PATENT SPECIFICATION (11) 1 572 391

1 572 391

(21) Application No. 48417/75 (22) Filed 25 Nov. 1975
(23) Complete Specification Filed 24 Nov. 1976
(44) Complete Specification Published 30 Jul. 1980
(51) INT. CL.³ B63B 35/72
(52) Index at Acceptance
B7V 102 133 AA

(19)



(54) IMPROVEMENTS IN OR RELATING TO WATER CRAFT

(71) I, JEREMY DAVID LE HARDY GUITON, a British Subject, of Oak Way, Itchenor, Sussex, England, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to water craft.

The present invention consists in a water craft comprising a pair of elongate float elements which are coupled together at or near their forward ends by means which allow each float to pivot relative to the other about a transversely extending, generally horizontal axis, the float element being so arranged and sufficiently buoyant to support a user who stands with one foot on each element, and a pair of fins formed of elastic material which extend rearwardly from respective float elements, at least part of each fin being adapted, when the associated float element is moved upwardly or downwardly in water, to move vertically relative to the said float element, whereby, in use, when the user presses downwardly alternately on one float element and then the other, each float element moves pivotally downwardly in the water when pressure is applied thereto and then pivotally upwardly as a result of its buoyancy when the pressure thereon is reduced, the upwards and downwards movement of the float elements causing a movement of at least part of each fin which lags behind the movement of the associated float element, and the attitudes assumed by each fin during the said movement being such that the fin generates a thrust having a component which causes the craft to be urged forwardly in the water.

The fins are preferably detachable from respective float elements so that the fins can be used separately as foot fins for swimming and the float elements can be used as wave or water skis, bathing rafts, sailing boats or canoes for children.

Preferably, each float element is formed with a recess for one of the user's feet. The recess preferably extends downwardly to a location at or near the bottom of the float element so as to provide a low centre of gravity for the user and float elements. Means may be provided at the bottom of each recess for releasably securing the float element to one of the user's feet. Alternatively, means may be provided for releasably securing an upper surface of each float element to one of the user's feet. In each case the releasable securing means allow accelerated upwards movement of the float element and assist control, if required.

Suitably, each float element is hollow. The element may be made of fibre reinforced plastics material, wood, light metal, rubber or fabric and may be air filled, inflatable or filled with a lightweight, closed-cell buoyant material such as polyurethane foam.

Suitably, the means coupling together the float elements allow pivotal movement of one float element relative to the other float element about a vertical axis and a flexible element may link together the rear ends of respective float elements and serve to prevent the rear ends from moving more than a predetermined distance apart, whereby an increase in transverse stability of the craft and a user is provided.

A paddle may be provided for engagement with the coupling means at or near the forward ends of the float elements, the paddle being used for steering purposes and serving also to increase the longitudinal stability of a user.

The invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is a side elevation of a water craft according to the invention in use; and

Figure 2 is a plan view of the craft of Figure 1.

The water craft shown in the drawings is a 'sea-walking' craft which can also be used for surfing, water skiing or sailing, as a bathing raft, or to provide canoes for children.

The craft includes a pair of elongated parallel arranged floats 1 each of which has a fin 3 extending from its rearward end. The forward ends of the floats are coupled together by means of a joint 5 whilst the rearward ends are linked by a distance cord 7.

Each elongated float 1 in the present craft has a hollow section which is generally rectangular but with rounded corners. Forward and rearward parts of each float 1 are tapered, as viewed in lan, and the forward part is curved upwardly, as viewed in elevation. As viewed in plan, each float 1 is symmetrical about its longitudinal axis so as to reduce twisting moments. The floats 1 are 6 feet 11 inches in length and have a maximum width of 8 inches and a maximum depth at mid-length of 9 inches. On the bottom of each float 1 there are no protuberances which can collect weeds, debris, ropes, mud etc.

An aperture 9 is formed in a top wall of each float 1 so that a user can place his foot into an elongated recess 11 defined by the hollow interior of the float and stand on the bottom wall. A plastic cover 13 is provided for preventing water from entering the recess 11. At its periphery the cover 13 is attached to the edge of the aperture 9 in the top wall of a float 1. At the centre of the cover 13 there is an aperture around which there is an elastic cord 15 for securing the cover to the user's leg.

The joint 5 at the forward end of the craft is primarily to allow one float 1 to pivot relative to the other about a horizontal axis extending perpendicular to the floats. Limited movement about longitudinal and vertical axes is also possible, however.

Each fin 3 at the rear of the craft is made of rubber. The fins 3 are releasably secured to respective floats 1.

For steering purposes the craft is also provided with a single paddle 17, shown in full lines in Figure 1, or a pair of paddles 19, shown in dashed lines. The paddles 17 and 19 may also be used to increase the speed of forward movement or to provide rearward movement.

In use, the user stands with each foot on the bottom wall of the recess 11 in one of the floats 1 and with a plastic cover 13 tied to each leg.

If the user employs only a single paddle 17, the paddle is provided with a hook which is engaged with the joint 5 at the front of the craft, as shown in full lines in Figure 1. The blade of the paddle 17 is upright and the paddle is partly submerged to form a forward rudder. This arrangement also adds to the longitudinal stability of a user of the craft, enabling the user to lean forwards or backwards whilst holding the shaft of the paddle, so maintaining his balance during wave encounter, grounding etc. Additionally, the single paddle may be used with a sculling action to provide rearward motion. Alternatively, if two paddles 19 are employed, a paddle is held in each hand, with the top of the shaft looped to each upper arm.

With the user aboard, each float 1 is submerged to a depth of approximately 6 inches in the region of the float adjacent to the recess 11 therein i.e., there is approximately 3 inches of the float above the water level at this region.

To propel the craft forwardly the user bears downwardly, first on one float 1 and then on the other. When pressure is applied, each float 1 is forced downwardly into the water, pivoting relative to the other float about the joint 5 at the forward end of the craft. The float 1 then moves upwardly under its natural buoyancy when the pressure is removed.

As each float 1 moves upwardly or downwardly a corresponding movement of the fin 3 at the rear of the float is opposed by the resistance of the water. Since each fin 3 is made of rubber it is able to bend in the face of this water resistance and there is a phase lag between the movements of the rear end of a fin 3 and the movements of its forward end. By virtue of the attitudes which each fin 3 assumes relative to the water it generates a thrust having a component which has the effect of urging the craft forwardly.

Once the craft is moving forwardly it is steered in the desired direction by means of the paddle 17 or the paddles 19. If required, the speed of forward movement is increased by using the paddle 17 or paddles 19.

Rearward motion may be provided by the use of the paddle 17 in a sculling action over the joint 5 at the forward end of the craft, or by using the two paddles 19.

The distance cord enables the user's legs, and hence the rearward ends of the floats, to be parted, yet prevents the rearward ends of the floats from moving more than a predetermined distance apart. This provides an increase in transverse stability, during wave encounter or rest periods, for example.

The present craft enables the user to move over the water fully clothed yet without the need for a conventional boat. It is suitable for use in taking exercise, bird watching, fishing, shooting, as a tender for small Keelboats or boats on moorings (one person walking out on the craft and bringing the boat alongside for the other members of the crew to embark) or as a life-saving aid for small cruising boats. The craft is readily portable, involves a minimum amount of equipment and is compact for stowing aboard another boat or carrying in a car. The floats 1 may also be de-

coupled to assist transport, stowage and walking on land.

Of equal or greater importance is the use of the craft for water sports, when the user is wearing bathing gear or wet suit.

For example, the craft can be used for wave skiing (surfing) when the elongated recesses 11 provide longitudinal stability. They can be used as water skis for use when towed behind a sailing or other slow-speed boat, as a bathing raft or as a canoe for small children. Alternatively, the user may use the craft for sailing by employing a conventional or hand-held sail.

All of these sporting activities may also be undertaken with the two floats 1 decoupled, with or without a connecting bridge between the floats, and with or without the fins 3 attached.

WHAT I CLAIM IS:—

1. A water craft comprising a pair of elongated float elements which are coupled together at or near their forward ends by means which allow each float to pivot relative to the other about a transversely extending, generally horizontal axis, the float elements being so arranged and sufficiently buoyant to support a user who stands with one foot on each element, and a pair of fins formed of elastic material which extend rearwardly from respective float elements, at least part of each fin being adapted, when the associated float element is moved upwardly or downwardly in water, to move vertically relative the said float element, whereby, in use, when the user presses downwardly alternately on one float element and then the other, each float element moves pivotally downwardly in the water when pressure is applied thereto and then pivotally upwardly as a result of its buoyancy when the pressure thereon is reduced, the upwards and downwards movement of the float elements causing a movement of at least part of each fin which lags behind the movement of the associated float element, and the attitudes assumed by each fin during the said movement being such that the fin generates a thrust having a component which causes the craft to be urged forwardly in the water.

2. A water craft as claimed in claim 1, wherein the fins are detachable from respective float elements.

3. A water craft as claimed in claim 1 or 2, wherein each float element is formed with a recess for one of the user's feet.

4. A water craft as claimed in claim 3, wherein the recess extends downwardly to a location at or near the bottom of the float element so as to provide a low centre of gravity for the user and float elements.

5. A water craft as claimed in claim 3 or 4, wherein means are provided at the bottom of each recess for releasably securing the float element to one of the user's feet.

6. A water craft as claimed in claim 1 or 2, wherein means are provided for releasably securing an upper surface of each float element to one of the user's feet.

7. A water craft as claimed in any one of the preceding claims, wherein each float element is hollow.

8. A water craft as claimed in any one of the preceding claims, wherein the means coupling together the float elements allow pivotal movement of one float element relative to the other float element about a vertical axis, and a flexible element links together the rear ends of respective float elements and serves to prevent the rear ends from moving more than a predetermined distance apart, whereby an increase in transverse stability of the craft and a user is provided.

9. A water craft as claimed in any one of the preceding claims, wherein at least one paddle is provided for steering purposes.

10. A water craft as claimed in any one of claims 1 to 8, wherein a paddle is provided for engagement with the coupling means at or near the forward ends of the float elements, the paddle being used for steering purposes and serving also to increase the longitudinal stability of a user.

11. A water craft as claimed in any one of the preceding claims, wherein the two float elements are releasably coupled together at or near their forward ends, whereby the float elements can be decoupled to enable the user to employ the float elements for walking on land.

12. A water craft as claimed in any one of the preceding claims, wherein, as viewed in plan, each float element is symmetrical about its longitudinal axis.

13. A water craft constructed, arranged and adapted to operate substantially as hereinbefore described with reference to, and as illustrated in, the accompanying drawings.

MATHYS & SQUIRE,
Chartered Patent Agents,
10 Fleet Street,
London EC4Y 1AY.
Agents for the Applicant.

Printed for Her Majesty's Stationery Office,
by Croydon Printing Company Limited, Croydon, Surrey, 1980.
Published by The Patent Office, 25 Southampton Buildings,
London, WC2A 1AY, from which copies may be obtained.

coupled to assist transport, stowage and walking on land.

Of equal or greater importance is the use of the craft for water sports, when the user is wearing bathing gear or wet suit.

For example, the craft can be used for wave skiing (surfing) when the elongated recesses 11 provide longitudinal stability. They can be used as water skis for use when towed behind a sailing or other slow-speed boat, as a bathing raft or as a canoe for small children. Alternatively, the user may use the craft for sailing by employing a conventional or hand-held sail.

All of these sporting activities may also be undertaken with the two floats 1 decoupled, with or without a connecting bridge between the floats, and with or without the fins 3 attached.

WHAT I CLAIM IS:—

1. A water craft comprising a pair of elongated float elements which are coupled together at or near their forward ends by means which allow each float to pivot relative to the other about a transversely extending, generally horizontal axis, the float elements being so arranged and sufficiently buoyant to support a user who stands with one foot on each element, and a pair of fins formed of elastic material which extend rearwardly from respective float elements, at least part of each fin being adapted, when the associated float element is moved upwardly or downwardly in water, to move vertically relative the said float element, whereby, in use, when the user presses downwardly alternately on one float element and then the other, each float element moves pivotally downwardly in the water when pressure is applied thereto and then pivotally upwardly as a result of its buoyancy when the pressure thereon is reduced, the upwards and downwards movement of the float elements causing a movement of at least part of each fin which lags behind the movement of the associated float element, and the attitudes assumed by each fin during the said movement being such that the fin generates a thrust having a component which causes the craft to be urged forwardly in the water.

2. A water craft as claimed in claim 1, wherein the fins are detachable from respective float elements.

3. A water craft as claimed in claim 1 or 2, wherein each float element is formed with a recess for one of the user's feet.

4. A water craft as claimed in claim 3, wherein the recess extends downwardly to a location at or near the bottom of the float element so as to provide a low centre of gravity for the user and float elements.

5. A water craft as claimed in claim 3 or 4, wherein means are provided at the bottom of each recess for releasably securing the float element to one of the user's feet.

6. A water craft as claimed in claim 1 or 2, wherein means are provided for releasably securing an upper surface of each float element to one of the user's feet.

7. A water craft as claimed in any one of the preceding claims, wherein each float element is hollow.

8. A water craft as claimed in any one of the preceding claims, wherein the means coupling together the float elements allow pivotal movement of one float element relative to the other float element about a vertical axis, and a flexible element links together the rear ends of respective float elements and serves to prevent the rear ends from moving more than a predetermined distance apart, whereby an increase in transverse stability of the craft and a user is provided.

9. A water craft as claimed in any one of the preceding claims, wherein at least one paddle is provided for steering purposes.

10. A water craft as claimed in any one of claims 1 to 8, wherein a paddle is provided for engagement with the coupling means at or near the forward ends of the float elements, the paddle being used for steering purposes and serving also to increase the longitudinal stability of a user.

11. A water craft as claimed in any one of the preceding claims, wherein the two float elements are releasably coupled together at or near their forward ends, whereby the float elements can be decoupled to enable the user to employ the float elements for walking on land.

12. A water craft as claimed in any one of the preceding claims, wherein, as viewed in plan, each float element is symmetrical about its longitudinal axis.

13. A water craft constructed, arranged and adapted to operate substantially as hereinbefore described with reference to, and as illustrated in, the accompanying drawings.

MATHYS & SQUIRE,
Chartered Patent Agents,
10 Fleet Street,
London EC4Y 1AY.
Agents for the Applicant.

Printed for Her Majesty's Stationery Office,
by Croydon Printing Company Limited, Croydon, Surrey, 1980.
Published by The Patent Office, 25 Southampton Buildings,
London, WC2A 1AY, from which copies may be obtained.