Nov. 27, 1945. L. S. HOWLAND 2,389,729

SURF BOARD

Filed Nov. 12, 1943

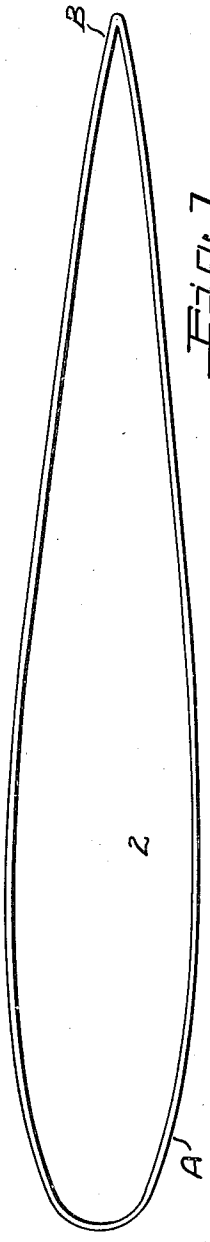


Fig. 1



Fig. 2

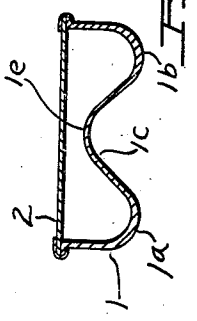


Fig. 5

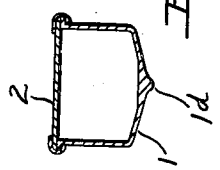


Fig. 6

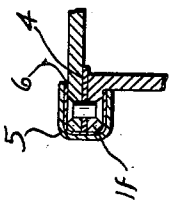


Fig. 7

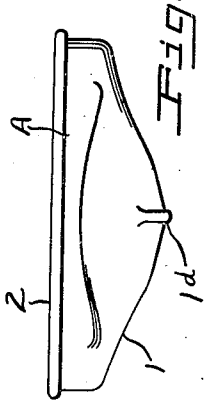


Fig. 3

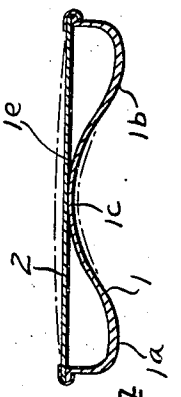


Fig. 4

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Patented Nov. 27, 1945 2,389,729

UNITED STATES PATENT OFFICE

2,389,729

SURFBOARD

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Application November 12, 1943, Serial No. 509,985

9 Claims. (Cl. 9—11)

My invention relates to a hull structure, and to one particularly adapted to the construction of surf boards, or to structures also commonly known as paddle boards.

One of the principal objects of my invention is to provide a surf board, or similar hull structure, which is semi-rigid of construction, yet sufficiently flexible, so that it will yieldingly resist sudden distortions or shocks by the user as well as by the sea in which is used or emersed.

Another important object of this invention is to provide a surfboard, or similar hull structure, which may expand or contract readily responsive to changes of pressure within and exteriorly of the surf board.

An important object also of this invention is to provide a hull structure of this class which may be readily and economically molded, or otherwise fabricated, without substantial internal bracing or reinforcement other than the inter-reinforcements of the hull and deck walls relative to each other.

A further imporant object of this invention is to provide novel means of securing the deck to the sides of the hull, and a means of this class which also serves as a convenient, rigid, and effective hand hold for gripping or holding the surf board.

With these and other objects in view, as will appear hereinafter, I have devised a surf board, or similar hull structure, having certain novel features of construction, combination, and arrangement of parts and portions, as will be hereinafter described in detail, and particularly set forth in the appended claims, reference being had to the accompanying drawing and to the characters of reference thereon, which form a part of this application, in which:

Fig. 1 is a plan view of a surf board incorporating my invention in one form;

Fig. 2 is a side elevational view thereof;

Fig. 3 is an enlarged front view thereof;

Figs. 4, 5 and 6, are enlarged transverse sectional views thereof taken respectively through 4—4, 5—5, and 6—6 of Fig. 2; and

Fig. 7 is an enlarged sectional view showing one method of securing the deck to the sides of the hull.

My hull structure, which is here shown embodied in a surf board, is so designed that it may be either molded in one or two pieces, or otherwise fabricated in several pieces and secured together at the adjacent edges by a welding, or other method hereinafter described. It is further so designed that it may be readily molded or fabricated from plastic materials, which provides an inherently flexible structure as well as one which is light of weight.

The surfboard, when considered in plan, as shown in Fig. 1, is of substantially the same shape as other surfboards now in use, and may also be substantially the size of those now in use. The general side view may also be quite similar to that of the side view of surfboards now in use, except that it may have greater depth, both near the forward end, as designated by A, and at the stern or tail end, as designated by B. In ordinary surfboards, this depth at the tail end may be approximately eight inches, that is, in such surfboard having a length of about fourteen feet and twenty-two to twenty-four inches beam.

The surfboard is represented generally as consisting of a hull 1 and a deck 2. Whereas the hull is variously shaped, the deck 2 is substantially flat, as in conventional surfboard construction.

The hull has laterally spaced keel portions 1^a and 1^b, having between them an inverted longitudinal channel 1^c. The keel portions 1^a and 1^b are inclined downwardly toward the rear end of the surfboard and they also converge toward their rear ends and merge into a single keel 1^d at the rear end portion of the surfboard, such portion with the single central keel beginning beyond the middle portion of the surfboard as shown. The transverse cross-section of the hull is substantially undulating in form. The bottom of the channel, which is the crest of the central undulation, extends backwardly from the front end of the bottom or hull structure to approximately the middle or less than the length of the surfboard. This crest of the middle undulation, designated 1^e, is so located with respect to the middle portion of the deck 2 that the latter ordinarily rests on this portion, as shown best in Fig. 4. The separated construction between the middle portion of the deck and the hull permits lateral movement of one with respect to the other, as well as vertical movement of one toward or from the other. In the event that the air within the hull expands, the deck may be lifted above the hull. Ordinarily this portion 1^e of the hull supports the middle portion of the deck.

The hull and deck may be molded as one piece, but they may be molded or otherwise fabricated in separate pieces and then welded or otherwise secured together at their corresponding edges so as to present a unitary structure, as shown in the drawings.

As shown, the edge of the deck 2 overlaps or overlies an outwardly directed flange 1^f at the upper edge of the side walls of the hull, and is secured thereto by rivets 3. Between the deck 2 and the flange 1^f I have shown a suitable gasket 4. The edges of the deck and the flange 1^f are bound or enclosed by a suitable covering 5, such as rubber, and this may be held in place by a cement 6.

This portion of the surf board which secures and seals the deck to the hull extends laterally beyond the hull so as to provide a convenient, rigid, and effective means for gripping and holding on to the surf board.

My surf board is so constructed that the greater buoyancy is at the aft end thereof so that a bather or other user of the surf board may rest upon a stern portion and allow the bow portion to be raised considerably above the surface of the water.

Though I have shown and described a particular construction, combination, and arrangement of parts and portions, I do not wish to be limited to the same, but desire to include in the scope of my invention the construction, combination, and arrangement substantially as set forth in the appended claims.

I claim:

1. In a structure of the class described, a hull having an undulating form in cross-section, and a deck supported at its lateral portions on the sides of the hull and intermediate the lateral portions on the crest portion of the undulating hull.

2. In a structure of the class described, a yielding hull having an undulating form in cross-section, and a deck secured at its lateral portions on the sides of the hull and adapted to be loosely supported intermediate its lateral portions on the crest portions of the undulating hull, said intermediate portion being capable of being separated from and raised above said crest by increase of pressure within the hull.

3. In a structure of the class described, a yielding hull having an undulating form in cross-section, and a deck secured and hermetically sealed at its lateral portions respectively to and with the sides of the hull and adapted to be loosely supported intermediate its lateral portions on the crest portions of the undulating hull, said intermediate portion being capable of being separated from and raised above said crest by increase of fluid pressure within the hull.

4. In a structure of the class described, a yielding hull having laterally spaced keels and an inverted longitudinal channel therebetween, and a deck secured at its lateral portions on the sides of the hull and adapted to be loosely supported intermediate said lateral portions on the portion of the hull forming said inverted channel.

5. In a structure of the class described, a yielding hull having laterally spaced keels and an inverted longitudinal channel therebetween, and a deck secured and hermetically sealed at its lateral portions respectively to and with the sides of the hull and adapted to be loosely supported intermediate said lateral portions on the portion of the hull forming said inverted channel, said intermediate portion being capable of being separated from and raised above said crest by fluid pressure within the hull.

6. In a structure of the class described, a yielding hull having laterally spaced keels and an inverted longitudinal channel therebetween, and a deck secured at its lateral portions on the sides of the hull and adapted to be loosely supported intermediate said lateral portions on the portion of the hull forming said inverted channel, each of said laterally spaced keels merging at the rear portion of the hull in a single central keel, said longitudinal channel decreasing in depth toward the rear end of the hull and disappearing at the juncture of said double and single keels.

7. In a structure of the class described, a yielding hull having laterally spaced keels and an inverted longitudinal channel therebetween, and a deck secured and hermetically sealed at its lateral portions respectively to and with the sides of the hull and adapted to be loosely supported intermediate said lateral portions on the portion of the hull forming said inverted channel, each of said laterally spaced keels merging at the rear portion of the hull in a single central keel, said longitudinal channel decreasing in depth toward the rear end of the hull and disappearing at the juncture of said double and single keels, said intermediate portion being capable of being separated from and raised above said crest by fluid pressure within the hull.

8. In a structure of the class described, a hull having laterally spaced keels and an inverted longitudinal channel therebetween, and a deck secured at its lateral portions on the sides of the hull and adapted to be loosely supported intermediate said lateral portions on the portion of the hull forming said inverted channel, each of said laterally spaced keels merging at the rear portion of the hull in a single central keel, said longitudinal channel decreasing in depth toward the rear end of the hull and disappearing at the juncture of said double and single keels; the portion of the hull having the central keel increasing in depth from the forward to the rear ends thereof.

9. In a structure of the class described, a yielding hull having an undulating form in cross-section, and a deck supported at its lateral portions on the sides of the hull and adapted to be loosely supported intermediate the lateral portions on the crest portion of the undulating hull.

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