

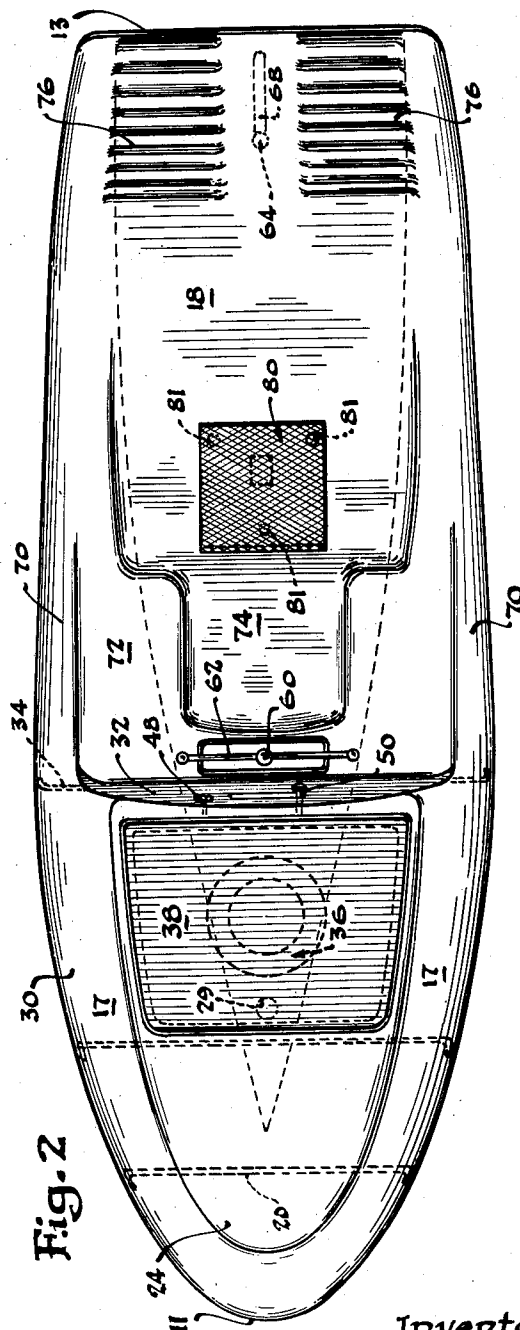
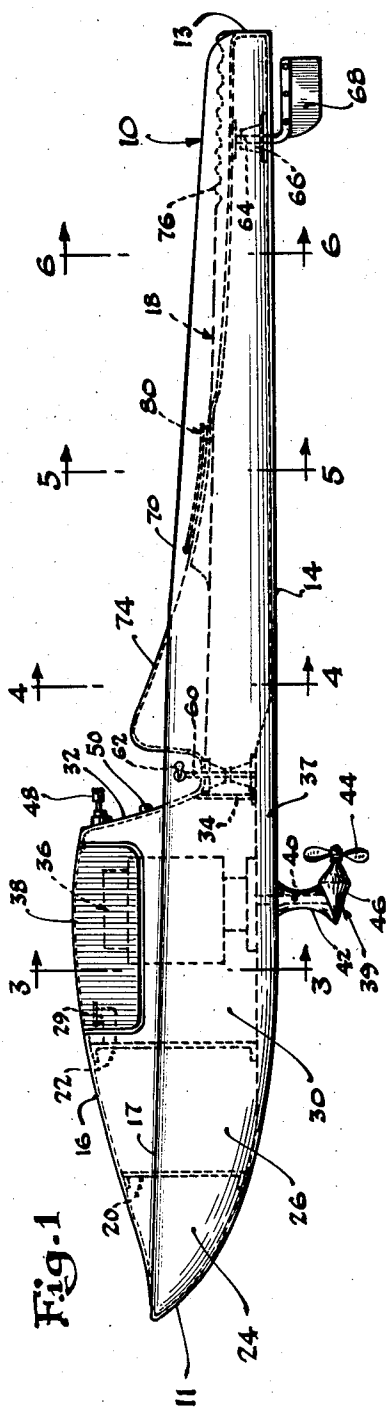
Sept. 1, 1959

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MOTOR PROPELLED SURFBOARD

2,901,757

Filed Dec. 21, 1956

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

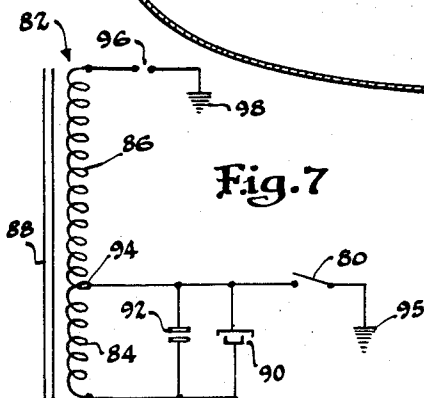
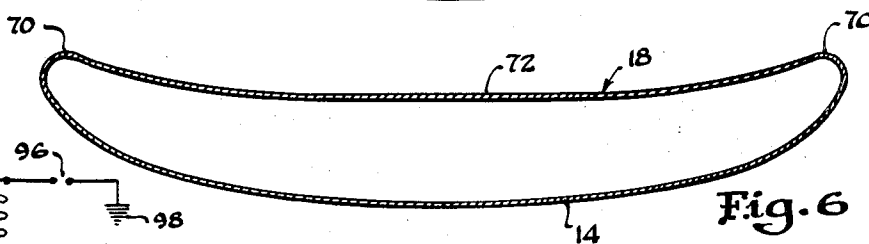
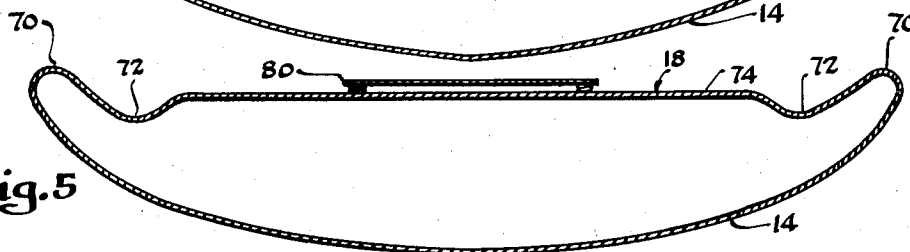
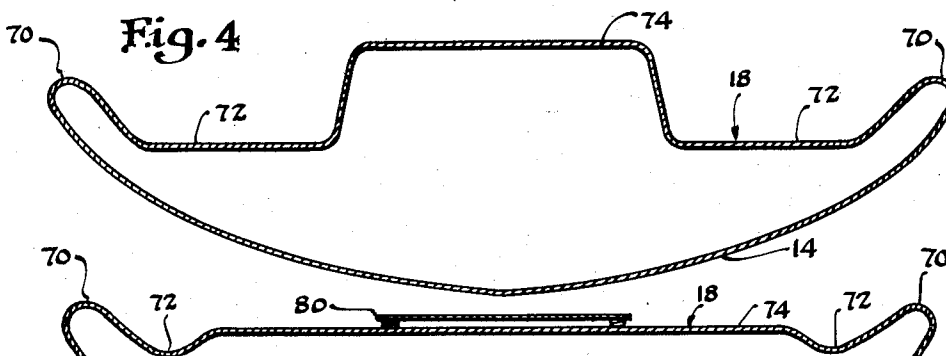
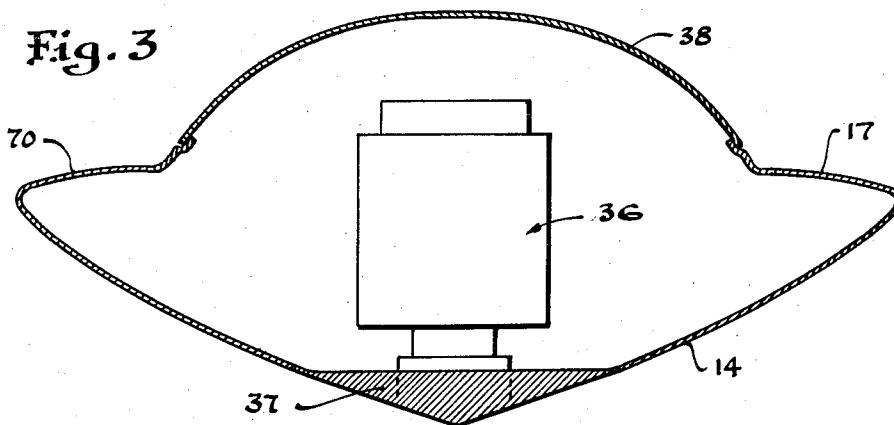


Fig.7

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MOTOR PROPELLED SURFBOARD

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Application December 21, 1956, Serial No. 629,877

5 Claims. (Cl. 9—1)

The present invention relates to marine vehicles and more particularly to an improvement in one-man, self-propelled aquatic surfboards.

Surfboards are well known in the art and date back to man's earliest attempts at developing aquatic vehicles. In these well known surfboards propulsion is achieved by either paddling or by the operator kicking in the water with his legs causing the board to move. Another common method of propulsion is to maneuver the board in rolling surf so that it is on the leading side of a wave. If the wave is sufficiently large its movement will cause the board to move along with it and the board will be thus propelled as long as the operator can maintain it on the leading side of the wave. The limitations of such a vehicle as to speed and direction of movement are obvious.

In view of those obvious limitations, improvements were made by making the boards motor propelled through the addition of a prime mover. The common form of this improvement was a conventional outboard motor secured in some fashion to the stern of the surfboard. While this is an advance in the art over the original surfboard it still has serious limitations. By placing an outboard motor at the stern, its controls, which are on the motor itself, are behind the operator making their manipulation awkward. Further, the placement of the motor on the rearmost portion of the boat creates design problems in the way of balancing and the like.

In view of the above explained state of the art, the present application teaches an improved surfboard wherein the motor is disposed in front of the operator with the motor controls conveniently located for easy operation. With the motor so located good balance and superior propulsion characteristics are achieved. By the application of the propulsion means to the fore end of the surfboard, the board will maintain a level planing attitude while in operation. This increases the efficiency of operation over comparable marine vehicles where the placing of a motor on the stern causes the boat to mush through the water in an undesirable bow high attitude.

It is apparent that the application of power to a light weight surfboard as disclosed herein creates a marine vehicle having high performance characteristics. While the surfboard of the present invention is basically stable both statically and dynamically, certain novel safety features have been incorporated into the design in view of the aforementioned high performance characteristics.

It is one of the objects of the present invention to provide a light weight, powered surfboard of high performance having watertight compartments so as to be substantially non-sinkable.

It is another object of the present invention to provide in such a surfboard a safety device adapted to disable the motor's ignition system whenever the boat's operator is not in proper position. The surfboard's deck is contoured to provide for operation from either a standing, sitting, kneeling or prone position. The ignition disabling device in question is located on the deck so

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that the operator will be in contact with it if he is in any of the aforementioned positions. If for any reason the surfboard is upset during operation, or the operator falls overboard, the device will cause the motor to die immediately thereby allowing the operator to swim to the board and recover it.

These and further objects of the invention will become apparent from the following description and the accompanying drawings wherein:

Figure 1 is a side elevational view of the surfboard which forms the principal subject of this invention.

Figure 2 is a top plan view of applicant's surfboard.

Figure 3 is a sectional view taken along section lines 3—3 of Figure 1.

Figure 4 is a sectional view taken along section lines 4—4 of Figure 1.

Figure 5 is a sectional view taken along section lines 5—5 of Figure 1.

Figure 6 is a sectional view taken along section lines 6—6 of Figure 1.

Figure 7 is an electrical schematic diagram of the safety switch incorporated in the ignition system of the boat's power plant.

Referring now to the drawings for a more detailed description of the present invention, Figure 1 shows a side elevational view of a surfboard 10 of my new design, the bow 11 of which is seen at the left hand side and the stern 13 at the right hand side. In one embodiment of the present invention the surfboard was of hollow molded fiber glass type plastic construction, the shell of the boat being formed in a conventional manner. Naturally other materials or methods of construction would be obvious to one skilled in the art, such as the use of formed laminated wood impregnated with waterproofing resins or the like.

The surfboard 10 has an outer shell comprising a hull bottom 14, a cowl portion 16, a fore deck portion 17 and an aft deck portion 18 where the operator is stationed. A sealed first bulkhead 20 is provided aft the bow 11, which in conjunction with the cowl 16, fore deck 17, and the bottom 14 defines a watertight compartment 24 forming part of the non-sinkable design.

A second sealed bulkhead 22 is spaced behind the first bulkhead 20 and with it the cowl 16, fore deck 17, and the bottom 14 define a second compartment 25. In one embodiment of the invention, that compartment is provided to create a fuel tank 26 integral with the boat. This is best seen in Figure 2, where the compartment 26 is disposed just aft bulkhead 20. A fuel inlet 20 of conventional construction provides a means through which fuel can be added to the tank 26.

An enclosed engine compartment 30 is situated just rearwardly of the second bulkhead 22. The aft end of the engine compartment 30 is enclosed by an instrument panel 32 and a third bulkhead 34. An engine 36, as indicated generally by dotted lines, is disposed within the said compartment 30. A tight fitting hatch 38 is provided in the cowl 16 to allow access to the engine 36. The hull bottom is reinforced at 37 to assume the localized load of the engine 36.

In one embodiment of the invention the power plant was a gasoline engine having two cylinders, and using two cycle combustion. Its crankshaft was mounted vertically with its axis substantially normal to a plane tangent to the bottom surface of the hull at its point of intersection therewith. Such an arrangement is shown generally in Figure 1.

The engine 36 drives a marine propulsion unit 39. An extension of the engine's crankshaft extends vertically downward at 40. Associated with the shaft 40 is a faired housing 42. The shaft 40 drives through a conventional set of bevel gears (not shown) to actuate a marine

propeller 44 which rotates in a vertical plane perpendicular to the longitudinal axis of the surfboard 10. The bevel gears and the propeller shaft are encased in a streamlined housing 46.

The controls for the engine 36 are located on the instrument panel 32. Protruding through an appropriate fitting on the panel 32 is a pull cord 48 which functions as a starting means for the motor. A lever 50 is also provided on the panel 32 and is connected through linkage to the engine's carburetor for throttling purposes. Other controls or instruments may be provided as desired.

Means for directional control of the surfboard 10 is also provided and comprises a vertical steering post 60 which is rotatably mounted just aft the control panel 32. A steering bar 62 is secured to the post 60 in a position transverse to the hull 14. A crank (not shown) is connected to the steering post 60 which in turn is connected to a crank on the rudder post 64 by means of a link. The rudder post 64 is rotatably mounted through the hull bottom 14 by means of an appropriate water tight fitting 66. A rudder 68 is secured to the rudder post 64. With this construction, when the operator causes the steering bar 62 to turn the rudder 68 will also turn in a like manner.

The hull bottom 14 is shaped for both speed and stable operation. Figures 3, 4, 5 and 6 are sectional views indicating a varying bottom contour starting with a flat, blunt bow which evolves into a V-shape at section line 3—3 (Figure 3) and then to a flattened round bottom stern portion. This broad stern design prevents the surfboard from squatting or mushing through the water with an excessive nose high attitude. In this regard it is to be noted that the bottom 14 has a desirable V-bottom shape where the propeller 44 is located.

The cowl 16 is shaped to provide a pleasing streamlined appearance and little wind drag. On each side of the cowl 16 is a nearly flat fore deck portion 17 which continues aft to the plane of the instrument panel 32, where the aft deck 18 begins. The fore deck 17 evolves into side rims 70 that tapers from a maximum height located adjacent the instrument panel 32 and equal the height of the fore deck 17 to a lesser height at the stern 13. The varying height of the rims 70 is disclosed in Figures 4, 5 and 6.

The aft deck 18 is of two level configuration, wherein a lower base level 72 is provided in conjunction with a tapering central portion 74 having its point of maximum height above the lower level 72 spaced aft the instrument panel 32. It is also to be noted that the raised central portion 74 is of two widths, being narrower at its highest portion. Finally a series of parallel ridges 76 positioned transverse of the aft deck 18 are located on its rearmost portion.

With the aft deck 18 contoured as shown in the drawings and as just described, area is provided for the convenient operation of the surfboard and its controls from any of several positions, namely standing, sitting, kneeling or lying down. If the operator chooses a standing position, ropes may be connected to the ends of the steering bar 62 for steering purposes. If the operator wishes to operate from a prone position he uses the ridges 76 as a toe hold and rests his chest on the upper end of the raised central portion 74 of the aft deck 18. Thus located, the throttle and steering controls are conveniently located directly in front of him and the raised central portion 74 provides comfortable operation with good visibility over the cowl 16.

A safety device is provided for the disabling of the engine's ignition system. The device takes the form of a large switch pad 80 disposed centrally on the aft deck 18 and having normally open spring pressed contacts 81 in parallel circuiting. The contacts 81 are sealed in a large watertight envelope of rubber or its equivalent and are adapted to close whenever pressure is applied to the pad. Switch pads of this type are in common use

today for the actuation of doors in modern supermarkets.

Figure 7 shows that portion of the engine's ignition circuit with which the switch 80 is associated. While it is shown in a magneto type ignition system, it is well within the skill of one versed in the art to apply it to other types of ignition systems with equivalent result.

Referring to Figure 7, a coil 82 having in series a low voltage or primary winding 84 and a high voltage or secondary winding 86 about a common core or armature 88 is disclosed schematically. Connected across the primary coil 84 in parallel are condenser 90 and breaker points 92. The switch 80 is in series with that side of the condenser 90 and breaker points 92 which connect to a center tap 94 of the coil 82. The other side of the switch 80 is grounded at 95. The high voltage or secondary side of the circuit consists of the secondary winding 86 and a spark plug 96 connected in series with it and a ground 93.

Current is caused to flow in the circuit by passing a magnetic field through the coil 82 which charges the condenser 90. When the cyclic timed breaker points 92 close, the condenser 90 will discharge causing a current flow in the primary winding 84, the potential of which is multiplied in the secondary winding 86. When the potential is of sufficient magnitude it will cause a spark to jump the gap in the plug 96 which is grounded. The spark thus caused will ignite the fuel-air charge in the engine's combustion chamber.

However, the foregoing explanation is good only if the switch 80 is closed, grounding one side of the condenser 90, breaker points 92, and primary winding 84. Switch 80 must be closed to complete the low voltage or secondary side of the ignition circuit and whenever it is open the ignition system will be disabled. The switch 80 is shown and described in association with the ignition circuit of one spark plug, however it can obviously be placed in circuit with several spark plugs so as to disable more than just one. An example of one such method would be to have the several ignition circuits in question placed in parallel and feed to a common side of the switch 80.

As already explained the switch 80 takes the form of a large pad and as disclosed in Figure 2, is centrally positioned on the aft deck 18 so that it will be closed and the ignition circuit will be completed only when an operator is aboard the surfboard in proper position. With the switch pad 80 thus located, its contacts 81 can be closed when the operator stands, sits or kneels on the pad 80 or lies across it. If he falls overboard the contacts 81 open and the engine 36 stops immediately due to the disabling of the ignition system. The stopping of the boat enables the operator to swim to it and prevents it from running away and destroying itself.

The foregoing description is believed to be the preferred and practical form of the invention, however it is to be understood to those skilled in the art that the specific construction and arrangement of parts is merely by way of example and not to be construed as limiting the scope of the invention as shown in the appended claims.

I claim:

1. In a one-man engine propelled surfboard, the combination of a cowl covered engine compartment, a spark ignition engine disposed in said compartment, propulsion means associated with said engine and disposed externally of said surfboard beneath said engine, a control panel aft said engine compartment, an aft deck extending from said control panel to the stern of said surfboard, a raised central portion on said aft deck inclined forwardly and upwardly relative thereto, parallel transverse ridges on the rearmost portion of said aft deck, a pressure sensitive engine disabling switch located centrally on said raised central portion, said combination adapted to accommodate operation from a prone position with the raised portion serving as a chest rest and said ridges as toe-holds.

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2. In a one-man engine propelled surfboard, the combination of a cowl enclosed engine compartment disposed forwardly in said surfboard, a control panel forming the rear enclosure for said cowl, an aft deck forming the upper surface of said surfboard rearwardly of said panel, raised side rims disposed on the side edges of said aft deck, a raised central portion on said aft deck inclined upwardly and forwardly, said central portion having its highest portion spaced aft said panel, the side edges of said central portion being spaced apart from said rims and forming a trough therebetween, parallel ridges formed transversely of the longitudinal axis of said surfboard and disposed on the rearmost portion of said aft deck.

3. In a one-man motor-propelled surfboard the combination of a spark ignition engine and associated propulsion means mounted forwardly on said surfboard, a contoured deck disposed rearwardly of said engine, a rearwardly facing instrument panel interposed between said engine and said deck, a raised central portion on said deck inclined forwardly and upwardly, an operator-carrying normally open switch having a relatively large pressure sensitive area centrally located on said raised portion, said switch being so positioned on said raised portion that the operator will be adjacent said panel when in a standing, sitting, or prone position, an ignition system for said engine having said switch in circuitry therewith, said system adapted to be completed only when pressure is applied to said switch.

4. In a one-man motor-propelled surfboard the combination of a spark ignition engine and associated propulsion means mounted forwardly on said surfboard, a deck disposed rearwardly of said engine, a rearwardly

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facing instrument panel interposed between said engine and said deck, an operator-carrying normally open switch having a relatively large pressure sensitive area centrally located on said deck, said switch being so positioned that the operator will be adjacent said panel when in a standing, sitting, or prone position, an ignition system for said engine having said switch in circuitry therewith, said system adapted to be completed only when pressure is applied to said switch.

5. In a one-man motor-propelled surfboard the combination of a spark ignition engine and associated propulsion means mounted forwardly on said surfboard, a deck disposed rearwardly of said engine, controls for said engine disposed forwardly of said deck, an operator-carrying normally open switch having a relatively large pressure sensitive area centrally located on said deck, said switch being so positioned that the operator will be adjacent said controls when in a standing, sitting, or prone position, an ignition system for said engine having said switch in circuitry therewith, said system adapted to be completed only when pressure is applied to said switch.

References Cited in the file of this patent

UNITED STATES PATENTS

1,691,188	Hall	Nov. 13, 1928
1,893,994	Johnson	Jan. 10, 1933
2,434,700	Keckley	Jan. 20, 1948
2,451,781	Steele	Oct. 19, 1948
2,593,806	Steele	Apr. 22, 1952
2,773,143	Morrison	Dec. 4, 1956
2,816,186	Rands et al.	Dec. 10, 1957