May 28, 1968 R. G. HESTON, JR., ET AL 3,384,910

WATERSLED

Filed July 18, 1966 2 Sheets-Sheet 1

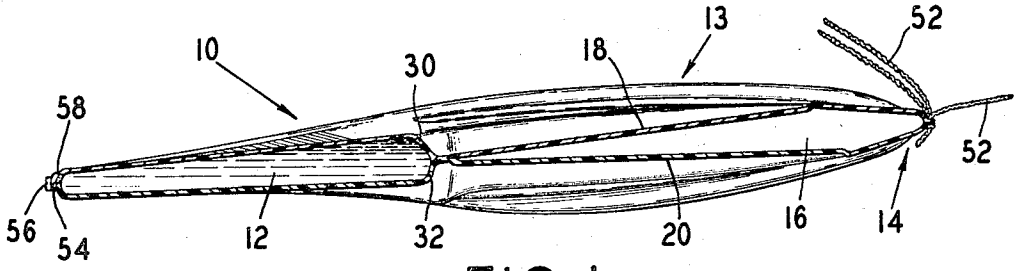


FIG. 1

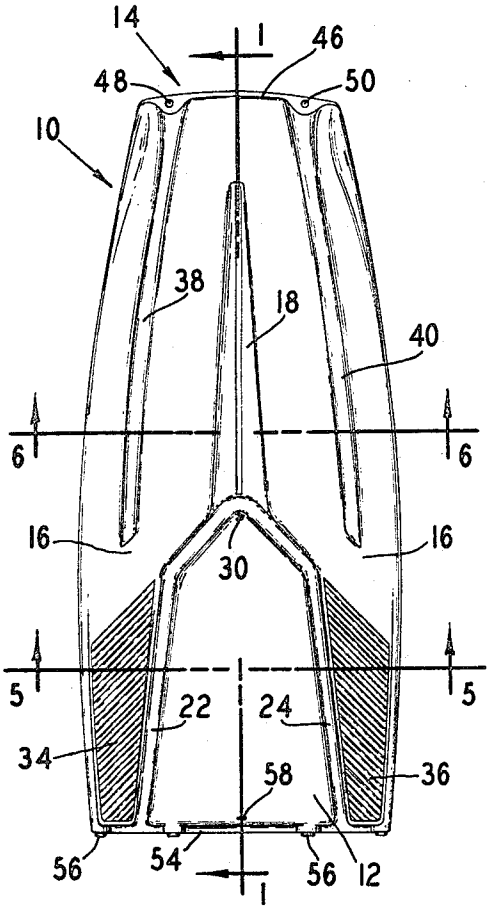


FIG. 2

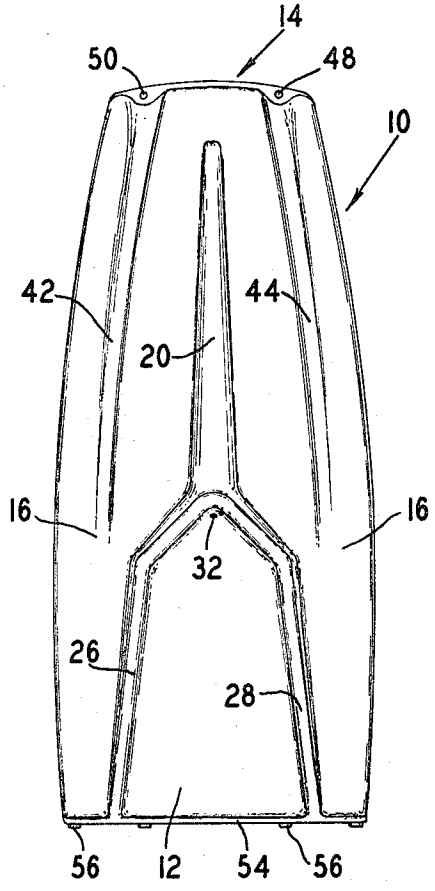


FIG. 3

INVENTORS.
RUSSELL G. HESTON, Jr.
WESLEY F. JUNKER
BY Henry A. Marzullo Jr.
ATTORNEY

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Filed July 18, 1966 2 Sheets-Sheet 2

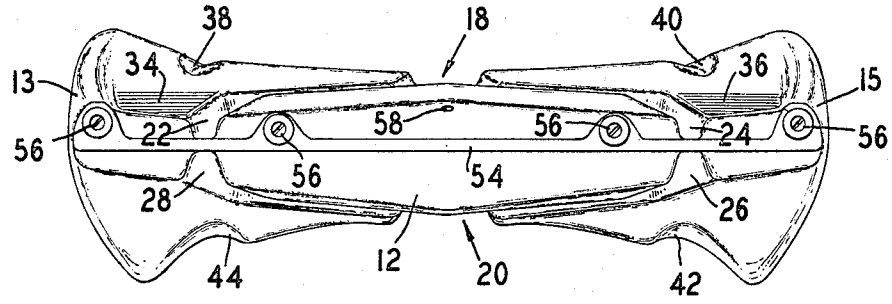


FIG. 4

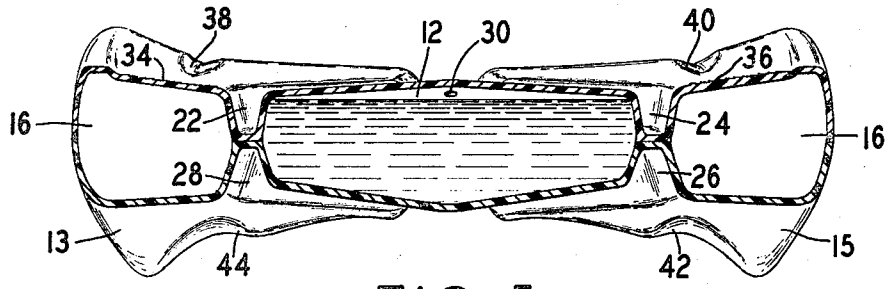


FIG. 5

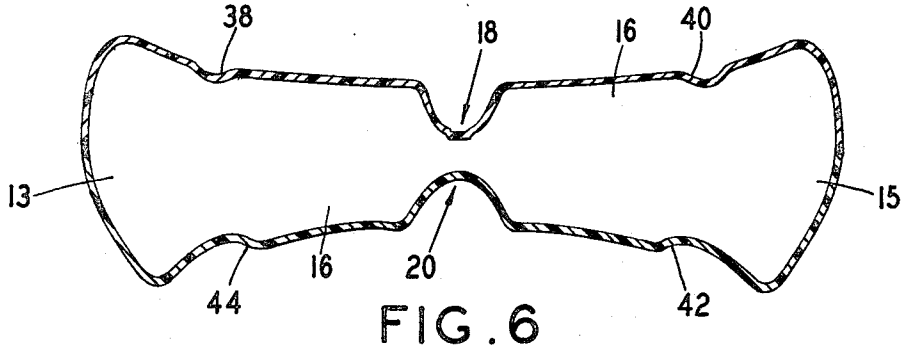


FIG. 6

INVENTORS.
RUSSELL G. HESTON, Jr.
WESLEY F. JUNKER
BY Henry A. Marzullo Jr.
ATTORNEY

United States Patent Office 3,384,910 Patented May 28, 1968

3,384,910

WATERSLED

Russell G. Heston, Jr., Little Silver, N.J., and Wesley F. Junker, Copiague, N.Y., assignors, by mesne assignments, to Union Carbide Corporation, New York, N.Y., a corporation of New York

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11 Claims. (Cl. 9—310)

This invention relates to flotation devices and more particularly it relates to an improved watersled, aquaplane, or "zip sled."

It is the principal object of the invention to provide a novel and improved watersled which is capable of being easily maneuvered and controlled when towed, and one which can, if desired, be used as a surf board, life raft, float and the like.

Another object of the invention is to provide a novel and improved watersled that can be ridden in the prone, kneeling or standing position, adjusting to the skill and desire of the rider.

Yet another object of the invention is to provide a novel and improved watersled which can be towed within the wake of a motor boat and one which can traverse back and forth across the wake providing the rider a combination of skiing and aquaplaning performance.

Yet still another object of the invention, in addition to each and every one of the above objects, is to provide a stabilized watersled which is non-sinkable; and one which due to its front hull "boat design" can be ridden on a straight tow behind a boat without the uncontrolled "yaw" or "diving" characteristics of heretofore sleds and aquaplanes, and one which includes structural means for reducing the buoyancy of the stern or rear portion of the aquaplane.

A still further object of their invention is to provide a novel and improved watersled with structural means in the form of a weighted stern.

Yet a still further object of the invention is to provide a watersled with rear structural means in the form of a cavity wherein the cavity is automatically weighed down by being filled with water when the device is in use, and wherein the cavity automatically drains when the watersled is removed from the water.

Another object of the invention is to provide a rigid watersled and one which is of a generally hollow floatable structure but yet simple in construction, economical to manufacture and highly effective in use.

These and other objects are achieved by the present invention which comprises a hollow, elongated, contoured structure having a generally tunneled hull and having a substantially flat deck portion and a ballast tank or a weighted stern portion; the hollow structure providing sufficient buoyancy to support at least one rider for the watersled, and the weighted stern portion reducing the buoyancy at the rear of the watersled whereby the bow of same is precluded from nose-diving when the watersled is towed without rider.

In the drawing:

FIGURE 1 is a side view, in section, of a watersled of the invention;

FIGURE 2 is a top view of the watersled shown in FIGURE 1;

FIGURE 3 is a bottom view of the watersled shown in FIGURE 1;

FIGURE 4 is a rear elevational view of the watersled;

FIGURE 5 is a sectional view taken along the line 5—5 of FIGURE 2; and

FIGURE 6 is another sectional view taken along the line 6—6 of FIGURE 2.

With reference to the drawing, and particularly to FIGURES 1, 2 and 3, there is shown a novel and improved

watersled 10 of the present invention. The watersled 10 comprises an elongated, substantially hollow buoyant hydrodynamic structure having a generally tunneled hull design and a rear or stern weighted portion.

The aquaplane 10 is preferably integrally molded in one-piece and is specifically manufactured by blow-molding suitable plastic materials such as polyethylene and the like. Of course, it is possible for the watersled to be made from a metal or from a plurality of components suitably secured together and forming a strong buoyant and watertight structure. For the purpose of the following description the watersled shown in the drawing is constructed of plastic, but it should be understood that the invention is not to be limited to the use of any particular material nor are all of the structural details to be understood as necessarily limited to those described and illustrated otherwise than as provided for in the claims.

As best shown in FIGURES 1, 4 and 5, the rear ballast tank or weighted portion is preferably in the form of a self-filling water reservoir, cavity or chamber 12 and the latter is preferably located about the rear central region of the aquaplane 10. This chamber 12 is essentially filled with a fluid, such as water at all times even when the sled is being towed as will be more fully described in greater detail hereinafter. The ballast tank or water chamber 12 serves to reduce the buoyancy at the rear portion of the watersled, move the center of gravity aft and to lower the center of gravity in order to keep the bow or front portion of the watersled high when being towed without a rider, and it also serves to improve control and maneuverability of the watersled.

The bow 14, and remaining central and rear portion of the watersled 10 suitably comprise one big flotation chamber 16, as best shown in FIGURES 1, 5 and 6. Of course, a plurality of flotation chambers may be employed in the practice of the invention. The overall shape and entire construction of the watersled 10 can be considered to comprise a pair of outriggers or pontoons 13 and 15 which form a part of the flotation chamber 16 and which suitably surround the sides of the water chamber 12. Reinforcement and additional strengthening elements are provided for in the hollow construction of the watersled 10 of the invention by virtue of the longitudinal tunnel rib means 18, and 20 respectively disposed on the top and bottom of the watersled 10. Branching out in the form of a fork from the tunnel rib means 18 and 20, and defining the sides of the chamber 12 and also serving as additional strengthening ribs for the watersled 10, are tunnel ribs means 22 and 24, and 26 and 28, respectively located in the top and bottom of the sled 10. The tunnel rib means all suitably vary in depth from front to rear; and tunnel rib means 18 and 20 aid in channelling water to the intake or inlet openings 30 and 32 of the chamber 12, respectively located in the top and bottom of the watersled 10.

On the top surface of the watersled 10, as best shown in FIGURE 2, suitable anti-slip surfaces or food-pad areas 34 and 36 are provided between the tunnel rib means 22 and 24 and the outer side extremities of the watersled 10. These foot-pad areas 34 and 36 or anti-slip surfaces may be separately applied, coated or sprayed thereon, or as shown herein, an integral pattern generally comprising a sawtooth design disposed diagonally with respect to the longitudinal of the watersled 10 may also serve as suitable anti-slip foot-pads.

If desired, additional longitudinal ribs may be incorporated in the watersled 10 of the invention. Such ribs may suitably be disposed, as best shown in FIGURES 2 and 3, on both top and bottom surfaces and are generally illustrated therein by respective numerals 38 and 40 and 42 and 44. In the present application wherein the watersled is described to be of a blow-molded plastic, the ribs

38, 40, 42 and 44 serve to reduce the distortion of the plastic over these generally wide flat front surface portions. Obviously, these ribs also serve to stiffen, strengthen and give rigidity to the entire structure of the device and also contribute styling lines to an extent.

The bow or front portion 46 of the watersled 10 is suitably provided with means for connecting towing means thereto and for means which can be used by a rider for holding on to the watersled. Suitable means comprise apertures 48 and 50 which are capable of receiving chain, cable or rope 52. The stern or rear portion 54 of the watersled 10 incorporates a sharp, flat and straight line pinchoff. This portion of the watersled 10 is preferably "square" in order for a rider to readily and easily dig the corners of the aquaplane 10 into the water for executing turning maneuvers and various other "tight" maneuvers and "close" obstacles courses of action. Since the rear portion of the watersled 10 must traverse and slide back and forth across the surface of the water there cannot be any center keel secured to the underside of the watersled 10. In this connection, it should be apparent that watersleds, aquaplanes or the like are usually towed, unlike surfboards which are in a sense self-propelled. Suitable plugs 56 are provided in the rear thereof to seal off the intake openings which are initially used in the blow-molding of the structure. If desired, a suitable venting aperture 58 may be disposed at the rear of the chamber 12. This aperture 58 permits the air to escape from the cavity 12 and allows the chamber 12 to completely fill with water. Aperture 30 also provides this function and also serves to permit water to fill the chamber 12 should the watersled be inverted when placed in the water. The diameter of the inlet and venting apertures are substantially small and are porportioned so as to essentially keep the fluid in the chamber 12 from draining out of same.

Suitable watersleds have been made and successfully tested in water under various conditions such as calm seas, choppy and turbulent seas, etc. The capacity of the ballast tank or water cavity is designed such that it is proportional to the buoyancy of the watersled, and that the rear stern section on which a rider stand is submerged and below the "water line" in order to eliminate slipping and skidding of the sled over the water.

While a preferred embodiment of the invention has been shown and described herein, it will be appreciated that artisans may make minor variations in the watersled of the present invention without departing from the concept and spirit of the invention and the scope of the appended claims.

What is claimed is:

1. A watersled comprising a hollow enclosed flotation chamber extending substantially throughout the body thereof, a weighted stern section positioned with said flotation chamber extending thereabout, a contoured bow, a pair of pontoons having a central flat deck portion therebetween, and structural strengthening means disposed longitudinally along said deck portion.

2. The watersled of claim 1 wherein said structural strengthening means includes tunneled rib means disposed at said weighted stern section defining the outer periphery thereof.

3. The watersled of claim 2 wherein said rib means at said stern section define a fork intersection joined at said intersection to a single tunneled rib extending centrally along said deck portion.

4. The watersled of claim 3 wherein said weighted stern section comprises a hollow cavity filled with a fluid.

5. The watersled of claim 4 wherein said fluid is water.

6. The watersled of claim 5 wherein fluid inlet means and venting means are provided in said cavity.

7. The watersled of claim 6 wherein said inlet means is disposed in line with said single centrally extending tunneled rib in order to facilitate the entrance of said water into said cavity.

8. The watersled of claim 6 comprising substantially identical surfaces on the top and bottom thereof except that non-slip surfaces are provided on the top only adjacent each side of said stern section.

9. The watersled of claim 8 wherein said fluid inlet means are provided on both top and bottom surfaces of said watersled in the form of orifices in said cavity located adjacent said fork intersections.

10. The watersled of claim 9 wherein said venting means is provided on the top of said watersled in the form of an orifice in said cavity located adjacent the rear portion thereof.

11. The watersled of claim 10 wherein the stern of said watersled is substantially square with respect to the side portions thereof.

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MILTON BUCHLER, *Primary Examiner.*

P. E. SAUBERER, *Assistant Examiner.*