

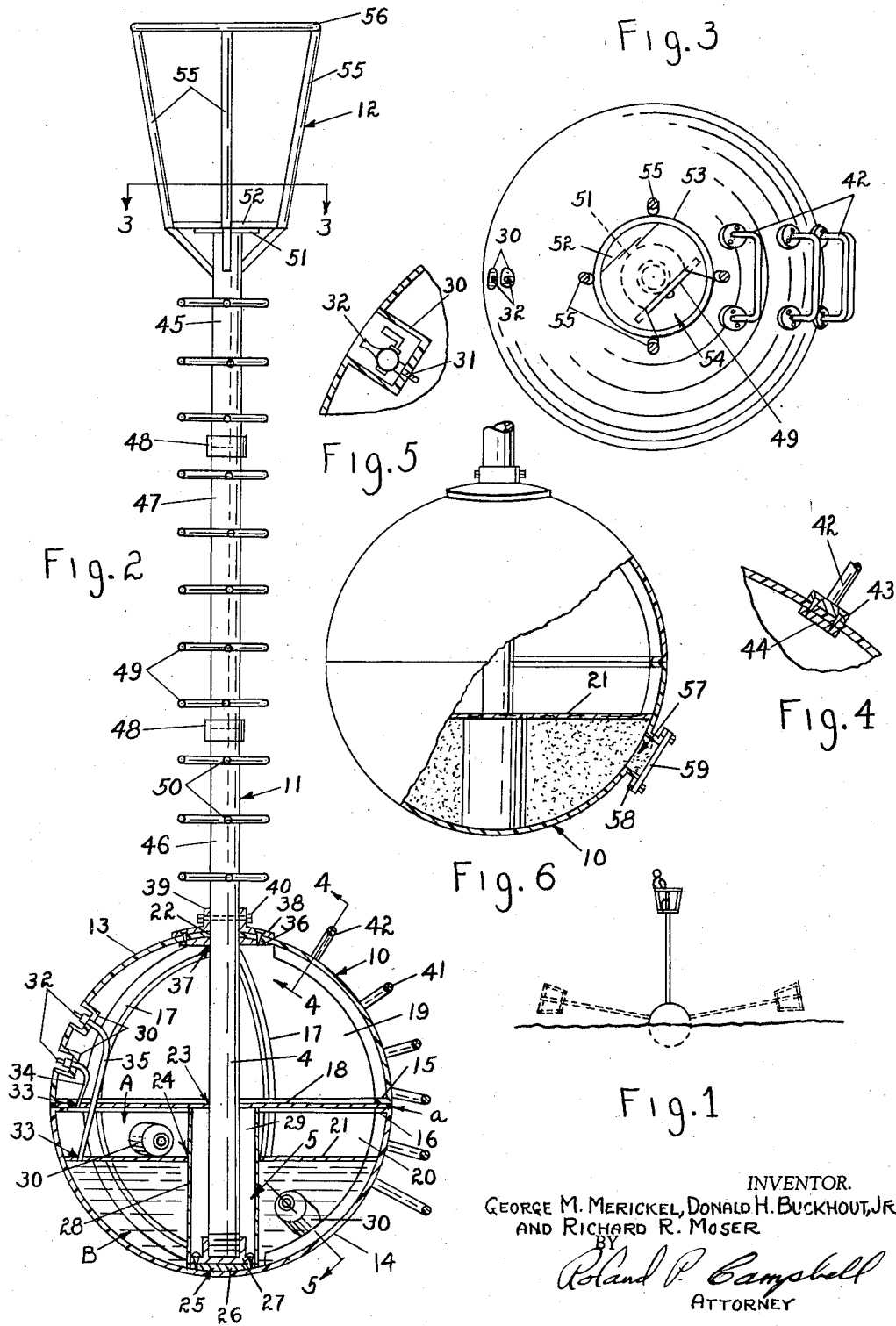
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WATER TOY

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WATER TOY

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The present invention relates generally to amusement devices, and more particularly to a novel water toy.

The novel toy of the present invention is particularly well adapted for use at beaches and functions to support an operator above the water and move him toward and away therefrom in the manner of a pendulum thus providing an exhilarating and pleasing sensation of controlled flight.

An important object of the present invention is to provide a water toy which operates on the pendulum principle.

Another object of the present invention is to provide such a water toy which is self righting and responsive to a shift in weight of the operator.

Another object of the invention is to provide such a water toy which is adjustable so as to control the degree of pendulum action and also to compensate for a difference in weight between various operators.

Other objects and advantages of this invention will become more apparent during the course of the following description, when taken in connection with the accompanying drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the same:

Fig. 1 is a schematic view of the novel water toy of the present invention showing its mode of usage;

Fig. 2 is an elevation view partly in section of the water toy;

Fig. 3 is a sectional plan view taken along the line 3—3 of Fig. 2;

Fig. 4 is a partial sectional view taken along the line 4—4 of Fig. 2;

Fig. 5 is a partial sectional view taken along the line 5—5 of Fig. 2; and

Fig. 6 is a partial elevation view illustrating a modification of the invention.

With reference now to the drawings and particularly to Fig. 1, the water toy of the present invention floats partially submerged in the water and comprises a hollow rounded base member 10 having a climbing mast 11 secured thereto and an operating platform 12 carried at the uppermost end of the mast. Due to the novel construction of the toy and the manner in which the same is balanced and ballasted, an operator when standing on the platform 12 may rock or rotate the base member within the water to move the platform toward and away from the water in an arc of swinging movement somewhat less than 180°. Due to the construction of the mast 11 and depending upon the amount of ballast, which may be controlled, the length of the arc of swinging movement may be varied so that the more timid, or children, will not be carried too close to the water.

As shown in Fig. 2, the hollow base member 10 is spherical in shape and comprises upper and lower hemisphere or base portions 13 and 14 respectively. A rounded or spherical construction is preferred because the water offers little resistance to the rotational movement thereof and thus the motion of the toy is relatively smooth.

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Each of the base portions has an inwardly turned flange, 15 and 16 respectively, and a plurality of spaced ribs 17 extending along the inner surface thereof and joining each flange at diametrically opposed portions. Carried between the respective flanges 15 and 16 and joined to each is a dividing wall 18 of a somewhat lesser diameter than that of the base member which separates the base member into an upper chamber 19 and a lower water tight chamber 20. The chamber 20 is subdivided into upper and lower portions A and B respectively by a second dividing wall 21. Preferably, each of the base members 13 and 14 is formed of a laminate comprising a molded polyester resin reinforced with fiber glass cloth or mat having a finish which is compatible with the resin. Various types of polyester resins may be used and sufficient catalyst is added so that the base members need not be heated to cure the resin.

When each of the base portions as well as the dividing wall 18 is formed of resin reinforced with glass fiber cloth, the flanges 15 and 16 may be readily fused to the dividing wall 18 by merely applying a coating of uncured resin or a suitable solvent to each of the facing surfaces and the wall 21 may be similarly fused at the edge thereof to the base portion 14. The small rectangular opening *a* between the outermost edge of the dividing wall and the outer surface of the base member may be readily filled with additional resin to provide a smooth surface as well as additionally sealing the interior of the sphere against the entry of water.

To receive the mast 11, the upper base portion 13 has an opening 22 formed therein centered on the vertical axis of the portion 13, and similar openings 23 and 24 are formed in the dividing walls 18 and 21. Aligned with the openings 22 to 24 and carried within the chamber 20, is mast support means generally indicated by the numeral 25 for receiving and supporting the lowermost end of the mast 11. The support means 25 comprises a rectangular wooden base 26 treated with a waterproofing compound and fused to the innermost surface of the lowermost base portion 14 by means of resin or a suitable solvent. A pipe flange 27 having internal threads formed therein is bolted to the base 26 and has its axis aligned with the openings 22 to 24 and thus also with the center of gravity and vertical axis of the spherical base member 10. Surrounding the flange 27 is a conduit section 28 also preferably formed of fiber glass reinforced resin and having its uppermost end fused to the dividing wall 18, its lowermost end to the base 26, and also being fused to the dividing wall 21 thus providing a sealed water tight chamber 29 within which the lowermost mast is received.

In order to provide the pendulum like oscillating motion of the toy, it is necessary that the toy be weighted so that the center of gravity thereof is below its center of buoyancy. To admit water to the chamber 20 for the purpose of weighting the toy, the sub chambers A and B as shown in Fig. 5, are each provided with recessed circular wall portions 30 of increased thickness each of which is provided with a threaded opening 31 into which is inserted a conventional valve 32 which may be opened to admit water into the chambers A and B and closed to contain the water in the chambers.

To exhaust air from the chambers A and B, each of the dividing walls 18 and 21 is provided with an air exhaust opening 33 located immediately adjacent the periphery thereof. As was the case with the recessed wall portions 30, opening 31 and valve 32, shown in Fig. 5, a similar threaded opening 31 is provided in each of a pair of recessed wall portions 30 of increased thickness provided in the wall of the upper base portion 13, and plastic air exhaust conduits 34 and 35 extend between the openings 31 and the openings 33 in the respective dividing walls 18 and 21 with a suitable opening being

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provided in the wall 18 for the conduit 35. The ends of the conduits are sealed where they join the respective wall portions and the conduit 35 is also sealed to the wall 18 where it passes therethrough thus preventing water from leaking into the upper base portion 13. Conventional valves 32 are also inserted in each of the openings 31 and are left open when the sub chambers A and B are being filled with water and are closed when the sub chambers are filled. Preferably, the conduits 34 and 35 have diameters of about $\frac{1}{4}$ inch whereas the openings 31 have a diameter of about 1 inch. With this proportioning, the sub chambers A and B may be rapidly filled with water and yet there will be no appreciable surge of water into the conduits 34 and 35 which could impart an erratic movement to the toy.

As previously mentioned, an opening 22 is provided in the upper base portion 13 through which the climbing mast 11 passes. A wooden plate 36 having an opening 37 formed therein, which is aligned with the opening 22, is fused to the innermost surface of the base portion 13 and an unthreaded pipe flange 38 is secured to the outermost surface of the portion 13 by screws extending through the portion 13 and seated in the wooden plate 36. The flange 38 is provided with a circular upstanding wall portion 39 having transversely aligned holes formed therein which are diametrically opposed to one another for receiving a bolt 40 which may be passed through the holes in the wall portion 39 and through corresponding matching holes in the mast 11 to secure the mast to the base member 10.

To provide a means for reaching the mast 11 from the water, the outermost surface of the base member 10 is provided with a ladder 41 comprising individual U shaped members 42 having flanges 43 which are secured to the base members 13 and 14 by screws extending through the wall of the base members and seated in a wooden plate 44 fused to the inner surface of the base member.

As shown in Fig. 2, the mast 11 is multi-sectioned and comprises upper and lower pipe sections 45 and 46 respectively and an intermediate section 47.

The respective mast sections are of equal diameter and have threaded ends which are joined to one another by couplings 48. As previously mentioned, the mast section 46 is received within the flange 27 which forms a portion of the mast support means 25 and thus the axis of the mast passes through the center of gravity of the base member 10. This is desirable since it is preferred that the toy remain substantially upright when not being rocked. If the mast is offset, the toy is still operable but the toy will not have an equilibrium position wherein the mast is substantially vertical.

To enable an operator to climb the mast 11 and reach the operating platform 12, a plurality of spaced cross bars 49 are mounted on each of the mast sections and secured thereto by bolts 50.

To secure the operating platform 12 to the mast 11, a pipe flange 51 is carried at the uppermost end of the upper mast section 45 and a wooden plate 52 is bolted thereto which plate forms the support base of the platform. As shown in Fig. 3, the plate 52 is semi-circular in shape and is surrounded by a circular rim 53 thus leaving an opening 54 therebetween through which the operator may climb. Suitable spaced posts 55 extend upwardly from the rim 53 to be joined to one another by a second circular rim 56 of larger diameter which forms a hand rail for the operating platform 12.

As previously set forth, the length of the arc travelled by the working platform may be varied and the toy may be adjusted for the weight of the operator. For example, if the toy is intended primarily for use with children, both sub chambers A and B may be filled with water and the length of the mast 11 may be shortened by not using the upper and intermediate pipe sections 45 and 47 and securing the operating platform 12 to the lowermost pipe section 46. Such an arrangement provides max-

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imum weight in the base section and minimum arc of movement of the operating platform as well as a minimum turning moment which is created by the weight of the operator multiplied by the horizontal distance to the center of the base member and which in turn affects the length of the arc of movement.

If desired, the toy can be operated so as to submerge the operating platform in water. If this is the case, all three mast sections are used and the operator shifts his weight more rapidly thus increasing the momentum.

As an illustration of suitable dimensions for the toy which have given very satisfactory results, the spherical base portion may be six feet in diameter, the chambers 19 and 20 of equal volume, and the length of the mast from the top of the base member 10 to the bottom of the platform 12 is fourteen feet. A toy having these dimensions may be rocked, by an average adult, until the platform touches the water.

The modified form of the invention shown in partial elevation in Fig. 6 makes use of sand or similar material as ballast and is identical to that shown in Fig. 2 except that the base member 10 is of somewhat different construction in that the upper dividing wall 18 has been omitted as well as the various water inlet openings, air exhaust openings and air exhaust conduits.

To admit sand into the lower chamber 20, a rectangular opening 57 is provided in the base portion 13 adjacent the dividing wall 18, and a suitable rectangular flange 58 surrounds the opening 57. The flange 58 preferably is formed of a resin glass laminate fused to the base portion 13 and is provided with a bolted cover plate 59 which also may be a resin glass laminate.

It will be understood, of course, that the weight of a given volume of sand is greater than that of a given volume of water and therefore less sand ballast is necessary. Thus to have operating characteristics similar to that of the preferred embodiment of the invention when using a base member diameter of six feet and a mast length of fourteen feet, the dividing wall 21 should be spaced downwardly about thirteen inches from the center of the base member.

From the foregoing description it will be readily apparent that the construction of the novel water toy of the invention may be varied somewhat depending upon the desired mode of operation, and it will be understood that various changes may be made in the shape, size and arrangement of parts without departing from the spirit of the invention or the scope of the subjoined claims.

We claim:

1. A rockable free floating water toy, comprising a hollow rounded base member including upper and lower sections separated from one another by a dividing wall, said lower section being provided with a ballast inlet opening and having a volume sufficient that when said lower section is filled with ballast the center of gravity of the toy is below the center of buoyancy thereof, said toy having its center of movement located within said base member, and a climbing mast carried by said base member and having its axis substantially diametrically aligned with the center of gravity of said base member, said climbing mast having one end thereof extending upwardly from said base member and an opposite end extending into said base member and mounted within said base member.

2. A rockable water toy as defined in claim 1, wherein the upper section of the base member and the dividing wall are provided with mast receiving openings, and mast support means carried in the lower section of the base member and aligned with said mast receiving openings.

3. A rockable water toy as defined in claim 2, including a mast receiving conduit extending between the opening in the dividing wall and the mast support means and having the ends thereof sealed against the entry of ballast from said lower section.

4. A free floating rockable water toy, comprising a

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hollow rounded base member including a lower ballast receiving portion having an inlet opening for admitting water and an upper portion having an opening therein, said ballast receiving portion having a volume of such magnitude that when filled with water the center of gravity of the toy is below the center of buoyancy, a dividing wall separating said upper and lower portions and also having an opening therein, an air exhaust conduit carried within the uppermost base portion and communicating with the atmosphere through the opening therein and to the ballast receiving portion through the opening in said dividing wall, said conduit having a smaller cross-sectional area than said inlet opening, and a climbing mast carried by said base member and having its axis substantially diametrically aligned with the center of gravity thereof.

5. A free floating rockable water toy, comprising a hollow spherical plastic base member, and a climbing mast carried by said base member and having its axis substantially passing through the center of gravity of said base member, said base member comprising upper and lower hemisphere portions, said upper hemisphere portion having a pair of air exhaust openings therein and said lower hemisphere having a pair of water inlet openings, a first dividing wall extending between said upper and lower hemisphere portions and having an air exhaust opening therein and another opening, a second dividing wall having an air exhaust opening therein spaced downwardly from said first dividing wall and located between the water inlet openings and extending between opposed portions of said lower hemisphere portion and dividing said lower hemisphere portion into upper and lower ballast receiving chambers having a volume sufficient that when filled with water the center of gravity of the toy

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is below the center of buoyancy, a first air exhaust conduit extending between the air exhaust opening in said first dividing wall and an air exhaust opening in the upper hemisphere, and a second air exhaust conduit extending between the air exhaust opening in the second dividing wall and the other air exhaust opening in the upper hemisphere and passing through the other opening in the first dividing wall, said air exhaust conduits having a smaller area than the water inlet openings.

6. A rockable water toy as defined in claim 1, wherein the base member is provided with a ladder extending downwardly along the upper section of said base member toward the lower section of said base member and the water when the toy is floating therein to enable an operator to mount said toy from the water.

7. A rockable floating water toy as defined in claim 1, wherein mast support means is carried by both the upper and the lower sections of the base member, and a plurality of spaced reinforcing ribs carried inwardly of the base member and secured to the innermost surface of said base member.

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