United States Patent [19]

Gibson

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[45] **Feb. 6, 1973**

[54] **WATER FLOAT WITH PADDLE EXTENSION MEANS**

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[52] **U.S. Cl.** ..... **115/28 R**

[51] **Int. Cl.** **B63h 1/32**

[58] **Field of Search** ..... 115/28, 29, 30; 9/310 J; 416/81, 82, 79

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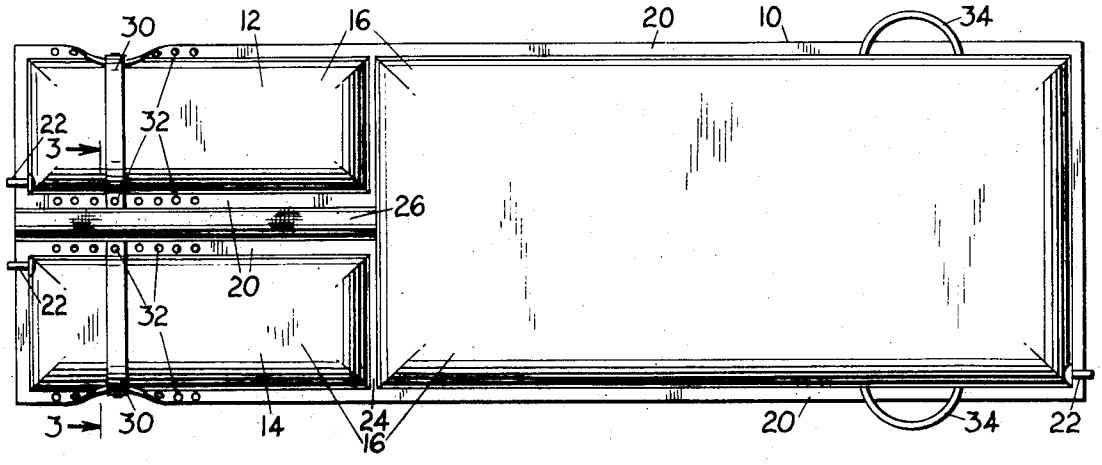
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Assistant Examiner—Jesus D. Sotelo
Attorney—Eugene W. Eckelman

[57] **ABSTRACT**

A water float having a buoyant body portion and buoyant rear paddle portions hinged to the body portion. The two rear paddle portions are connected to the body portion by hinge means and have foot straps secured thereto. Upon lying on the float with the feet connected under the foot straps, a person can produce an up and down motion of the paddle portions to propel the float through the water. The paddle portions may be formed integrally with the body portion or may be detachable therefrom. Fins and flanges may be added to the paddles to increase the propelling efficiency thereof.

16 Claims, 17 Drawing Figures

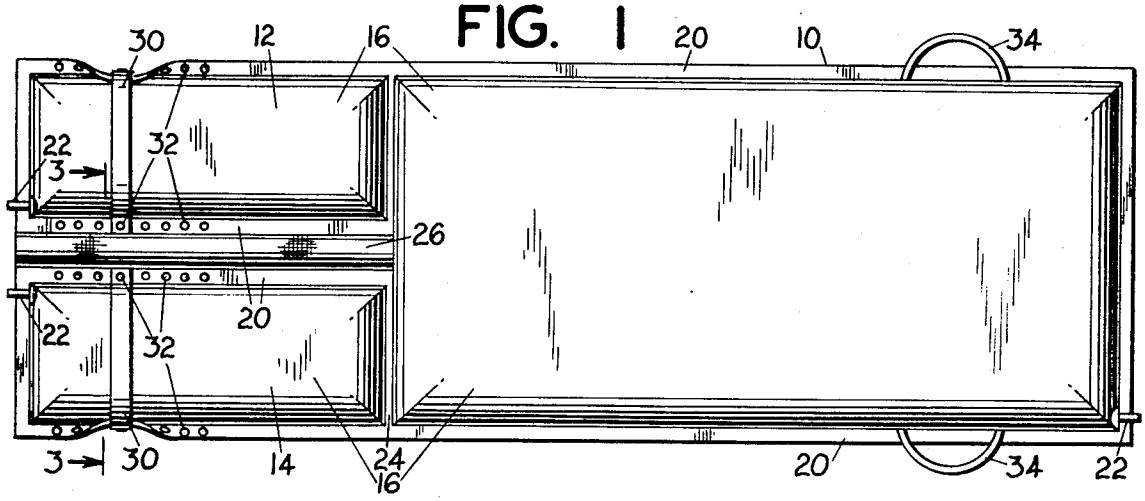


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FIG. 1



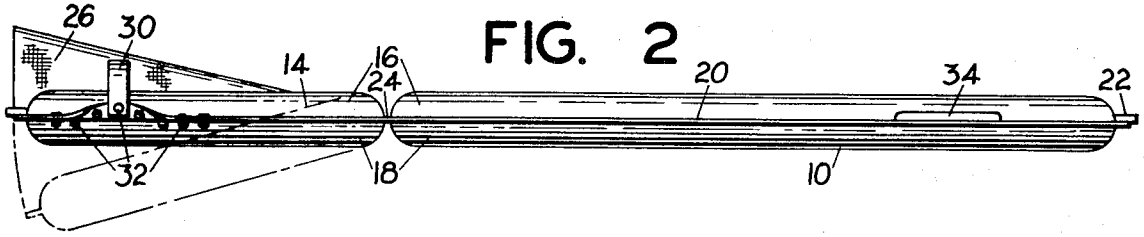


FIG. 2

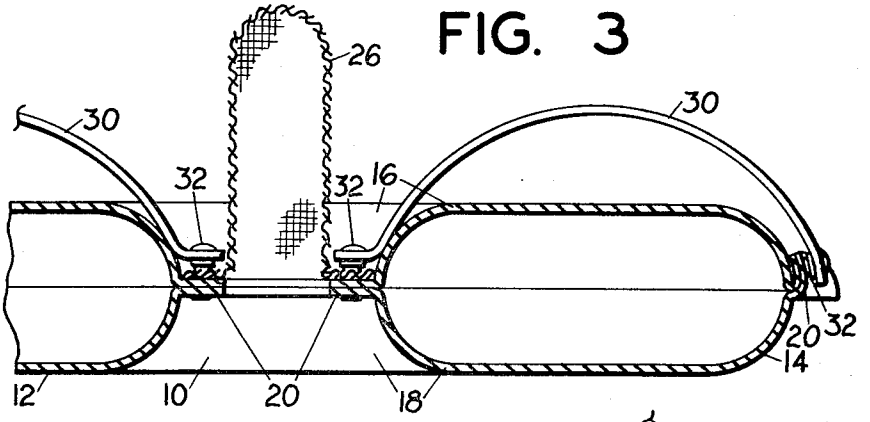


FIG. 3

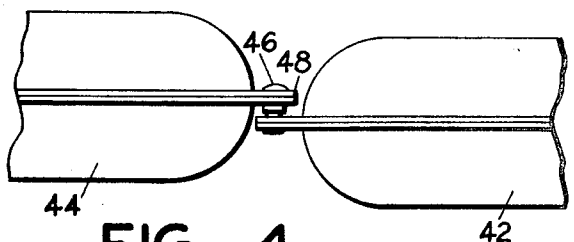


FIG. 4

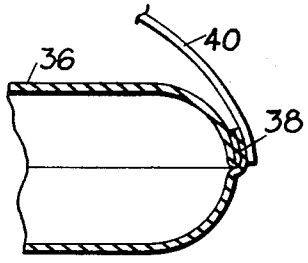


FIG. 5

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FIG. 11

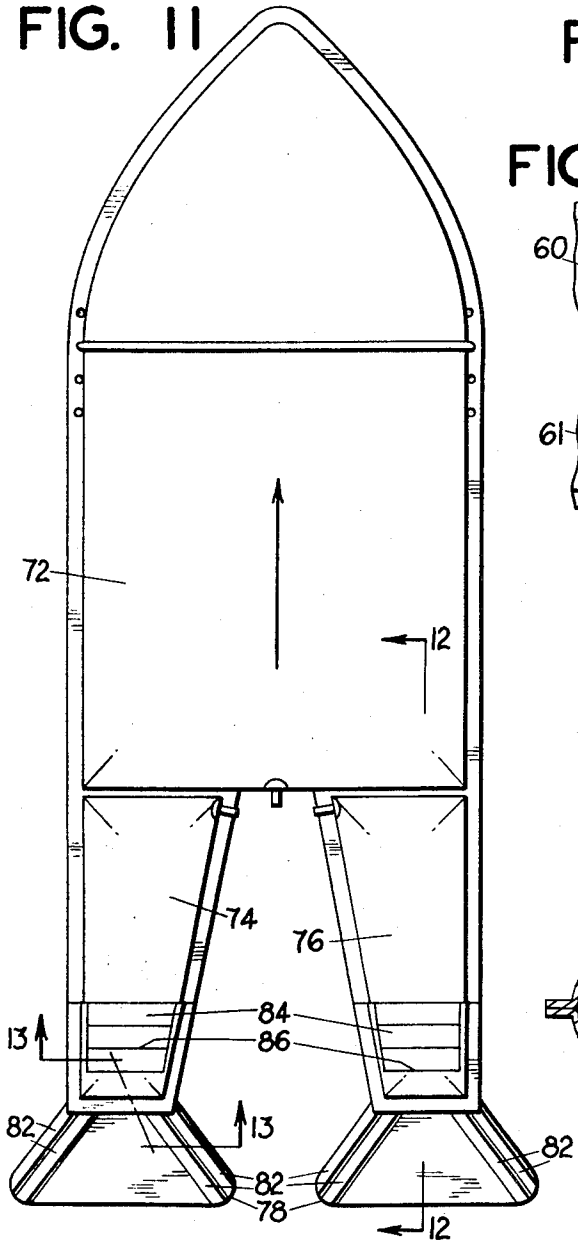


FIG. 6

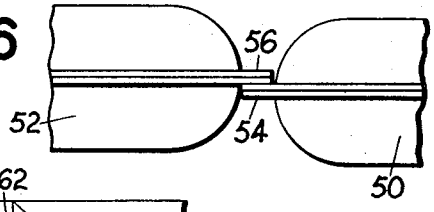


FIG. 7

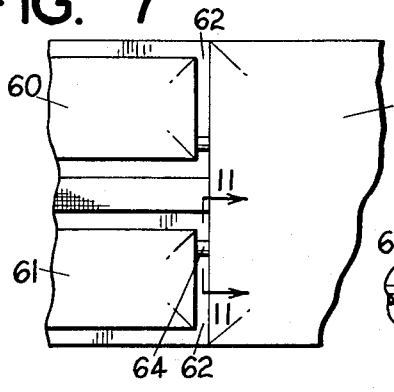
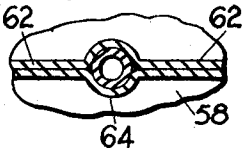


FIG. 8



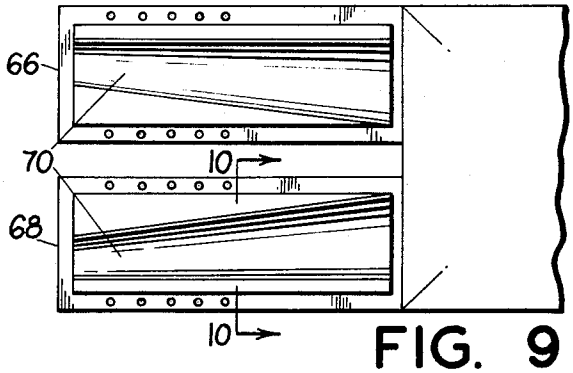


FIG. 9

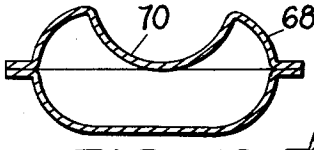


FIG. 10

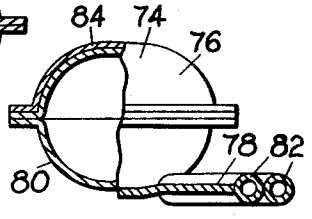


FIG 13

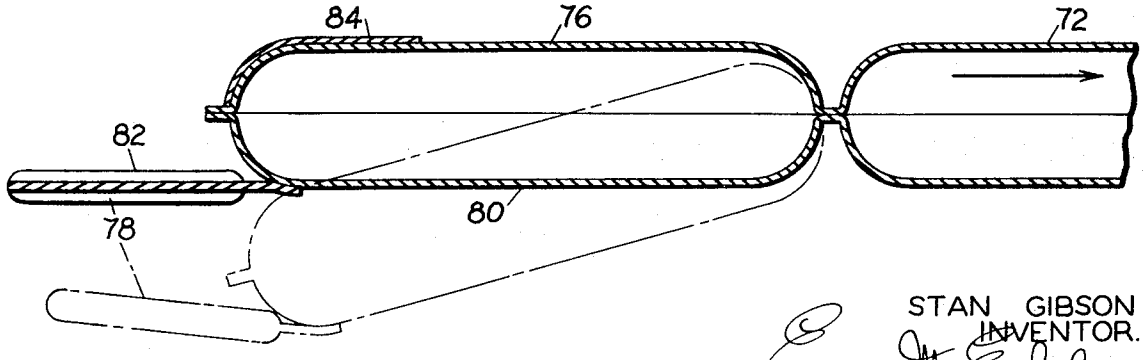


FIG. 12

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FIG. 14

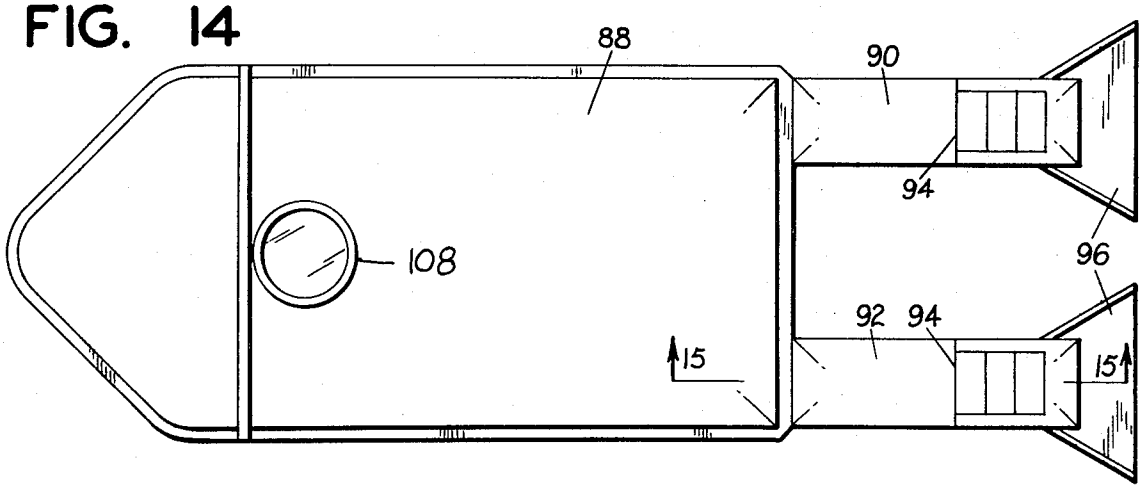


FIG. 15

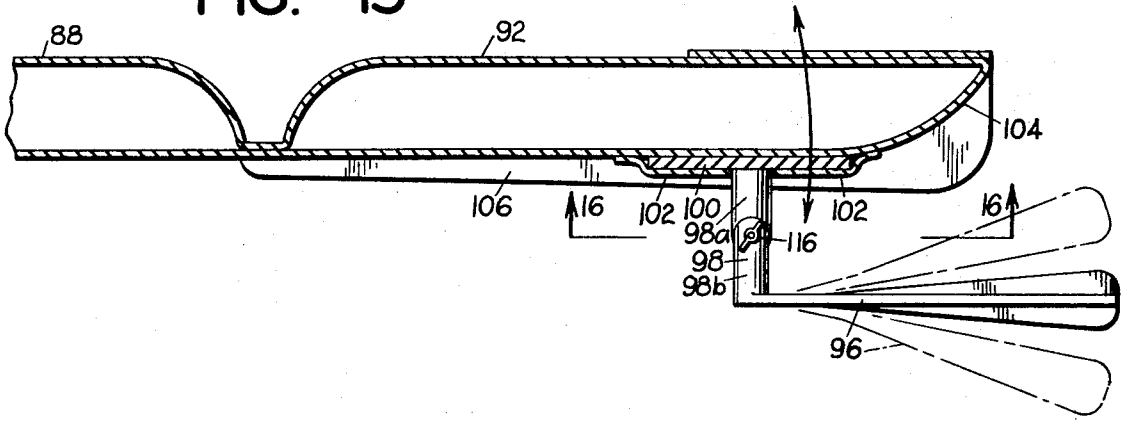
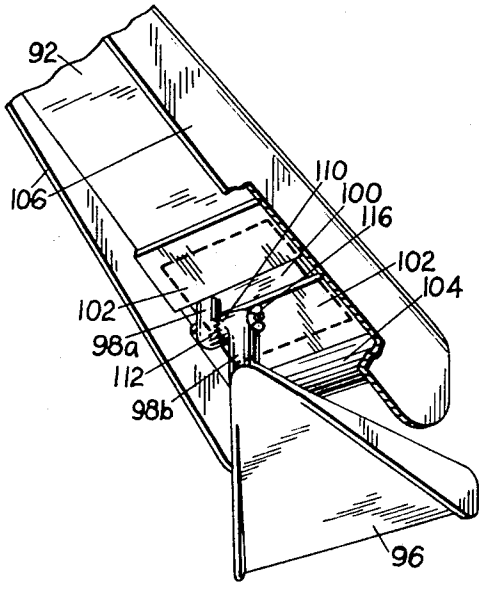


FIG. 17



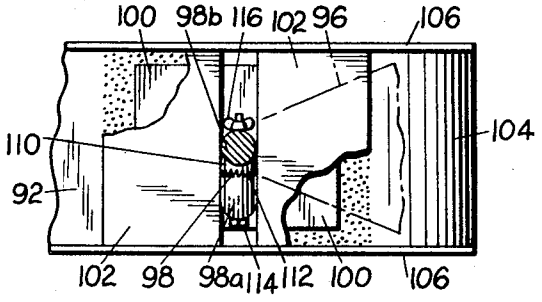


FIG. 16

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WATER FLOAT WITH PADDLE EXTENSION MEANS

This invention relates to new and useful improvements in water floats of the type adapted to support persons thereon.

According to the present invention and forming a primary objective thereof, a water float is provided having propulsion means in the form of end paddles capable of pivotal movement by the operator for propelling the float on the water.

More particular objects of the present invention are to provide a float of the type described which has a buoyant body portion and buoyant paddle portions hingedly connected to the rearward end of the body portion and adapted to be reciprocated in a paddling motion for propelling the float; which has a web connected between the paddle portions limiting and determining the length of the paddling strokes; and which employs foot straps capable of adjustment longitudinally of the float to accommodate persons of different heights.

Still another object of the invention is to provide a float of the type described having paddle portions, with the connection between the body portion of the float and the paddle portions comprising a flexible flange connection which by its flexibility also serves as a hinge. It is also an object to provide a modified form of the structure just described wherein the hinged connection between the body portion and the paddle portions is detachable so that the paddle portions can be removed for operation of the float by itself.

Yet other objects are to provide a contoured surface in the paddle portions for receiving body portions of an operator and to provide fins and flanges on the paddle portions to increase propelling efficiency of said paddle portions.

The invention will be better understood and additional objects and advantages will become apparent from the following description taken in connection with the accompanying drawings which illustrate preferred forms of the float.

In the drawings:

FIG. 1 is a top plan view of a water float embodying principles of the present invention;

FIG. 2 is a side elevational view of the float and showing in phantom lines a stroke position of a paddle portion thereof;

FIG. 3 is an enlarged fragmentary cross sectional view taken on the line 3—3 of FIG. 1;

FIG. 4 is an enlarged fragmentary rear elevational view showing a modified form of connection between the body portion of the float and a foot strap;

FIG. 5 is a fragmentary side elevational view showing a modified form of connection of the paddle portions to the body portion;

FIG. 6 is a fragmentary side elevational view showing still another form of connecting the paddle portions to the body portion;

FIG. 7 is a fragmentary plan view illustrating alternative means of construction wherein the body portion and paddle portions have common inflating passageways;

FIG. 8 is an enlarged fragmentary cross sectional view taken on the line 8—8 of FIG. 7;

FIG. 9 is a fragmentary plan view showing an alternative form of paddle construction;

FIG. 10 is a fragmentary cross sectional view taken on the line 10—10 of FIG. 9;

FIG. 11 is a top plan view of another form of the invention;

FIG. 12 is an enlarged fragmentary sectional view of the embodiment of FIG. 11, taken on the line 12—12 of FIG. 11;

FiG. 13 is a sectional view taken on the line 13—13 of FIG. 11;

FIG. 14 is a top plan view of still another form of the invention;

FIG. 15 is an enlarged fragmentary sectional view taken on the line 15—15 of FIG. 14;

FIG. 16 is a fragmentary sectional view taken on the line 16—16 of FIG. 15; and

FIG. 17 is a fragmentary bottom perspective view of a paddle portion of the structure of FIG. 14.

Referring now in particular to the drawings, and first to FIGS. 1-3, a first form of float of the present invention comprises basically a body portion 10 and a pair of paddle portions 12 and 14. Body portion 10, as well as paddle portions 12 and 14 are buoyant, and in one construction, as shown, such portions are inflatable. In such constructions, a pair of top and bottom layers of waterproof material 16 and 18 are bonded together around the edge, forming a peripheral flange 20. The central portion of the body portion as well as the paddle portions may have individual inflatable compartments as in the usual air mattress construction. Valve means 22 are provided in the body and paddle portions for inflating them. These valves are in common usage and are not therefore detailed.

As best seen in FIGS. 1 and 2, the paddle portions 12 and 14 comprise rearward extensions of body portion 10. The connection between the body portion and the paddle portions comprises a hinged connection 24 whereby the paddle portions may be moved up and down between the full line and phantom line positions shown in FIG. 2. Hinge connection 24 may comprise a laterally extending flange formed by bonding or otherwise securing a transverse strip of the upper and lower layers 16 and 18 together.

Paddle portions 12 and 14 are parallel in longitudinal disposition and are spaced laterally to allow free up and down working movement thereof. The space between the paddles is spanned by a web 26 of flexible material bonded along its side edges to the flanges 20. Web 26 is looped upwardly, providing an excess of material to allow up and down working motion of the paddle portions. As best seen in FIG. 2, the web 26 is tapered downwardly toward the hinge 24. This web serves as limit means to fix the maximum stroke positions of the paddle portions and preferably is of mesh material to allow free movement thereof up and down in the water with said paddle portions.

Foot straps 30 are provided on each paddle, and as apparent in FIGS. 1-3, these straps extend transversely of the paddles adjacent to the rearward end thereof. In one form of construction, foot straps 30 are connected at their ends to the flanges 20 by snaps 32 of the usual construction which employ male and female snap portions. By means of such connections, a plurality of snap portions may be spaced along the flanges 20 for selective engagement by the other snap portions on the foot straps. Thus, the foot straps are capable of forward and rearward adjustment to accommodate persons of different heights. As best seen in FIG. 3, it is preferred that the snap portions which are carried on the outside

flanges **20** be placed on the underside thereof so that the pull on the strap from a paddling motion by the operator's foot will pull edgewise on the snaps on such flanges to provide a stronger snap connection.

Body portion **10** has a pair of side handles **34** for gripping by the operator.

In the operation of the present float, the operator preferably lies face down on the body portion with his knees disposed at about the hinge **24** between the body portion and the paddle portions. The operator hooks the forward portion of his feet under the straps **30**, and by up and down paddling motion, the float is propelled forwardly. The operator adjusts the straps **30** on the snaps **32** to the selected position for fitting his feet in the proper manner.

FIG. **4** illustrates a removable connection between the float body portion **42** and the paddle portions **44**. For this purpose said portions **42** and **44** are separate pieces and the connection is accomplished by snaps **46** provided on peripheral flange portions **48** on the body portion and the paddle portions. This construction has the advantage that the body portion **42** can be used by itself as a float or with the paddles attached thereto as a paddling device.

FIG. **5** illustrates an alternative form of attaching a foot strap to the paddles. In this construction, the paddle portion is designated by the numeral **36** and the peripheral flange is designated by the numeral **38**. Rather than have snap connection to the paddle portions, the foot strap **40** is bonded to the flange, preferably on the lower surface thereof so that forces applied to the strap will pull along the line of the joint.

FIG. **6** shows another embodiment wherein the body portion **50** and paddle portions **52** comprise separate pieces but the connection therebetween comprises a bonded connection **54** between peripheral flanges **56** of the two parts. By means of this structure, the paddle portions may be manufactured and sold separately and later attached to existing floats. Connection **54** may comprise any suitable adhesive or welded connection as well known in the art.

In FIG. **7** an embodiment is provided wherein the inflatable area of body portion **58** is in communication with the inflatable areas of paddle portions **60** and **61** for simultaneous inflation and deflation. This is accomplished by providing hinge connection **62** with longitudinal tubular passageways **64** which extend between the interior of the body portion **58** and the interiors of paddle portions **60** and **61**. By means of this structure, a single pump valve need only be provided on any one of the body portion or paddles.

In the embodiment shown in FIGS. **9** and **10**, paddle portions **66** and **68** have upper surface recesses **70** which extend longitudinally of the paddle portions and are arranged to receive leg portions of the operator. Such provides a more comfortable fitting to the legs than does a flush surface. In a preferred arrangement the recesses **70** diverge toward the rear relative to each other to assume a normal leg position of the operator lying on the float for comfort.

In FIGS. **11** and **12**, a float body portion **72** has paddle portions **74** and **76** provided with fins **78**. As best seen in FIG. **12**, the fins may be secured, as by welding or by adhesive, to the bottom layer **80** of the paddle portions and each has one or more longitudinally extending inflated portions **82** which impart rigidity to the fins. In the operation, the fins **78** assist in the propelling function of the paddle portions by treading water as do the conventional swim fins. The position of the fins in the down position of the paddle portion is illustrated in phantom lines in FIG. **12**.

The embodiment of FIG. **11** employs front opening pockets **84** into which the forward end of the operator's foot extends for obtaining a grip on the paddle portions. The upper surfaces of the pockets are marked into segments **86** and a person may cut out one or more segments starting from the front to fit his particular leg length. The segments have both lateral and longitudinal markings for guidance in cutting the pocket back to the desired fitting.

FIGS. **14–17** show an embodiment similar to the embodiment of FIGS. **11** and **12** wherein fins are employed. This embodiment has a body portion **88** and paddle portions **90** and **92**. Pockets **94** are provided on the upper surface of the paddle portions to receive the operator's feet.

In the embodiment of FIGS. **14–17**, fins **96** hang from the bottoms of the paddle portions by stems **98**. The stems may be secured to the paddle portions in any suitable manner but preferably they are removably attached so that the float can be used with or without the fins. To provide a removable attachment of the fins to the paddle portions, the fins have upper integral rigid or semi-rigid plates **100** which have removable reception in a pocket formed by a pair of flaps **102** secured to the underside of the paddle portions in spaced relation. The plates **100** are mounted in place by forcing them under the flaps, and for this purpose said flaps may have some resiliency.

FIG. **15** illustrates in phantom lines the treading action of the fins when the paddle portion is operated. Such treading action assists in the propelling function of the paddle portions.

In the embodiment of FIG. **15**, the rearward ends **104** of the paddle portions have a convex curvature to provide a good forward pushing action against the water in the downstroke. Each paddle portion has side wall extensions **106** extending below the bottom surface of the paddle portions. These wall extensions confine the water therebetween in the downstroke of the paddle portions and thus contribute to efficient impingement of the water against the convex end portions **104** for providing an increased push.

Float body portion **88** in the embodiment of FIG. **14**, or in any other of the embodiments, can have an opening **108** therethrough covered by a transparent material for viewing underwater. This embodiment also illustrates that the two paddle portions are not connected by an intermediate web, such as the web **26**, for example, of FIG. **1**.

It may be desirable that the fins **96** be adjustable to different angles relative to the paddle portions **92**, and for this purpose, said stem is formed of two parts **98*a*** and **98*b***. These two parts have integral toothed projections **110** and **112** which are held in mated engagement by a transversely extending bolt **114** having a wing nut **116** threadedly mounted thereon. The mating projections are releasable from each other for angular adjustment of stem part **98*b*** by loosening the wing nut.

According to the invention and all its embodiments, it can serve as a recreational float and if desired it can be propelled by the operator hooking his feet under the foot straps and moving the paddle portions up and down. The float may comprise a life preserver and could be automatically inflated in a manner now well known. Also, it may be desirable that a portion of the float carry a piece of buoyant material such as styrafoam therein to insure buoyancy of the float and its occupant even though the air should accidentally leak out. The float could also serve as an aid for beginners to achieve proper coordination of leg movement. It is to be understood that the forms of my invention herein shown and described are to be taken as preferred examples of the same and that various changes in the shape, size and arrangements of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A water float comprising
   a. a body portion having forward and rearward ends and an upper surface on which an operator is arranged to lie,
   b. said body portion having a substantially flat upper surface and being of a length and width to support the body of an operator,
   c. said body portion being sufficiently buoyant to support an operator on a water surface,
   d. buoyant paddle means pivotally connected to the rearward end of said body portion by lateral axis hinge means,
   e. said paddle means being of a length to support the legs and feet of the operator,
   f. and foot engaging means on said paddle means arranged to connect an operator's foot to said paddle means for operation of said paddle means in up and down pivot movement to propel the float on the water.

2. the float of claim 1 wherein said paddle means includes two paddle portions operable independently of the other.

3. The float of claim 2 wherein said paddle means are inflatable for buoyancy.

4. The float of claim 2 including a flexible web connected between the paddle portions and extending from the front to the rear thereof.

5. The float of claim 1 wherein said foot engaging means comprises laterally extending straps.

6. The float of claim 5 wherein said straps are adjustable forwardly and rearwardly relative to the paddles to accommodate different height swimmers.

7. The float of claim 1 wherein the connection between said body portion and paddle means comprises a detachable connection whereby said body portion can be used without the paddles.

8. The float of claim 1 wherein said paddle means has flexible side flanges and said foot engaging means comprises laterally extending straps, said straps being connected to the underside of said flanges.

9. The float of claim 1 wherein said body portion and said paddle means are inflatable for buoyancy.

10. The float of claim 9 wherein the inflatable areas of said body portion and said paddle means are in communication for simultaneous inflation and deflation.

11. The float of claim 1 wherein said paddle means includes two paddle portions operable independently of the other, and means defining recesses in the upper surfaces of said paddle portions, said recesses being disposed in rearwardly divergent direction relative to each other.

12. The float of claim 1 including fins attached to the rearward portion of said paddle portions to assist in the forward propelling motion of the latter.

13. The float of claim 1 including fins attached to the rearward portion of said paddle portions to assist in the forward propelling motion of the latter, and means arranged to adjust said fins angularly with relation to said paddle portions.

14. The float of claim 1 including fins attached to the rearward portion of said paddle portions to assist in the forward propelling motion of the latter, said body portion and said paddle means being inflatable for buoyancy, said fins having longitudinally extending inflatable areas to impart longitudinal rigidity thereto.

15. The float of claim 1 including fins attached to the rearward portion of said paddle portions to assist in the forward propelling motion of the latter, said fins being removably attached to said paddle portions for use of the paddle portions with or without said fins.

16. The float of claim 1 wherein said paddle portions have a rearward end assuming a convex curvature to impart a pushing action to the float as the paddle portions move downwardly in the water, and side wall extensions leading downwardly below the bottom of said paddle portions on each side of the latter to confine water therebetween for efficient impingement thereby of said convex rearward end.

* * * * *