United States Patent [19]

Watkins

[11] **3,726,249**

[45] **Apr. 10, 1973**

[54] **WATER CRAFT**

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[52] **U.S. Cl.** **115/70**
[51] **Int. Cl.** **B63b 35/00**
[58] **Field of Search** 115/70

[56] **References Cited**

UNITED STATES PATENTS

3,158,129	11/1964	Mauer	115/70
3,483,844	12/1969	Trautwein	115/70
3,442,246	5/1969	Paolone	115/70

Primary Examiner—Trygve M. Blix
Attorney—James R. Haller

[57] **ABSTRACT**

A self-propelled water craft including a unitary water-planing board, a unitary buoyant body which includes a seat and which is spacedly connected to the planing board so as to resist movement tending to displace the alignment of the longitudinal axis of the board relative to the body, and propulsion means for propelling the craft.

5 Claims, 6 Drawing Figures

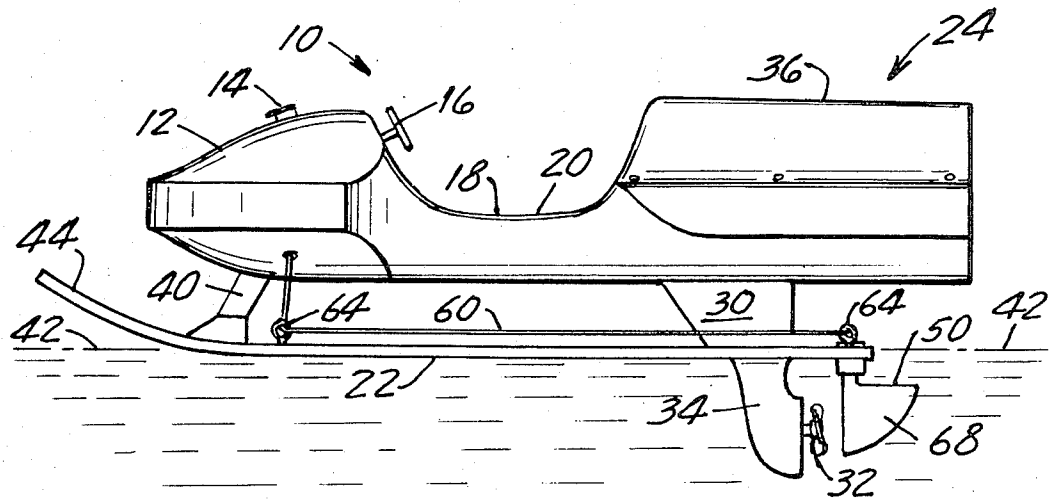


FIG. 1

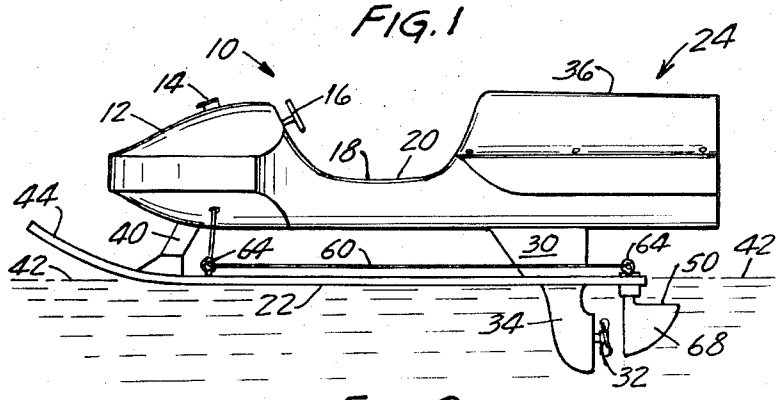


FIG. 3

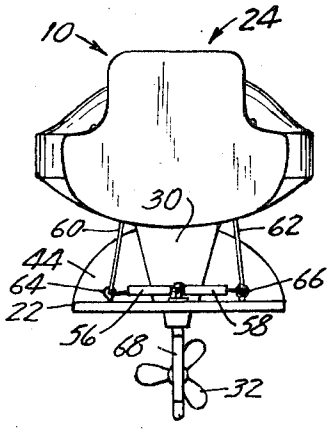


FIG. 2

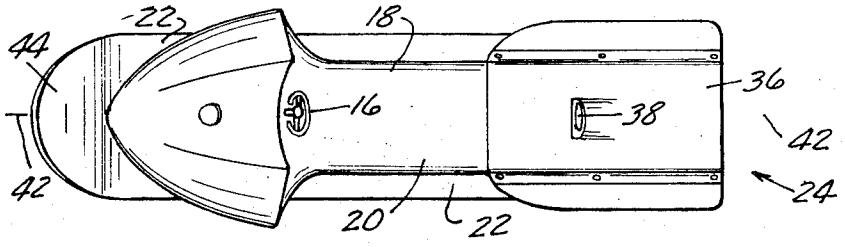


FIG. 4

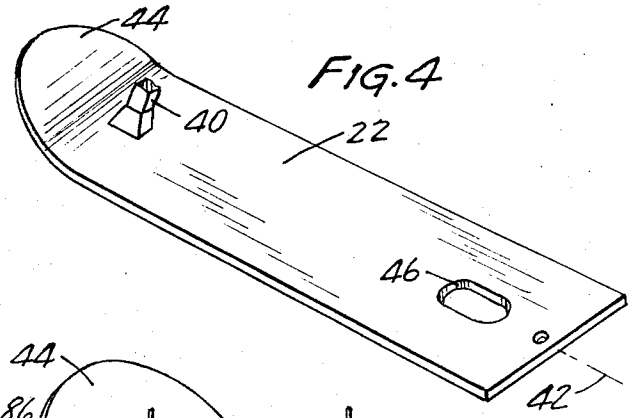
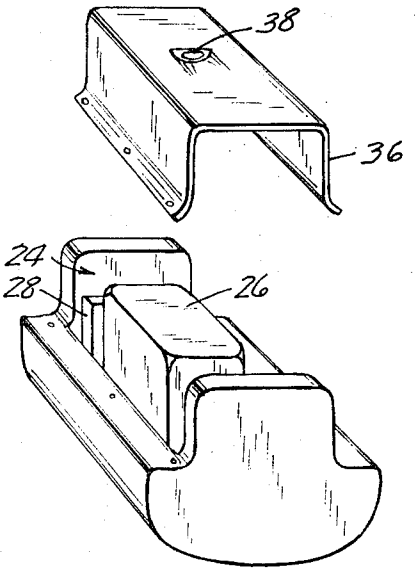


FIG. 5



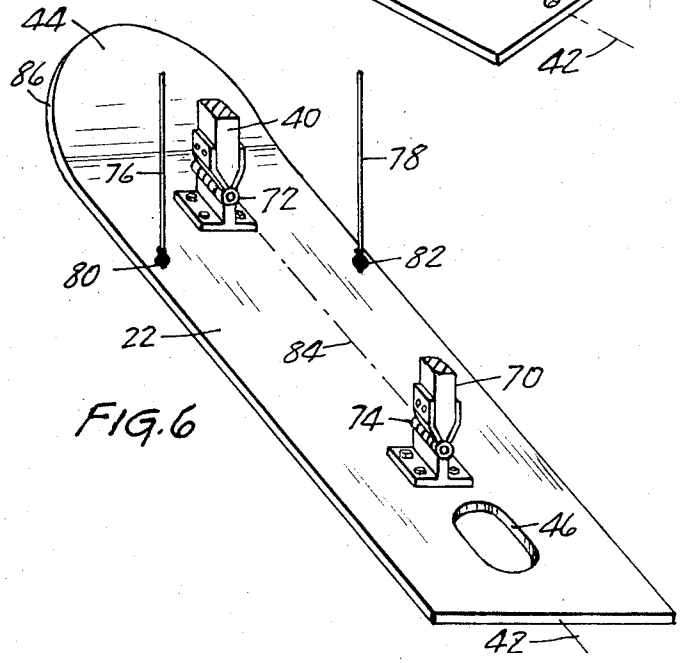


FIG. 6

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WATER CRAFT

The present invention relates to self-propelled water craft adapted to plane upon the surface of water.

The invigorating and physically demanding sport of water skiing has long enjoyed widespread popularity. Because of the strenuous physical demands of conventional water skiing, however, attempts have been made to provide water skiing equipment requiring a lesser degree of strength and skill. The resulting equipment has included a towable, "sit-down" water ski of the type described in U.S. Pat. No. 2,865,032. Further efforts by the art have provided motorized "sit-down" water skis of the types described in U.S. Pat. Nos. 3,158,129 and 3,394,673.

The resulting "self-propelled" water craft, however, have been rather complex machines requiring skis which have been designed to pivot about a transverse horizontal axis, presumably in an attempt to provide means to imitate the changing position of water skis worn by a water skier as the skier is pulled from a rest position in the water into the usual water-skiing position. The craft of U.S. Pat. No. 3,158,129, for example, utilizes two skis in tandem, the forward ski being capable of movement about both a transverse horizontal axis and a vertical axis. U.S. Pat. No. 3,394,673 depicts a craft having two skis side by side, each ski being pivotable about a transverse horizontal axis extending through the body of the craft.

The mechanical complexity of the above-described self-propelled craft (including the disclosed propulsion systems) contributes not only to high initial cost but also to the high cost of maintaining and servicing such craft.

It is an object of the present invention to provide a relatively inexpensive self-propelled water craft which is uniquely simple in design and operation.

Briefly, the water craft of the present invention comprises a unitary, buoyant body having a nose portion, a seat portion disposed rearwardly of the nose portion, and a power source housing disposed rearwardly of the seat portion. A unitary water-planing board is disposed beneath the body and is spacedly connected thereto. The board has a longitudinal axis substantially parallel to and aligned with the body to generally define the direction of travel of the craft, and has an up-turned leading edge. The board is connected to the body by connecting means which rigidly restrain the board from movement tending to change the alignment of the longitudinal axis of the board relative to the body; e.g., the board is rigidly prevented from pivoting about a transverse horizontal axis or a vertical axis. The craft additionally comprises propulsion means including a power source mounted in the power source housing of the body.

FIGS. 1, 2 and 3 represent side, top and front views respectively of one embodiment of the water craft of the invention.

FIG. 4 is a perspective, broken away view of the planing board, of the craft of FIG. 1.

FIG. 5 is an exploded, perspective view of the rearward section of the craft of FIG. 1, the remainder of the craft being broken away.

FIG. 6 is a perspective view of a portion of the planing board, connecting means and steering control utilized in a preferred embodiment of the invention.

Referring now to the drawing, FIGS. 1–3 depict a unitary, buoyant body **10**, the buoyancy of which body may be afforded by the inclusion therewithin of buoyant, closed-cell polymeric foams or the like. The body preferably includes a reinforced fiberglass shell supported about a light-weight metal or wooden frame. The body has a nose portion **12** which may contain a fuel reservoir accessible through reservoir cap **14**. Also carried by said nose portion is a steering control, shown as steering wheel **16**.

Rearwardly of the nose portion **12** is a seat portion **18**, the transverse width of which is less than that of nose portion **12**, thereby providing "knee room" for the craft operator. The seating surface **20** preferably is lower in height than nose portion **12**, thereby permitting an operator to conveniently grasp the control **16**. The reduced height of the seating surface **20** additionally permits the operator to comfortably and securely rest his feet on the upper surface of the planing board **22**, and also advantageously permits a low center of gravity to be achieved to promote stability especially at slow speeds. The seat portion **18** includes a raised back portion unitary therewith, and separating the seat portion from the subsequently described power source housing **24**.

Rearwardly of the seat portion **18**, but unitary with the body, is a power source housing **24** comprising means defining a cavity adapted to receive a power source **26**. Referring now to FIG. **5**, the power source **26** is exemplified as the engine portion of an outboard motor attached to transom **28** which is part of the housing **24**. As shown in FIG. **1**, the power source housing **24** may, if desired, be provided with a connecting elongated enclosure **30** (hereafter referred to as a "boot") through which the propeller **32** of the motor **24** extends to a position beneath the board **22**. The boot is preferably provided with an inner sealing member such as deformable gasketing (not shown) adapted to seal the inner surface of the boot to the motor extension **34**, thereby preventing water from leaking into the power source housing when the craft is at rest in the water. Referring to FIG. **5**, it will be noted that the power source housing **24** is equipped with a removable cover member **36** having a rearward-facing louvered upper surface (represented by **38**). Removal of the cover **36** affords access to the power source **26** and, in a preferred embodiment, enables the ready removal of an outboard motor from the housing. The buoyant body **10** includes transversely extending members along the length of housing **24** on either side thereof.

A unitary water-planing board **22** is connected beneath the body **10** of the water craft by connecting means represented by strut **40** and boot **30**. As illustrated in FIG. **4**, the board has a longitudinal axis **42** which is substantially aligned with the body **10** to generally define the direction of travel of the water craft. The board **22** is provided with a ski-like upturned leading edge **44** and, in a preferred embodiment, is provided with a centrally located aperture **46** therethrough adjacent the trailing edge **48** of the board. The aperture is of sufficient size to accommodate the passage therethrough of the propeller-bearing extension **34** of an outboard motor. As shown, in the embodiment wherein the board is rigidly restrained from any movement relative to the body, the boot portion **30**

of the power source housing **24** may be a weight-bearing member which serves as one member of said connecting means and which is rigidly connected to the periphery of the aperture **46**.

Disposed rearwardly of the propeller **32**, but in alignment therewith, is a steering deflection plate **50** which is coupled to the rearward portion of the board so as to pivot about a vertical axis **52**. Pivoting of the deflection plate **50** about the vertical axis **52** causes the plate to present a water-engaging surface **68** to the stream of water which is propelled to the rear by the propeller, thereby causing the craft to turn. In the embodiment of FIGS. **1–4**, a T-shaped portion **54** of the deflection plate extends above the board. To the ends **56** and **58** of the T are connected steering wires **60** and **62** which pass by means of pulleys **64** and **66** to the steering control **16**.

A speed control (not shown), such as a conventional throttle extension, may conveniently be mounted on the nose portion of the body in a position easily accessible to the craft operator. A connecting linkage of the type known to the art (e.g., a wire running on pulleys) may be employed to couple the speed control to the power source through the seat portion of the body. Further, for safety reasons it may be desirable to equip the under surface of the planing board with stiff wire netting (not shown) or the like, in position so as to form a rigid, protective open enclosure for the propeller. This feature is especially desired when the craft is to be operated near areas where swimmers are to be found, the protective enclosure serving to prevent a swimmer from accidentally contacting the propeller.

FIG. **6** illustrates a portion of another preferred embodiment of the invention wherein the body and the planing board are joined by connecting means which permits the board to pivot solely about an axis parallel to its longitudinal axis. As illustrated, the planing board **22**, having longitudinal axis **42**, is connected to struts **40** and **70** by hinges **72** and **74**. The upper portions of struts **40** and **70** (shown broken away in FIG. **6**) are rigidly connected to the undersurface of the body, as shown in FIG. **1**. Steering wires **76** and **78** are connected at their lower ends to the board by connectors **80** and **82**, which connectors are preferably located nearer to the edges of the board than to the longitudinal axis **42**. The upper ends of the steering wires (shown broken away) pass into the nose portion of the body and are operatively coupled to the steering control mounted therein so that movement of the steering control causes tension on one or the other of the steering wires, thereby causing the planing board to pivot about the hinge axis **84**. Hinge axis **84**, it will be noted, is parallel to longitudinal axis **42** of the planing board so that movement of the board about axis **84** does not displace longitudinal axis **42** from substantially parallel alignment with the body. Tilting of the board about axis **84** causes one side of the water engaging forward surface **86** of the up-turned leading edge **44** to slice into the water, thereby turning the craft. For example, movement of the steering control so as to place tension on steering wire **78** causes the board to pivot about axis **84**, thereby causing the left-most half of the board to slice more deeply into the water, turning the craft to the left. The so-described pivotal movement of the board provides for smooth, responsive maneuverability of the craft. This embodiment requires no additional steering means of the type shown in FIG. **1**. As previously described, an outboard motor is the preferred means of propulsion for this embodiment, the motor being mounted in the power source housing of the body and having a propeller-bearing extension which passes through aperture **46** of the planing board.

The preferred embodiments of water craft of the invention which have been described are provided for illustrative purposes only, and should not be construed as limiting the spirit and scope of the invention described in the appended claims.

What we claim is:

1. A self-propelled water craft comprising:

a. a buoyant, unitary body having a nose portion, a seat portion disposed rearwardly of said nose portion and having lesser transverse width and height than said nose portion, thereby to permit an operator of said water craft to securely rest his feet on a planing board, and a power source housing disposed rearwardly of said seat portion and including transversely extending members along the length thereof on either side thereof, said seat portion including a raised back portion separating the seat portion from said power source housing;

b. said unitary water-planing board disposed beneath said body and spaced therefrom, said planing board having a longitudinal axis substantially parallel to and aligned with said body to generally define the direction of travel of said water craft, and having an up-turned leading edge;

c. an outboard motor removably mounted in said power source housing, the propeller of said outboard motor extending downwardly through said housing into a position below said water-planing board;

d. connecting means spacedly connecting said board to said body and rigidly restraining said board from movement tending to displace said parallel alignment of said longitudinal axis of said board and said body.

2. The water craft of claim **1** additionally including steering means for steering said craft, said steering means including a movable, water-engaging surface and a steering control mounted in said nose portion of said body and operatively coupled to said steering surface to control the movement thereof.

3. The water craft of claim **1** wherein said connecting means pivotally engages said board so as to permit movement of said board only about an axis parallel to said longitudinal axis, said craft additionally comprising a steering control carried by said nose portion and operatively coupled to said board to control the pivotal movement thereof.

4. The water craft of claim **1** wherein said planing board has an aperture therethrough centrally located adjacent the trailing edge thereof and adapted to receive said propeller therethrough.

5. The water craft of claim **1** wherein said power source housing includes sealing means sealing said housing at the place of extension therethrough of said motor and adapted to prevent water from entering said housing when said craft is at rest in the water.

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