Feb. 25, 1958 M. P. BUDNEY ET AL 2,824,539

WATERCYCLE

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Fig. 1

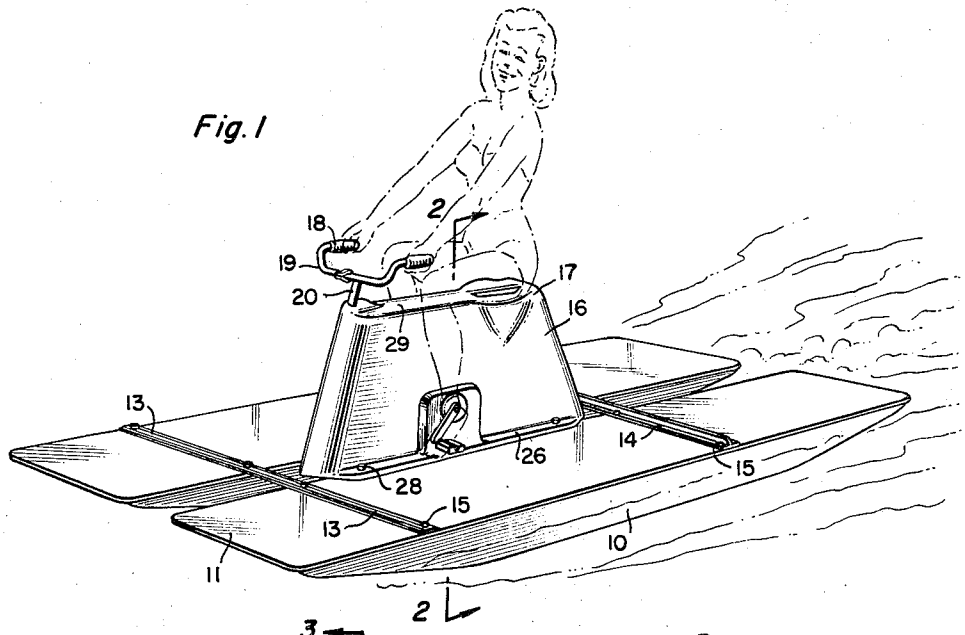
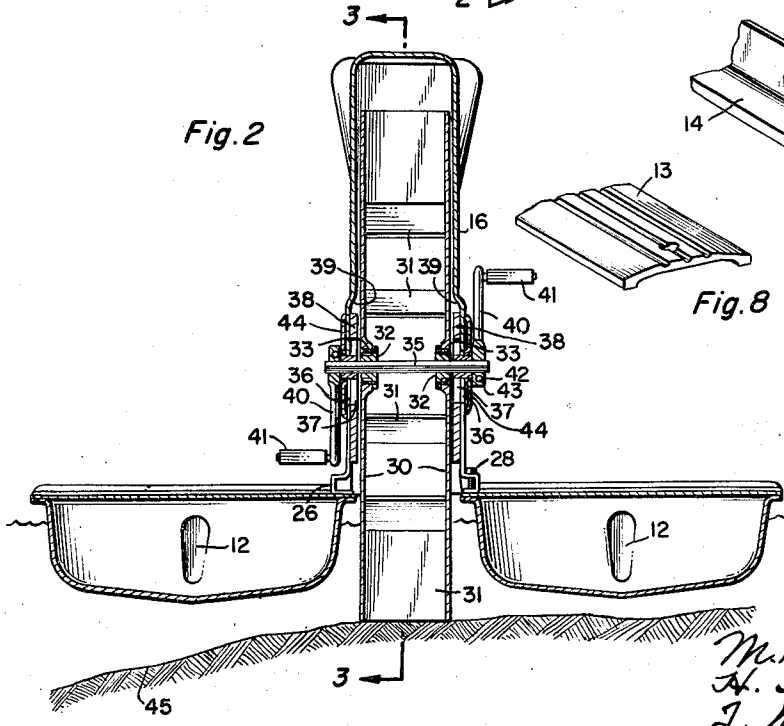


Fig. 2



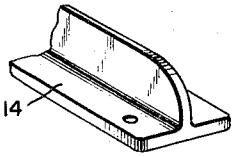


Fig. 9

Fig. 8

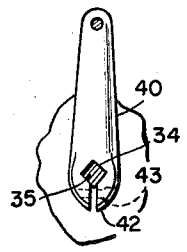


Fig. 10

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WATERCYCLE

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Fig. 3

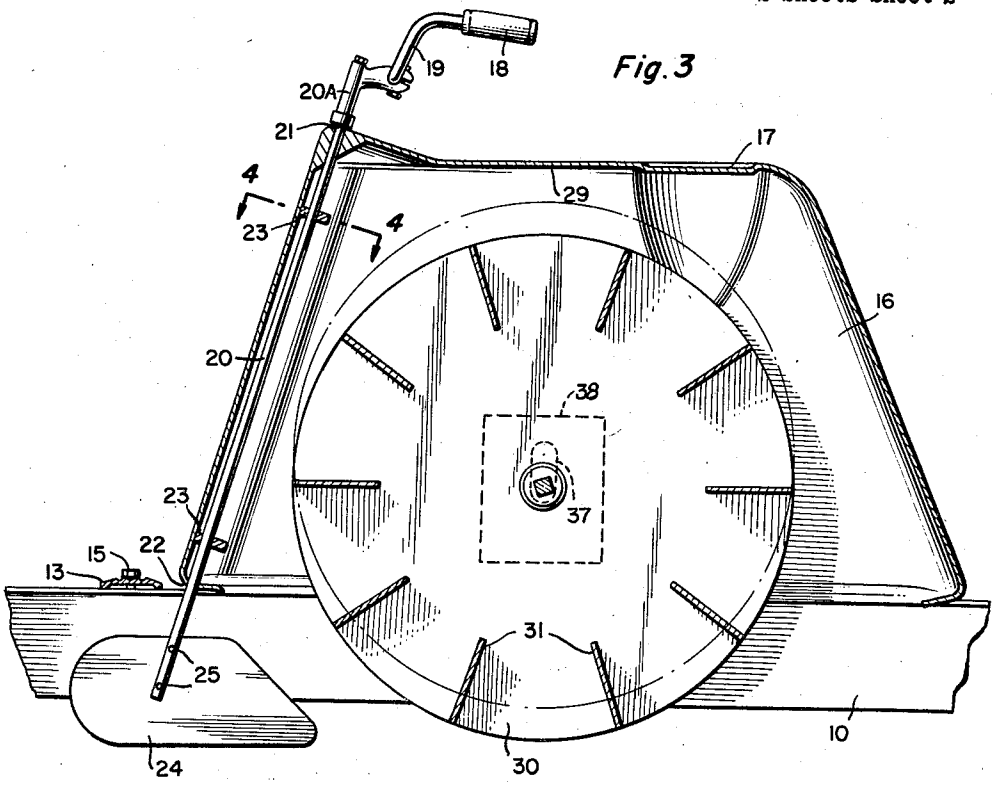


Fig. 4

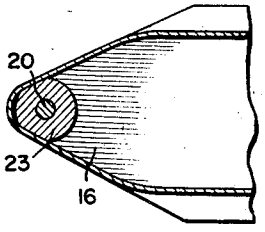


Fig. 5

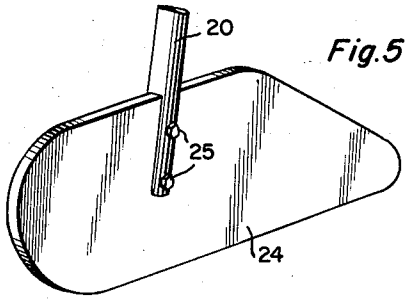


Fig. 6

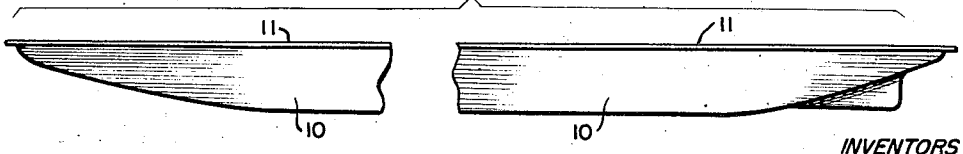
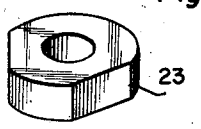


Fig. 7



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WATERCYCLE

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Application June 9, 1955, Serial No. 514,266

1 Claim. (Cl. 115—26)

This invention relates to sportscraft and the like and more particularly to that used in connection with the water such as, for example, a float including that powered by the rider for propelling the same over the surface of the water.

The invention is concerned specifically with a watercycle for recreational use by an individual on the water around resorts, amusement parks and the like for providing desired exercise, rest, and relaxation, as well as for improving the appetite and promoting the non-hazardous exercise of the various parts of the human body.

Devices of this kind, although produced and in use for many years have been subject to criticism for numerous reasons including their bulk, instability, clumsiness, frailty, unseaworthiness, difficulty of operation and control, as well as their physical appearance and for other reasons.

It is an object of the invention to provide an attractive, inexpensive, watercycle of relatively few parts, and which can be readily produced and easily assembled including on location without special tools or equipment and which can be easily operated by one without experience.

Another object of the invention is to provide a watercycle in which the floats or pontoons, water wheel and cover are of laminated plastic which will not absorb or be deteriorated by water to any appreciable extent as well as one in which the paddle wheel is mounted in such a manner that it can move upwardly when coming in contact with sand or other obstruction, thereby avoiding being damaged.

Other objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawings wherein:

Fig. 1 is a perspective illustrating one application of the invention in use;

Fig. 2, a vertical section on the line 2—2 of Fig. 1 showing the paddle wheel on a sand bar with the paddle wheel intermediate its top and bottom positions;

Fig. 3, a vertical section on the line 3—3 of Fig. 2 showing the paddle wheel in its lowermost position in full line and showing its raised position in dotted outline;

Fig. 4, a section on the line 4—4 of Fig. 3;

Fig. 5, a perspective of the rudder or steering blade;

Fig. 6, a side elevation of one of the floats or pontoons;

Fig. 7, a perspective of a guide for the steering post;

Fig. 8, a perspective of an end of the front connecting bar for the pontoons;

Fig. 9, a perspective of the rear connecting bar for the pontoon;

Fig. 10, a fragmentary side elevation of the crank and wheel shaft connection.

Briefly stated, the watercycle of the present invention comprises a pair of mating floats, pontoons, or covered hollow surf boats, held in spaced substantially parallel relation by a pair of connecting braces or bars and with a central hood forming housing or seat forming saddle in which is supported a transverse shaft with pedals on the

extremities of the same. On this shaft and in this saddle is mounted a water wheel adapted to be rotated by the pedals.

The saddle, the pontoons, and the water wheel, are composed of a laminated plastic, such as for example glass cloth applied layer by layer, brilliantly multicolored and not requiring painting for resistance to the dteteriorating action of the weather and the water. The floats or pontoons are hollow bodies having tapered ends and removable covers. Also at their rear ends they have central fins which tend to cause them to move in a straight line. The floats and covers may be of one-piece construction.

The pontoons are held spaced in substantially parallel relation by means of front and rear cross bars located respectively near the front and rear end portions thereof, the rear cross bar being preferably T-shaped in cross section for strength. The saddle is mounted on the adjacent spaced edges of the pontoons and houses a water wheel including a plurality of side disks and spaced radial vanes around the margins thereof.

The water wheel is provided on each side with a central brass bushing in which a substantially square shaft is disposed, such square shaft being supported in a pair of spaced bushings, one on each side wall of the plastic saddle. On each of the outer ends of the shaft is mounted a crank arm with a pedal and such crank arms are supported in opposite directions so that the pedals will be diametrically spaced. Rotation of the pedals will produce rotation of the water or paddle wheel to propel the vehicle. Guiding of the vehicle is accomplished by means of a laminated plastic rudder on a steering rod or post, mounted in rod guides or bushings and with a handle bar at its upper end.

With continued reference to the drawings, the watercycle of the present invention comprises a pair of mating floats, pontoons, or hollow surf boards **10** having covers **11**. These floats or pontoons include fins **12** at their rear ends which tend to cause them to follow a straight line when they are moved endwise in the water.

The pontoons or floats are held in spaced substantially parallel relation by means of front and rear connecting braces **13** and **14** the latter being of substantially inverted T-shaped configuration. The braces **13** and **14** are secured to the floats or pontoons by means of screws or other fasterners **15**.

The floats or pontoons are rigidly held as a single unit and centrally thereof is mounted a saddle forming hood or housing **16** having an enlarged flattened seat portion **17** on which a rider may sit. Hand grips **18** and handle bars **19** may be employed to rotate a steering rod or post **20** extending through openings **21** and **22** in the upper and lower portions of the saddle and also disposed in a pair of rod guides **23** in which the steering rod or post is rotatable, a rudder **24** being mounted by bolts or rivets **25** in the lower end of the steering or post rod **20**. A steering handle support **20A** is secured to the upper end of the steering post **20** and limits downward movement of the post while permitting rotatory movement thereof.

The saddle forming hood or housing **16** is provided with right and left base flanges **26** and **27** respectively attached to the pontoons by means of bolts, screws or other fastening elements **28**. The saddle forming hood or housing thus provides a hollow body with its front and rear ends tapered upwardly and with its sides covered by means of an elongated top **29** of which the seat **17** is a part and which top porton can be used to support one or more passages in addition to the one supported on the seat **17**.

This inverted receptacle formed by the saddle and its top is adapted to house a water wheel by means of which the device can be propelled. This water wheel

comprises a pair of identical disks or round side plates **30** having a series of radially disposed fins **31** equally spaced around its periphery and provided with a pair of mounting bushings **32** held in place by means of bolts or screw fasteners **33**. Each bushing is provided with a central square opening **34** for a shaft **35** square in cross section to prevent relative rotation.

The end portions of the shaft **35** extend through vertically disposed slots **36, 36** in the sides of the housing or hood **16**, such slots being disposed in outwardly offset portions of the side walls which provide an internal recess **39** in which rectangular shaped spacing plates **38** are mounted, said plates **38** have slots **37, 37** registering with the slots **36** in the housing. On the outer ends of shaft **35** are cranks **40** with pedals **41** by means of which a person sitting on the seat **17** may operate the paddle wheel, suitable spacing and guarding disks **44** being provided between each crank and the offset portion of the housing **16**. It will be noted that the paddle wheel may move up and down since the shaft **35** carrying the paddle wheel may move vertically in the slots **36** and **37** whereby the paddle wheel in use will normally have its lower portion extending substantially below the bottom of the floats **10, 10**. In the use of the watercycle in shallow water, the bottom extremity of the paddle wheel may engage the bottom of the body of water or sand bar **45** thereby causing the paddle wheel to move upwardly which upward motion can be felt through the pedals by the operator and the operator can then take the necessary precautions to avoid being grounded. The operator may stop and back up the watercycle or if the obstruction is a small sand bar or the like the watercycle may run over the obstruction. In any event the operator will have notice of the danger involved. It will be observed that there is clearance between the top of the paddle wheel and the top of the housing **16** whereby the vertical movement of the paddle wheel can be accommodated as clearly shown in Fig. 3.

It will be noted that steering rod or post **20** may slide vertically since there is spacing between the rudder **24** and the flange portion of the housing **16**, the downward movement of the steering rod being limited by the lower end of the steering handle support **20A** at the top of the steering rod.

The arrangement whereby the paddle wheel may move upwardly when the paddle wheel contacts the bottom of the body of water or any obstruction such as a log or rock or the like results in safe passage of the watercycle since the operator will have immediate notice of the obstruction. The operator can take the necessary precautions such as changing course or reversing motion to prevent grounding and to prevent damage to the pontoons or the paddle wheel since the paddle wheel will move yieldably upward. The projection of the paddle wheel below the bottom of the pontoons results in more effective movement of the watercycle through the water whereby numerous advantages are obtained.

The floats or pontoons including their covers, the saddle, the water wheel and the rudder are composed of plastic in the form of layers or laminae of glass cloth, the laminae being united into a single wall or body structure and the bushings are preferably brass or stainless steel in order not to be attacked by the water and weather to which the device is subjected.

It will be apparent that the device is of simple, yet substantial construction, is of attractive appearance and can be readily operated by a child or adult or one or more children or adults.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is illustrated in the drawing and described in the specification, but only as indicated in the accompanying claim.

What is claimed is:

A watercycle comprising a pair of elongated floats arranged in side by side generally parallel relation, a housing positioned between said floats and secured to the adjacent edges thereof and extending upwardly therefrom, a seat on said housing at the rear end thereof, and a steering shaft journaled in said housing at the front end thereof, rudder means on the lower end of said steering shaft, means on the upper end of said shaft whereby it may be turned for steering, said housing being provided with medially positioned vertically disposed slots, a shaft mounted in said slots, a paddle wheel fixedly mounted on said shaft in said housing and having its lower extremity normally positioned below the bottom of the floats, said housing providing a space above the paddle wheel whereby said paddle wheel may move upwardly a distance corresponding to the length of said slots whereby the bottom of the paddle wheel may rise to the level of the bottom of the floats, said shaft supporting said paddle wheel and extending through said slots to rotatably mount said paddle wheel in said housing, said paddle wheel being adapted for vertical movement, crank means on the ends of said shaft whereby the paddle wheel may be rotated by a person sitting on said seat on the housing.

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