 16 by connecting bar and pins 24 at the ends thereof. Linkage 11 connects the D-shaped member to the horizontal member as dual simple connecting rods with pins or axles 12 at the lower end thereof and pin 31 at the upper end thereof. Upper frontal connecting rod 19 is anterior to the upper section of the steering column 16 and parallel to it. It is preferably a simple connecting rod connected by pin 25 to the U-shaped member at the upper end and by pin 28 to the coupling arm at the lower end. A lower frontal connecting rod 22 is parallel to lower column section 21 and anterior thereto. It is connected to the coupling arm 20 by pin 29 with the opposite end pivotally connected to hydrofoil 8 as shown.

The operation of the device is as follows:

Rider places feet on member 1 and uses seat and handlebars in obvious manner. If a turn is made rider's weight is substantially on both feet whereby member 1 remains parallel to the surface of the water 23 shown in FIG. 5. By manual force the rider tilts the entire craft, member 1 and attached pontoons 3 excepted. In this manner of placing rider's weight on his feet and turning and tilting the handlebars I have created the motorcycle turn on water.

Thusly body member 10 is at an angle other than 90 degrees with member 1. Because of the connecting links rear hydrofoils 7 are in parallel unison with each other and form the same angle with the water as member 10. Even though steering mechanism turns, front hydrofoil 8 will tilt correspondingly with the rear hydrofoils and the craft will lean to oppose centrifugal force.

Although preferred embodiments of the device are as illustrated and described, it is to be understood that further modifications and changes in the details of construc-

tion that may be resorted to will fall within the scope of the invention as claimed.

What is claimed is:

1. In a steering mechanism for watercraft:

- (1) a substantially vertical steering column,
- (2) manual controls secured to the upper end thereof,
- (3) water contacting means secured at the opposite end thereof,
- (4) a D-shaped guide member surrounding said column,
- (5) a substantially horizontal member,
- (6) linkage connecting the D-shaped member to the horizontal member whereby said members are in fixed parallel space relationship,
- (7) a support member in operative engagement with the guide member,
- (8) a tract portion provided in the guide member,
- (9) a follower operatively mounted in said tract portion,
- (10) a U-shaped connecting member to which the follower is affixed at the mid-outer surface of its arcuate portion,
- (11) a bar mounted on the steering column at right angles thereto and pivotally connected at the ends thereof to the ends of the U-shaped connecting member,
- (12) a coupling arm pivotally secured to lower extremity of steering column,
- (13) an upper frontal connecting rod pivotally connecting the coupling arm to the U-shaped member,
- (14) a frontal water contacting means,
- (15) a lower frontal connecting rod pivotally engaging the coupling arm to the frontal water contacting means.

2. A watercraft comprising a substantially disposed horizontal member, a body member supported by said horizontal member, hinge means operatively securing the horizontal member to the body member, said horizontal member having forward and rear end portions, water contacting means at said forward and rear end portions, steering means for guiding the watercraft, first coupling means connecting the water contacting means at said rear end portion to said body member for movement about a substantially horizontal axis, and second coupling connecting the water contacting means at said forward end portion to said body member through said steering means for movement of the water contacting means at said forward end portion in planes angularly related to said body member.

3. The watercraft as defined in claim 2 wherein said second coupling means is effective for producing pivotal movement of the water contacting means at said forward end portion about an axis disposed in a horizontal plane.

4. The watercraft as defined in claim 2 wherein said second coupling means is effective for producing turning movement of the water contacting means at said forward end portion in a generally horizontal plane.

5. The watercraft as defined in claim 2 wherein said second coupling means is effective for producing move-

ment of the water contacting means at said forward end portion in forward and rearward directions relative to said body member.

6. The watercraft as defined in claim 2 wherein said second coupling means is effective for producing both turning movement of the water contacting means at said forward end portion in a generally horizontal plane and pivotal movement of said last-mentioned water contacting means about an axis disposed in a horizontal plane.

7. The watercraft as defined in claim 2 wherein the water contacting means at said rear end portion is floatation means immovably fixedly secured to opposite longitudinal sides of said horizontal member.

8. The watercraft as defined in claim 2 wherein said water contacting means at said forward end portion is disposed beneath said horizontal member, and said steering means passes through said forward end portion.

9. The watercraft as defined in claim 2 wherein said steering means includes a generally upstanding steering column, means pivotally mounting said steering column to said horizontal member, steering member means articulately coupling said steering member to said steering column, and means articulately coupling said steering member to said water contacting means at said forward end portion.

10. The watercraft as defined in claim 9 wherein said first-mentioned articulate coupling means includes first and second cooperative means defined by said steering member and said steering column, one of said cooperative means being a generally curved track, and the other of said cooperative means being a follower guided by said curved track.

11. A watercraft comprising means for supporting an occupant, said supporting means having forward and rear portions, water contacting hydrofoil means at one of said portions, steering means for guiding the watercraft, and coupling means connecting said steering means to said hydrofoil means for movement of the latter-mentioned means in (1) a generally horizontal plane, (2) in directions forwardly and rearwardly relative to said supporting means, and (3) for pivotal movement in a vertical plane.

12. The watercraft as defined in claim 11 including a body member, hinge means operatively securing the supporting means to said body member, additional hydrofoil means, and means coupling said first-mentioned hydrofoil means to said additional hydrofoil means through said body member.

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