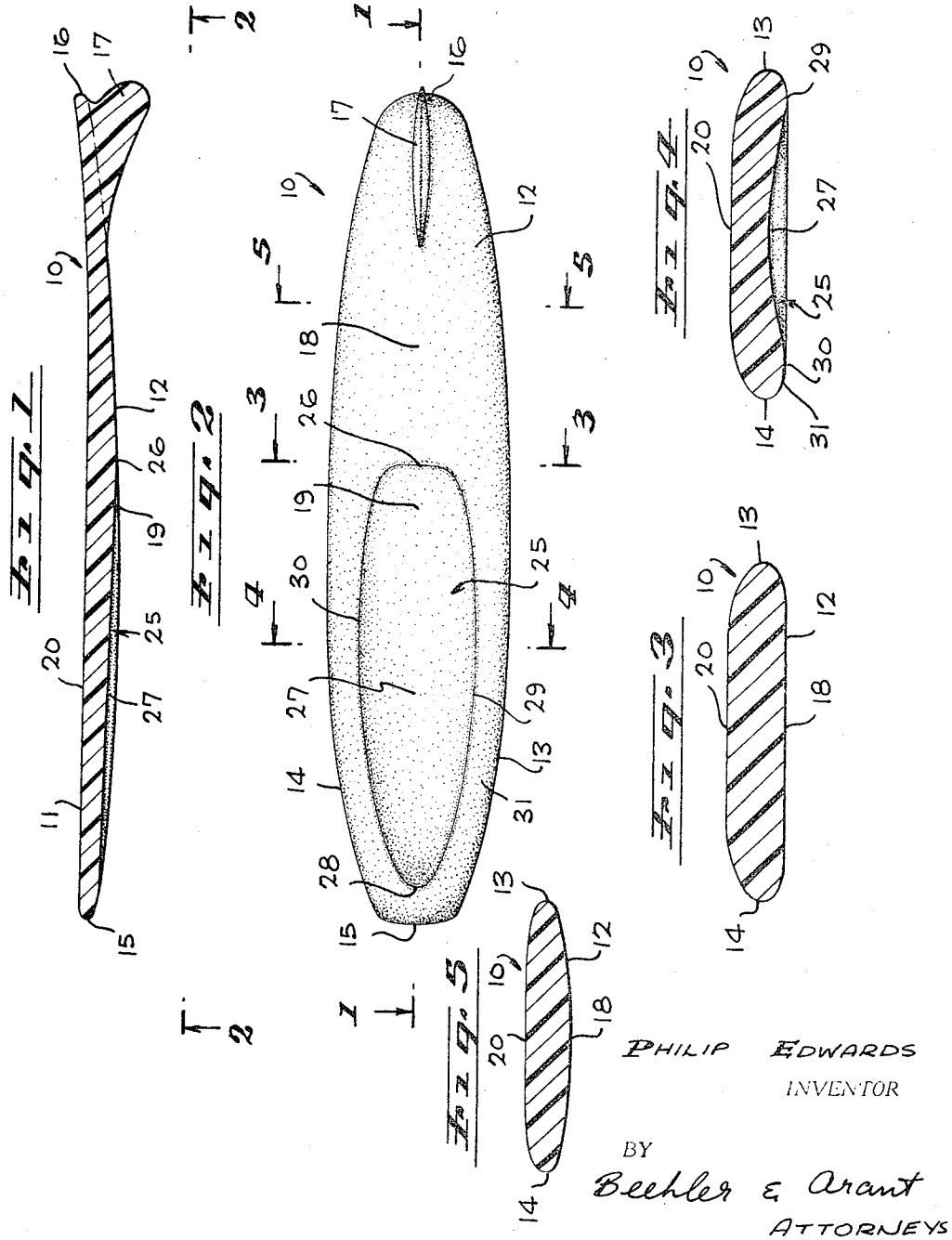
Oct. 4, 1966 P. EDWARDS 3,276,050

SURFBOARD

Filed March 7, 1966



PHILIP EDWARDS
INVENTOR

BY
Beehler & Arant
ATTORNEYS

United States Patent Office 3,276,050 Patented Oct. 4, 1966

3,276,050

SURFBOARD

Philip Edwards, Dana Point, Calif., assignor to Hobart L. Alter, Dana Point, Calif.

Filed Mar. 7, 1966, Ser. No. 534,964
4 Claims. (Cl. 9—310)

The invention relates to surfboards and has particular reference to a buoyant type board used by surfriders when riding the downhill slope of a wave after it crests and starts moving toward the beach.

As surfboards have become popular, the sport has invited sundry refinements in board construction. A currently popular type of board is one constructed primarily of some appropriate relatively light weight buoyant material such as styrofoam, reinforced by one or more longitudinal ribs and ultimately covered with fiberglass reinforced resin before being sanded smooth and finished. The usual board is finished relatively smooth, carries a steering fin on the underside of the stern, and has amply rounded lateral edges. The board may be described as a hull, to contrast it with the construction of a boat, and the bottom of the hull is rounded in two directions, namely from one side to the other and from bow to stern, the theory being one similar to the design of displacement hulls for a boat having in mind that when the rider is supported by the board and traveling the down slope of a wave the board will progress through the water under the impetus of gravity acting upon the board and the rider much as a boat progresses through the water.

The top side of the board is relatively flat so that the rider can balance himself in different positions between the fore and aft end depending upon the stage of the ride and the skill of the rider. Usually, after the rider has "caught" the wave while either seated or lying prone upon the board, he will rise to his knees and then stand, preferably near the rear of the board at the start of the run whereby shifting his weight from one side to the other the board can be steered and manipulated into the right direction and right position. Following this initial steering maneuver, the rider can then advance forward on the board and manipulate it in different fashions depending upon various factors, including the direction and speed of the wave and the particular maneuver which the rider wishes to execute.

Sometimes in contests riders will ride in a more difficult position upon a board, one of the more difficult positions being near the "nose" of the board. When the rider is on the "nose" of the board the steering portion of the board tends to become lifted, lifting the steering fin to a degree and the displacement of the hull is changed appreciably, as is also the speed, and hence nose rides as a rule are of short duration.

Among the objects of the invention is to provide a new and improved surfboard which in certain attitudes makes of the surfboard a planing hull as contrasted with a displacement hull.

Another object of the invention is to provide a new and improved surfboard capable of being manipulated at an appreciably faster speed without the need for varying in any appreciable degree the customary over-all proportions and weight of a surfboard.

Still another object of the invention is to provide a new and improved surfboard wherein the bottom is of such design that at certain stages of travel the board may be ridden closer to the nose than is possible with boards of the construction heretofore available.

Still another object of the invention is to provide a new and improved surfboard having a bottom of such design that when ridden on the nose the board is capable of picking up speed at a very marked rate of increase.

Still further among the objects of the invention is to

provide a new and improved surfboard of substantially conventional length, breadth, weight, and fore and aft camber which can be ridden as a planing board by the operator.

With these and other objects in view, the invention consists in the construction, arrangement, and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter set forth, pointed out in the appended claims and illustrated in the accompanying drawings.

In the drawings:

FIGURE 1 is a longitudinal sectional view of the surfboard taken on the line 1—1 of FIGURE 2.

FIGURE 2 is a bottom view of the surfborad taken on the line 2—2 of FIGURE 1.

FIGURE 3 is a cross-sectional view on the line 3—3 of FIGURE 2.

FIGURE 4 is a cross-sectional view on the line 4—4 of FIGURE 2.

FIGURE 5 is a cross-sectional view on the line 5—5 of FIGURE 2.

In an embodiment of the present invention chosen for the purpose of illustration there is shown a surf riding board, commonly termed a surfboard, indicated generally by the reference character **10**, the hull of which is a single piece of preferably inherently buoyant material such for example as styrofoam, having a deck **11**, a bottom **12**, a starboard lateral side **13**, and a port lateral side **14**. A bow **15** is indicated at the forward end and a stern **16** indicated at the aft end. A steering fin **17** is shown at the aft end located on a bottom fore and aft midline **18**.

The deck **11** is relatively flat from one lateral side to the other so that the rider can stand on it comfortably with bare feet. In the interest of streamlining the surfboard, however, both lateral sides are amply rounded for a substantial distance inwardly toward the center to the extent that the flatness of the central portion of the deck gives way to a general arcuate shape as it approachces the lateral sides.

At about a center point **19** between fore and aft ends the surfboard is at its maximum thickness and this maximum thickness is maintained for a substantial distance both fore and aft of the center point. The thickness, however, diminishes progressively toward the aft end to the extent that the surboard becomes relatively thin about at the area of attachment of the steering fin **17**. The surfboard also becomes progressively thinner toward the forward end but the thickness at the forward end is not necessarily the same thickness as at the aft end.

It is further significant to note that along the bottom fore and aft midline **18** the board has what may be described as a camber, that is to say a somewhat bowed effect to the extent that forward and aft ends of the midline are tilted upwardly. Also along a deck side fore and aft midline **20** there is what may be described as a reverse camber, the lowermost portion of which is in the area of a center point **19** with both fore and aft ends tilted upwardly. The camber of course may vary appreciably but will usually be in the neighborhood of about ¼ inch to 1 inch for the over-all length of the surboard which is as a rule about 9 feet.

In the form of invention here under consideration there is provided what may be described as a patch **25** on the bottom **12** of the surfboard. The patch may take various forms but, generally speaking, the area occupied by the patch should begin near the center point **19** and extend forward almost to the forward end **15** or as near the forward end as structure permits, taking into consideration that there must be an appreciable thickness along the midline for both rigidity, buoyancy and strength. Although the rear end of the patch may be forward of the center point, good practice suggests that for a nine foot

board the rearward end **26** of the patch be about 5 feet from the forward end **15**. Also, at this point, as shown clearly in FIGURE 3, the bottom **12** will be substantially flat from one lateral side to the other. Rearward of the rearward end **26** of the patch the bottom **12** is curved in the usual fashion, that is to say, curved transversely from the lateral sides downwardly toward the bottom fore and aft midline and also curved longitudinally toward the aft end as clearly shown in FIGURE 1. Curved as described, the surfboard is maneuverable from the stern at the beginning of a ride.

Attention is directed to a forward section **27** of the bottom fore and aft midline. This forward section **27** is substantially a straight line from the rearward end **26** of the patch **25** to a forward end **28**. For a board about twenty to twenty two inches wide it is good practice to have the patch small enough to leave a margin **31** of two to three inchces between itself and the edge of the board. In the embodiment shown, the patch **25** along the forward section **27** is dished upwardly from opposite starboard and port perimeters **20** and **30**. Fashioned in this way, the forward section **27** which is the longitudinal center line of the patch will be at a lesser depth below the deck fore and aft midline **20** then are the depths of the starboard and port perimetral portions.

Constructed as described the patch **25** takes a form generally as indicated in FIGURE 2. The precise form of the patch is not of material importance because the form will be determined to a large degree by the initial curvature of the bottom **12**. A planing type surfboard may also be made by having the patch **25** substantially flat from side to side as well as from fore to aft ends where there is not an appreciable sacrifice in the thickness of the board, thereby to detract from needed buoyancy. In the form shown the starboard and port perimeters curve progressively outwardly from the rearward end **26** and then progressively inwardly approaching the forward end **28**. Accordingly, at what may be described as the midsection of the surfboard, namely a section a foot or two on opposite sides of the center point **19**, the patch is relatively flat and of appreciable width. The patch continues as one of appreciable width forward of the midsection and then may diminish in width at the forward end, as the board narrows. The portion of the board well forward of the midsection is the part of the board commonly designated as the "nose" section.

The section aft of the midsection, which may be termed the stern section, is the part of the board used for balancing and manipulating and is curved on the bottom as described so that when tilted toward one side or the other it will be stable, much as a hull of a sailboat is stable when it heels over toward one side or the other as dictated by the direction of the wind.

With a patch constructed in one or another of the forms herein suggested or perhaps a form somewhat intermediate that of a purely flat section and that of an amply dished section, the board, when ridden down the slope of a wave, will tend to pick up speed appreciably as the rider steps forward and at a location above the patch. At this stage of the ride the surfboard may be said to be converted from a displacement hull to a planing hull, the planing being assisted by flow of water upwardly against the patch due to the tilt of the board, the slope of the wave, and the momentum previously attained. The surfboard may, therefore, not only be ridden more effectively on the nose but can also be ridden at a much greater speed than has heretofore been possible.

While the invention has herein been shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices.

Having described the invention, what is claimed as new in support of Letters Patent is:

1. A surf riding board having a deck, a bottom and lateral sides, said deck at both a nose section forward of a midsection and at a stern section aft of said midsection having a balancing area between said lateral sides, said board being of maximum thickness about at the midsection and having a progressively diminishing thickness from said midsection toward the ends, said bottom forward of said midsection having a nose supporting patch comprising a center line along a forward section of the bottom fore and aft midline which is substantially straight from end to end, portions of said patch on opposite sides of said center line having opposite starboard and port perimeters extending progressively outwardly and then inwardly from fore end toward the midsection, said opposite perimeters having a depth below a deck side fore and aft midline not less than the depth of said center line below said deck side fore and aft midline, said portions comprising areas within said perimeters respectively which are relatively straight in a fore and aft direction and which are tilted at an angle upward with respect to the remainder of said bottom aft of said midsection.

2. A surf riding board having a deck, a bottom and lateral sides, said board being of maximum breadth at about the midsection between fore and aft ends and having a steering fin at the aft end along a bottom fore and aft midline, said deck at both a nose section forward of said midsection and at a stern section aft of said midsection having a balancing area between said lateral sides, said board being of maximum thickness at the midsection and having a progressively diminishing thickness from said midsection toward the ends, the bottom aft of said midsection having a slope progressively approaching the deck from the midsection toward the aft end and curved transversely from said lateral sides downwardly toward the bottom fore and aft midline, said bottom forward of said midsection having a nose supporting patch comprising a substantially straight center line along a forward section of the bottom fore and aft midline, opposite ends of said center line being coincident with and substantially tangent to said bottom, and substantially straight between said ends, said portions of patch on opposite sides of said forward section having opposite starboard and port perimeters extending from the fore end progressively outwardly and then inwardly toward the midsection, said opposite starboard and port perimeters having a depth below a deck side fore and aft midline not less than the depth of said center line below the deck side fore and aft midline, said portions on opposite sides of said center line and within said perimeters respectively being relatively straight in a fore and aft direction and tilted at an angle upward with respect to the remainder of said bottom aft of said midsection.

3. A surf riding board having a deck, a bottom and lateral sides, and a steering fin at the aft end along a bottom fore and aft midline, the deck of said board having a fore and aft reverse camber along a deck side fore and aft midline, said deck at both a nose section at the forward end and at a stern section at the aft end having a balancing area between said lateral sides, said board having a progressively diminishing depth from about the midsection toward the ends, the bottom aft of said midsection being tilted longitudinally upwardly, said bottom forward of said midsection having a direction progressively approaching the deck and having a nose supporting patch comprising a substantially straight center line along a forward section of the bottom fore and aft midline, portions of said patch on opposite sides of said center line having opposite starboard and port perimeters extending progressively from a fore end outwardly and then inwardly toward said midsection, said opposite perimeters having a depth below a deck side fore and aft midline greater than the depth of said straight center line below the deck side fore and aft midline whereby said portions form a slight upward depres-

sion throughout the length of the nose supporting patch along said straight center line.

4. A surf riding board of inherently buoyant material having a deck, a bottom and lateral sides, said board being of maximum breadth at about a midsection between fore and aft ends and having a steering fin at the aft end along a bottom fore and aft midline, the deck of said board having a fore and aft reverse chamber along a deck side fore and aft midline of from about ¼ inch to about one inch downwardly from the fore and aft ends toward the midsection, said deck at both a nose section forward of said midsection and at a stern section aft of said midsection being relatively flat from one lateral side to the other, said board being of maximum thickness at the midsection and having a progressively diminishing thickness from said midsection toward the ends, said bottom aft of said midsection being curved longitudinally from the midsection toward the aft end and curved transversely from said lateral sides downwardly toward the bottom fore and aft midline, said bottom forward of said midsection having a nose supporting patch comprising a substantially straight center line along a forward part of the bottom fore and aft midline extending from said midsection to a location near the forward end, said straight center line having ends terminating at and substantially tangent to respective portions of said bottom, portions of said patch on opposite sides of said straight center line having opposite starboard and port perimeters curved progressively outwardly from the fore end and then inwardly toward the midsection, said opposite starboard and port perimeters having a depth below the deck side fore and aft midline greater than the depth of said straight center line below the deck side fore and aft midline, said portions forming a slight upward depression in the nose supporting patch.

References Cited by the Examiner

UNITED STATES PATENTS

2,389,729	11/1945	Howland	9—310
3,027,575	4/1962	Fortin	9—310
3,173,161	3/1964	Amsbry	9—310

MILTON BUCHLER, *Primary Examiner.*

A. E. CORRIGAN, *Assistant Examiner.*