

July 15, 1969

H. PERRIN

3,455,261

KITE BOARD

Filed May 15, 1968

2 Sheets-Sheet 1

FIG. 1.

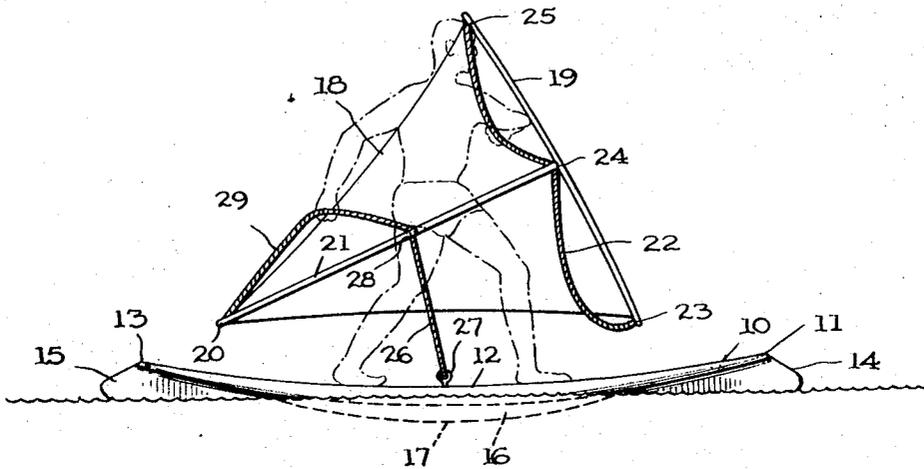
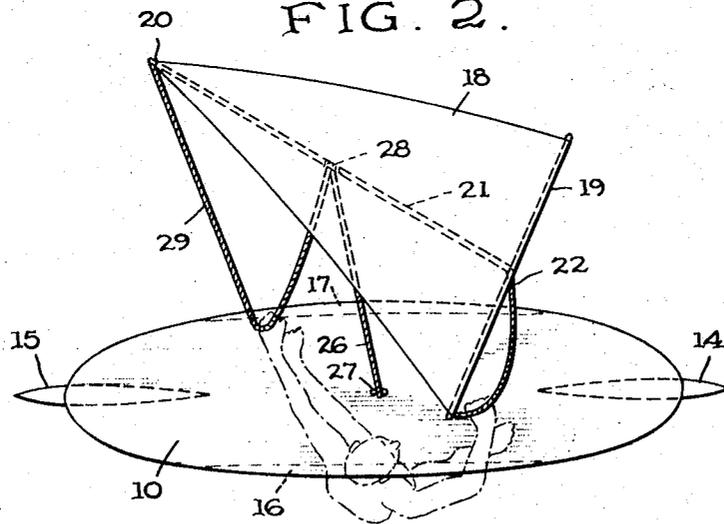


FIG. 2.



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FIG. 3.

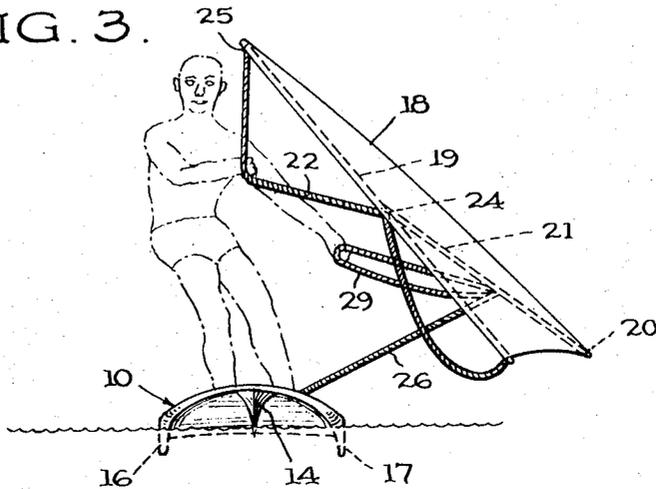


FIG. 4.

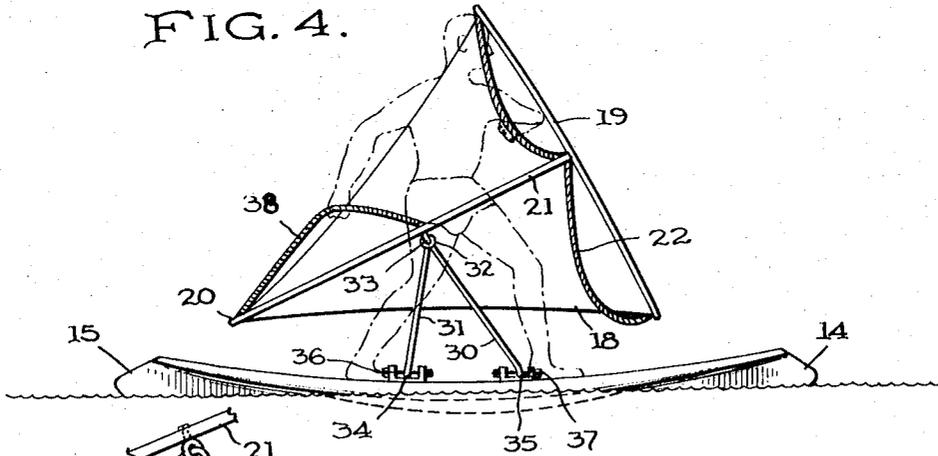
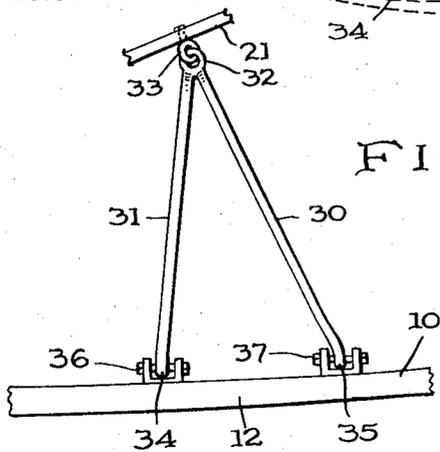


FIG. 5.



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Filed May 15, 1968, Ser. No. 729,206
Int. Cl. B63h 9/04; A63c 15/00
U.S. Cl. 114—39 9 Claims

ABSTRACT OF THE DISCLOSURE

A sailing craft or board comprising a flattened buoyant hull provided with bow, stern and lateral stabilizing skegs and with a triangular sail, controllably affixed to the upper surface of the craft, designed to be held by the occupant.

Background of the invention

This invention is made in the field of buoyant surface craft or small sailing craft designed primarily for operation by one person which are analogous to the well known surf board but are in addition provided with sail means controllably affixed thereto, designed to be manually controlled by the person on the craft.

In the past, various types of surf boards of buoyant nature have been known, designed to be operated by standing or prone operators, which normally are provided with rudder-like, single keel means at their rear extremities to stabilize the board and assist in guiding it.

A number of pertinent prior patents are noted, as follows:

McIntyre Patent No. 1,356,300 of Oct. 19, 1920, discloses a small sailing craft provided with rectangular, lateral stabilizing panels. McIntyre et al. Patent No. 1,670,936 of May 22, 1928, discloses a sailing craft with a flattened hull and a fixed, triangular sail with tiller means at the stern. Christman, Patent No. 3,103,196 discloses a sailing craft with flattened, rectangular hull and elongate lateral stabilizers, plus a fixed sail. Kibby, Patent No. 3,158,882 shows a surf board provided with an outboard motor.

While the above patents disclose somewhat analogous craft none of them disclose the salient novel features of the present invention, as will hereinafter be more clearly defined.

Summary of the invention

The invention broadly relates to buoyant craft of the nature of surf boards, provided with bow and stern controlling and stabilizing skegs and lateral stabilizing skegs and furnished with a triangular sail means flexibly affixed to the upper, center surface of the board designed to be manually held by the operator to adjust the attitude of the sail to the desired course of the board.

It is therefore an object of this invention to provide an improved buoyant hull means, controlled and stabilized bow and stern and stabilized laterally, to which is affixed a sail designed to be held and controlled by the operator to suit the course of the board.

It is a further object of this invention to provide improved controlling and stabilizing structure for such a board.

It is another object of this invention to provide improved sail means therefor and improved means for controllably affixing the sail to the upper surface of the board.

Other and further objects of this invention will become apparent as this specification proceeds.

Brief description of the drawings

Referring to the drawing, FIG. 1 is a side elevational view, partially in phantom, of the board showing the

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stabilizing skegs therefor positioned at bow and stern and laterally of the board, with the operator standing thereon and supporting the sail means manually;

FIG. 2 is a top elevational view, partially in phantom, of the board taken from above, with the operator in position thereon holding the sail;

FIG. 3 is a front elevational view, partially in phantom, of the board in operation showing the operator standing thereupon and supporting the sail in desired attitude;

FIG. 4 is a side elevational view, partially in phantom, showing alternative angular strut means for supporting the sail on the upper center surface of the board; and

FIG. 5 is a partial, side elevational view of the angular strut means of FIG. 4.

Description of the preferred embodiments

In the drawing, 10 designates the hull or board structure, which is preferably formed of a buoyant plastic, molded fiberglass or other analogous material similar to that utilized in modern surf boards. As shown, the hull is of overall elliptical shape, when viewed from above, and is tapered to its forward extremity 11 from its center portion 12 is then reduced gradually rearwardly to its rear extremity 13. In side view, the board 10 is preferably curved or concaved to its center section to provide an elevation or rise to its bow and stern extremities.

As shown, a forward skeg or keel 14 is provided, affixed centrally beneath the bow extremity 11 of the board, extending outwardly therefrom about one-third of its length and disposed vertically on the axis of the hull 10. In length, forward skeg 14 is preferably on the order of one-third of the length of the hull 10 and, as shown, is preferably downwardly reduced and provided with a sharp entering edge at its forward extremity. As shown in FIGS. 1 and 3, its lower edge or keel contacts the surface of the water when the hull is in normal, or horizontal position. As there is considerable "rise" to bow 11, of hull 10, skeg 14 is gradually reduced in depth, from front to rear, to conform to the "rise" of the bow.

The stern or rear extremity of the board 10 is provided with a stern skeg 15 of identical shape and dimensions to bow skeg 14 and also aligned with the longitudinal axis of the board 10 and depending downwardly therefrom at a right angle.

Lateral skegs 16 and 17 are provided extending downwardly at right angles to the board 10 at its median lateral extremities and, as shown, are preferably of a length approximately one-half the length of board 10 and are affixed beneath its lateral extremities in appropriate fashion. As shown, lateral skegs 16 and 17 are smoothly curved from front to rear and are of a depth of approximately six inches below the hull line at their centers, to provide lateral stability to the board 10.

Fore and aft skegs 14 and 15 and lateral skegs 16 and 17 may be molded integrally with the board 10 at the time of its formation or may be appropriately affixed thereto as by cementing, bolting or other means.

The skegs are provided to stabilize and control the board 10, as will hereinafter be discussed in more detail.

Referring now to the sail structure per se, sail 18 is preferably triangular in shape and, as shown, is approximately six feet on a side. It is preferably formed of heavy plastic or analogous material and is provided with a forward strut 19, formed of aluminum or analogous material, which is appropriately affixed along the forward edge of the sail as by insertion in a seam provided along the forward edge of the sail 18, or by other appropriate means. Extending longitudinally of the sail 18, from the median point of forward strut 19 to its rear apex 20 is a central strut 21 which is appropriately affixed to the center of forward strut 19 and

extends the length of sail 18 to its apex 20 wherein its rear extremity is firmly affixed as by means of a pocket or other fastening. Sail 18 may be of other than triangular shape. Thus, it may be arcuate, rectangular, circular, bow-shaped or an elongate wedge-shape.

Provided along the rear edge of forward strut 19 is a hand sheet 22 which, as shown, is affixed at its lower extremity 23 to the lower end of strut 19 and is preferably affixed at its middle at 24 to the median point of strut 19. At its upper extremity, hand sheet 22 is affixed at 25 to the upper end of forward strut 19. As will be seen, considerable slack is provided in hand sheet 22, for a purpose hereinafter more fully to be discussed.

Hand sheet 22 may, if desired, be a single line, extending between the extremities of strut 19 and affixed thereto.

Fixed sheet 26 is provided affixed at its lower extremity to a ring 27 in the center of the upper surface of hull 10 and extending upwardly therefrom for attachment to the center section 28 of longitudinal strut 21 of sail 18. From affixation point 28 a rear hand sheet 29 is provided loosely extending from point 28 to apex 20 of sail 18. This structure is shown in FIGS. 1, 2 and 3.

Hand sheets 22 and 29 may be formed of aluminum or plastic tubing, if desired.

It will thus be seen that with the operator in standing position with his feet braced, as shown, and facing toward the bow of the board 10, his left hand grasps after hand sheet 29 and his right hand grasps the upper loop of forward hand sheet 22, above the median line of sail 18, thus permitting him to maintain the sail 18 in desired attitude with respect to the surface of board 10. The fixed sheet 26 is provided to tie the sail in securely to the center section of the board 10 to provide a fulcrum or stabilizing point for the maneuvering of the sail above the board 10 and to positively affix the sail to the hull 10, whereby its pull will be directly communicated to hull 10.

Referring to the embodiment of the invention shown in FIGS. 4 and 5, it will be seen that in this embodiment a pair of angular support bars or struts 30 and 31 have been substituted for the fixed sheet 26 of FIGS. 1, 2 and 3, to provide improved stabilization for the sail 18 and an improved connection between sail 18 and hull 10. Bars 30 and 31, as shown, are preferably tubular in shape and formed of aluminum or analogous material and are welded or otherwise united at their upper extremities to ring 32. Ring 32 is preferably pivotally connected to strut 21 of sail 18 by means of ring 33 affixed to the center section of strut 21. As shown, bars 30 and 31 make an angle of about 30° with each other at their apex. Bar 31 is preferably shorter than bar 30 and is preferably in substantially vertical position with respect to hull 10, while the forward bar 30 is inclined rearwardly at an angle of about 45° to deck 10 and thus acts as a forward "brace" to the bar unit 30-31. At their bored lower or foot extremities 34 and 35 bars 30 and 31 are preferably pivotally affixed over longitudinally aligned rods supported in longitudinally aligned brackets 36 and 37 on the axis of board 10 whereby the support unit 30-31 may be angularly disposed at will to either side of the longitudinal axis of board 10 up to 90°. Due to the pivotal affixation of the apex of bars 30 and 31 at the center point of longitudinal strut 21 and the pivotal affixation of the bored feet 34 and 35 in brackets 36 and 37 on the axis of board 10, the angularity and attitude of sail 18 may be varied at will by the operator. As the bar unit 30-31 is longitudinally immovable it relieves the operator of much of the strain of supporting the sail, when the craft is under way.

Bars 30 and 31 may be of the same length, if desired, both making an acute angle with hull 10, at their feet,

whereby the operator may reverse his position on hull 10, with respect to sail 18, at will.

In this embodiment, a stern hand sheet 38 is provided extending between the apex 20 of sail 18 and to the median or fulcrum point of center strut 21 of sail 18 for grasping, as shown, by the left hand of the operator.

As in the embodiment shown in FIGS. 1, 2 and 3, the forward hand sheet 22 is provided, the upper bight of which is preferably grasped in the right hand of the operator, to control the attitude of the sail 18 with respect to the deck surface of board 10.

In this embodiment of the invention the bars 30 and 31 being fixed in forward and aft brackets 36 and 37 aligned on the center axis of hull 10, relieve the operator of much of the strain of maintaining the sail 18 in proper position when the craft is under way.

As aforesaid, the forward skeg or keel 14 and the aft skeg or keel 15, centered on and depending from the bow and stern portions of the hull 10, respectively, maintain the craft in proper longitudinal alignment on the water and the lateral or amidship skegs 16 and 17 act to prevent lateral sliding or skidding of the hull 10, when under way.

In this embodiment, the sail is maintained permanently in the desired longitudinal position with respect to the hull 10 due to the affixation of the feet of struts 30 and 31 in brackets 36 and 37 located centrally on hull 10 on its longitudinal axis and the forward and aft hand sheets 22 and 37 are utilized to control the attitude of sail 18 and its angularity with respect to the upper surface or deck of hull 10. Normally, the sail 18 is held at an angle of approximately 45° to the horizontal and thus, in addition to obtaining a forward impulse from the wind, a considerable lift is imparted to the board 10 due to the upward force of the wind against the sail at this 45° inclination.

The steering of the craft is largely accomplished by means of weight-shifting on the part of the operator. Thus, a weight shift to the starboard or right-hand side of the board 10 will result in a lowering of the starboard side of the craft and a turn in that direction. Conversely, a weight shift to the port or left-hand side of the craft will lower that side and will result in a turn to port.

The shifting of the operator's weight to the stern will shift the center of the water's lateral resistance aft and change course further away from the wind and conversely shifting the weight forward will change course further into the wind.

As aforesaid, the sail 18 is preferably formed of transparent plastic or analogous material whereby the operator's view ahead or laterally will not be obstructed.

The dimensions of the board are preferably on the order of 8 x 3 feet, and as aforesaid, its overall shape is elliptical, when viewed from above, and the hull 10 is preferably concaved toward its center, where it is flattened for support of the operator, with the bow and stern extremities being curved upwardly, as shown. The overall appearance, thus, is broadly of a dish or concaved ellipse, reduced to its bow and stern extremities and provided with centrally disposed, downwardly extending fore and aft skegs or keels 14 and 15, and laterally depending skegs 16 and 17, to impart longitudinal control and lateral stability to the hull respectively.

The sail is preferably in the form of an equilateral triangle, 6 feet on a side and is preferably formed of transparent plastic or analogous material of strength to withstand the forces exerted upon it by wind and water resistance against the hull 10.

Due to the flexible mounting of the sail 18 on the center section of the hull and the fact that the sail is manually controlled by the operator through the fore and aft hand sheets, the attitude of the sail may be varied at will by the operator, thus increasing or decreasing the sail area exposed directly to the wind and varying the lift imparted to the craft by the wind.

As aforesaid, the maneuvering of the craft under sail is normally obtained by weight shifting on the part of the operator to vary the attitude of the hull 10 in the water to accomplish the desired directional deviations in its course.

Obviously, if the operator wishes to bring the craft to a stop he can feather the sail 18 by pointing it directly into the wind or can hold it in a horizontal position, thus "spilling" the wind from the sail.

"Tacking" may be readily accomplished with this combination and it is also possible to "luff" directly into the wind.

Being symmetrical about the transverse axis, an easy method of tacking is to stop the forward motion, as above-described; then to reverse the sail and thereby the motion of the craft; shift the weight forward and bring the craft up into the wind in the other direction, the sail remaining on the same side of the craft.

The dimensions of the craft may be varied within wide limits, both hull and sail, as desired, the dimensions given herein merely applying to one preferred embodiment of the invention. The craft may be greatly enlarged and a multiplicity of sails provided, one sail for each occupant, within reasonable limits, a maximum of three operators being the greatest number practicable.

Functionally, the prime purpose of this invention is to provide a craft wherein the hull may be compared to the skis in the sport of water skiing and the sail provides the pull of the tow rope. It is intended that this novel sport be enjoyed by even the most inept, but provide a challenge to the strength, skill, and judgment of the water and sail enthusiast in achieving the best of performance.

There are but four elements essential to this function:

- (1) Buoyant platform (the board or hull)
- (2) Resistance to leeward slip (lateral skegs)
- (3) Control, or trim, of attitude toward the wind (fore and aft skegs)
- (4) Control of wind power (hand controlled sail).

Throughout, equivalents may be substituted for the above (4) elements of this combination; their individual shapes may be modified; they may be increased or decreased in number; their lateral location may be varied; and, so long as their relative location longitudinally is not changed, all of this may be done without changing the spirit, function, or operation of this craft.

In an alternative embodiment of the invention, the fixed sheet 26, shown in FIGS. 1, 2 and 3 and the angular struts 30 and 31, shown in FIGS. 4 and 5, attaching the sail to the craft, may be dispensed with and the sail 18 may merely be held by the operator, without fixed connection between it and the craft.

In this embodiment, the operator himself would form the mechanical connection between the sail and the craft and this embodiment would give the operator more freedom in maneuvering and positioning the sail with respect to the craft. Thus, with the operator supporting the sail manually, if the operator moved toward the bow of the craft the position of the sail with respect thereto would

also be moved toward the bow a similar distance and conversely, if the operator moved toward the stern of the craft the sail would thus be analogously moved toward the stern.

Attention is directed to the appended claims for a limitation of the scope of the invention.

What is claimed is:

1. In a sailing craft, a buoyant, concaved hull of generally elliptical shape, forward and aft skegs disposed beneath the bow and stern sections of the hull and depending downwardly therefrom beneath the hull, lateral skegs depending downwardly from the opposed sides of the hull at 90° thereto, a triangular sail disposed above and affixed to said hull, a forward strut disposed along the forward edge of said sail, a longitudinal strut disposed at a right angle to said forward strut and extending the length of said sail between the center point of said forward strut and the rear apex of said sail, retaining means joining the center section of said longitudinal strut of said sail and the center, upper surface of said hull, a hand sheet disposed between the extremities of the forward strut of said sail, a rear hand sheet disposed between the center of said longitudinal strut and its rear extremity whereby an operator standing upon said hull may grasp said hand sheets and control the attitude of said sail with respect to said hull.

2. A craft in accordance with claim 1 in which the forward and aft skegs are downwardly reduced.

3. A craft in accordance with claim 1 in which the forward and aft skegs are approximately one-third of the length of the hull and extend forwardly and rearwardly therefrom about one-third of their length.

4. A craft in accordance with claim 1 in which the lateral skegs are of about one-half the length of the hull and are centrally located on each side thereof.

5. A craft in accordance with claim 1 in which the hull is concaved to its center surface with the bow and stern sections thereof elevated.

6. A craft in accordance with claim 1 in which an angular bracket is pivotally affixed on the longitudinal axis of the hull between the center section of said hull and the center section of the longitudinal strut of the sail.

7. A craft in accordance with claim 1 in which said sail is in the shape of an equilateral triangle.

8. A craft in accordance with claim 1 in which said sail is formed of transparent plastic material.

9. A craft in accordance with claim 1 in which there is no fixed connection between the sail and the hull of the craft and the sail is supported manually by the operator.

References Cited

UNITED STATES PATENTS

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U.S. Cl. X.R.

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