June 3, 1958 H. A. WARNER 2,836,927

AQUATIC AMUSEMENT DEVICE

Filed Dec. 24, 1956

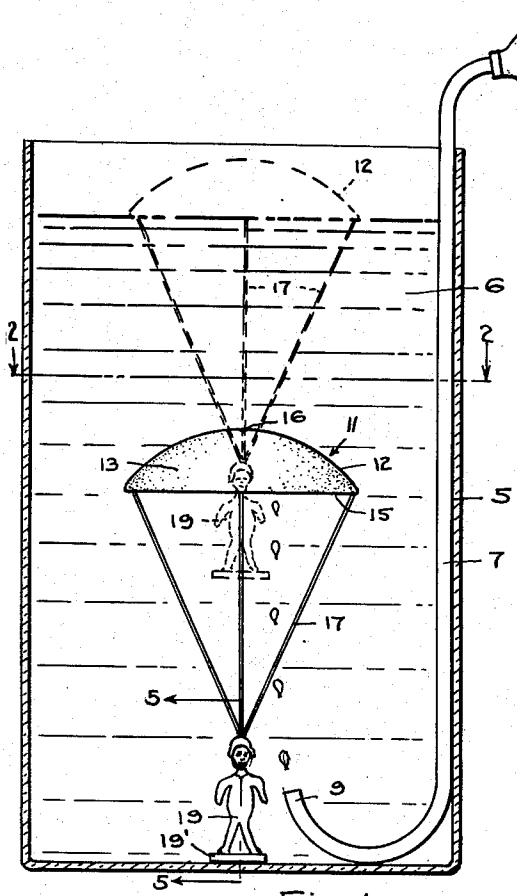



Fig. 1.

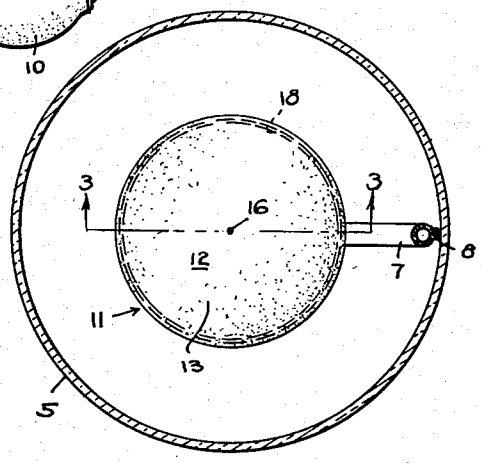



Fig. 2.

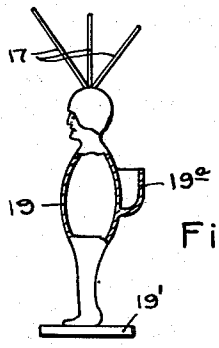



Fig. 5.

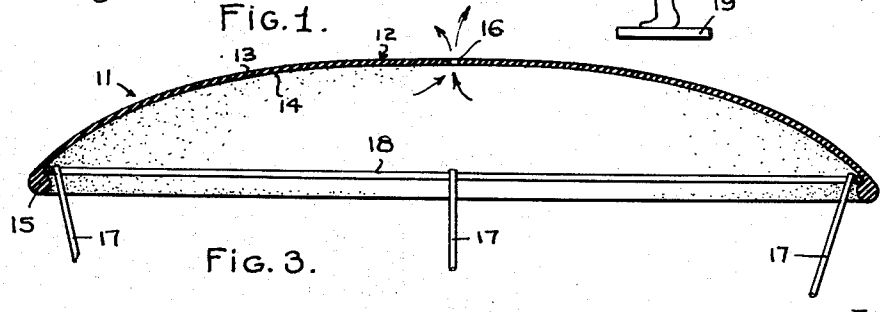



Fig. 3.

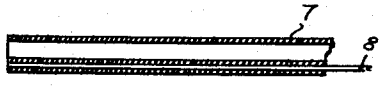



Fig. 6.

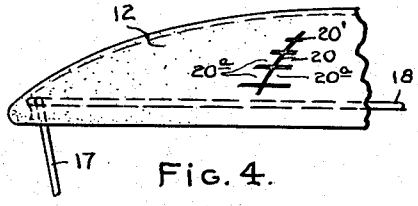



Fig. 4.

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United States Patent Office 2,836,927
Patented June 3, 1958



2,836,927

# AQUATIC AMUSEMENT DEVICE

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Application December 24, 1956, Serial No. 630,113

2 Claims. (Cl. 46—92)

This invention relates to an aquatic toy for amusement or for commercial display purpose.

The invention contemplates a submersible device, such as a parachute with a suspended figure simulating a man and with the parachute adapted to ascend and descend through a body of water and with the water being in a glass or plastic container whereby the parachute will be clearly visible throughout its motions.

An object of the invention is to provide a device in the form of a parachute having a canopy of extremely thin light weight material preferably shaped into a dome and with the circumferential edge of the canopy being constructed in a manner to maintain the contour of the device and also to have a connection with a band that carries a plurality of relatively stiff shrouds that are inclined downwardly and inwardly to support a simulated figure of a man at the lower ends thereof and with the simulated figure being of a predetermined weight as the means to cause the parachute to descend and to also maintain the parachute in an upright manner when it has reached the lowermost point in its descent. It is also contemplated that the simulated parachute passenger shall be provided with a pouch into which may be inserted by the user one or more pellets for increasing the weight of the device as a means to hasten the descent.

The invention further contemplates a simulated parachute that is caused to ascend and descend through a body of water under the influence of air bubbles that are discharged at a point in the container for the water whereby the air bubbles will rise and be entrapped beneath the canopy and, when sufficient air bubbles have been discharged, it creates a sufficient buoyancy to the parachute to cause it to rise upwardly through the water to a point where it is substantially floating upon the upper surface and with the parachute being so constructed that the air entrapped within the canopy will be progressively released to the point where the parachute will again settle downwardly for the reception of a further supply of air bubbles and whereby the operator may cause the parachute to rise and fall at will.

The invention further contemplates an aquatic toy and amusement device having the above mentioned characteristics that may be associated with a commercial display and whereby the animation will serve to attract the attention of persons to adjacent merchandise.

Novel features of construction and operation of the device will be more clearly apparent during the course of the following description, reference being had to the accompanying drawings wherein has been illustrated preferred embodiments of the device as wherein like characters of reference are employed to denote like parts throughout the several figures.



In the drawings:

Figure 1 is a vertical sectional view through a transparent receptacle and illustrating the invention in elevation,

Figure 2 is a horizontal section taken substantially on line 2—2 of Figure 1,

Figure 3 is an enlarged transverse section taken substantially on line 3—3 of Figure 2,

Figure 4 is an enlarged fragmentary side elevation illustrating a modified form of air escape means for the device,

Figure 5 is a fragmentary sectional view taken on line 5—5 of Figure 1 and,

Figure 6 is a fragmentary longitudinal section through the air supply tube.

Referrring specifically to the drawings, the numeral 5 designates a receptacle, formed of glass, plastic or the like that is open at its top and with the receptacle supporting a body of water 6. While the receptacle has been illustrated as having straight side walls, it is obvious that any convenient type of receptacle can be employed, such as the conventional fruit jar. Insertable within the receptacle to a point adjacent its bottom, is an air tube 7. The air tube 7 may be of any desirable form, but is preferably constructed as illustrated fragmentarily in Figure 6. The air tube comprises a section of plastic, rubber or the like that has molded therein along one side a wire 8 and whereby the tube may be shaped by the user so that it will retain a particular contour and, as illustrated in Figure 1 it is desirable that the discharge end of the tube be angled upwardly as shown at 9. The opposite end of the tube may be provided with a bulb 10 of conventional construction such as an atomizer bulb and through the medium of which air may be forced through the tube 7 to be discharged from the end 9 in the form of air bubbles, for a purpose to be presently described.

The toy herein disclosed is in the form of a parachute, indicated as a whole by the numeral 11. The parachute embodies a canopy of dome shape and with the canopy being formed of extremely thin material such as rubber or vinyl plastic. The canopy 12 may be molded or otherwise produced so that it will maintain its shape, having the upper convex surface 13 and the lower concave surface 14. The marginal edge of the canopy is molded or otherwise formed to provide a relatively stiff bead 15, see particularly Figure 3. The canopy 12 at a predetermined point or points is provided with a relatively minute aperture 16, such aperture being determined in accordance with the desired rate of movement of the device. Connected with the canopy 12 is a plurality of shroud lines 17. The shroud lines 17 are in the form of relatively stiff and relatively fine wires that are jointly connected at their upper ends to a circular wire 18. The wire 18 and its connected lines 17 have snapping engagement with the bead 15 of the canopy, whereby the canopy and the lines 17 are connected against separation. The wires 17 are inclined inwardly and downwardly where they are jointly connected at their lower ends to the simulated figure of a man 19. The man 19 is weighted, for purpose to be presently described. The man 19 has leg portions

that are connected to a weighted flat base 19' that normally rests upon the bottom wall of the receptacle 5 when the parachute is in the lowermost position. The man 19 is also provided upon his back portion with a pouch 19*a*, into which may be disposed one or more pellets, such as the conventional BB shot and whereby the weight of the device may be varied in accordance with the rate of descent desired by the user.

In the use of the invention so far described, when it is desired to actuate the parachute, the bulb 10 is compressed, forcing air from the discharge end 9 of the tube 7 where they will rise in the form of bubbles upwardly to be entrapped beneath the canopy 12. Due to the pressure of the water over the apertures 16, the air will not leak out of the canopy and, when adequate air has been entrapped within the canopy, the parachute will rise upwardly to a point where it substantially floats upon the upper surface of the body of water. The canopy will continue to float and maintain the man 19 in suspended position until such time as sufficient air has spilled outwardly through the aperture 16 and permitting the weighted man 19 to cause the parachute to descend slowly through the water to the point where the base 19' of the man 19 rests upon the bottom of the container. The parachute may be caused to rise and fall in accordance with the wishes of the operator, providing a very novel and interesting animation as an amusement device.

Various means may be provided to control the escape of the entrapped air, such as one or more slits 20, illustrated in the modified form fragmentarily illustrated in Figure 4. The slits 20 may be cross-cut at 20' to form a plurality of flaps 20*a* and with the flaps being progressively shorter upwardly. The flaps 20*a* being progressively longer downwardly toward the bead 15, will be progressively more flexible as they increase in length and in the initial stages of the air escape, it will be relatively retarded by the shorter flaps and progressively larger in volume as it flexes the longer flaps thus, creating a progressively accelerated air escape. The underside 14 of the canopy may be provided with a film of oil that facilitates the flow of the entrapped air to its point of discharge to the aperture 16 or the slits 20. It is contemplated that the aperture 16 or the slits 20 will function to control the rate of discharge of the air in accordance with the interval of time that it is desired to have the parachute float upon the upper surface of the water. It is also contemplated, that when the device is to be employed as an animated display in merchandise windows or the like, that means be provided whereby the air bubbles may be either continuously discharged or alternately discharged by automatic means (not shown) and whereby the device will be continuously actuated as a means to attract the attention of persons to the merchandise display in the window and such automatic means will be arranged to cause the parachute to rise and fall at predetermined intervals.

It will be apparent from the foregoing that a very novel aquatic toy or amusement device has been provided. It is well known that when air is trapped in an enclosed space and fully submerged in water, it will exercise a buoyancy upon the entrapping object and if this buoyancy exercised by the entrapped air is greater, then the downward pull of the entrapping object is overcome and the object will rise to the surface. Upon arriving at the surface the entrapping object will float similar to a bubble until the air therein is released. The device will continue to float upon the water until the entrapped air has been absorbed by the water which obviously would require a relatively long time, such not being desirable or suitable for an action toy. The air escape openings may be round or irregular in shape and the size and number will determine the volume of air to be released and the speed desired for the descent of the device. It will of course be understood that the air discharge opening must be sufficiently small as to prevent the escape of the entrapped air when the parachute is submerged otherwise, the parachute would not rise. The reason for this is the weight and corresponding pressure of the overhead water plus the effect of capillary action upon the upper and lower surfaces of the parachute combine to resist the effort of the entrapped air to escape and it also tends to hold the parachute in a relatively fixed position. When the parachute rises to the surface, the overhead water pressure no longer exists and the entrapped air having a greater pressure than the atmosphere forces its way out of the parachute. The escape of the air may be so quickly brought about by the predetermined size of the discharge opening that a distinct snap can be heard as of a miniature explosion. The canopy is of tissue-thin material and of extremely light weight. The canopy will at all times due to its light weight remain erect throughout its travel. This is due largely to the stiff wire shroud lines 17. If the shroud lines were flexible, then the parachute would topple over when the suspended man reached the bottom and, in such a position it would be impossible to introduce the air for the next lifting operation. The parachute is merely dropped into the water and will immediately settle downwardly to cause the base of the suspended man to rest upon the bottom of the container. The air is then introduced as before described until a sufficient quantity has been entrapped into the parachute to cause the parachute to rise to the surface, where it will remain until the major portion of the air has escaped to the atmosphere. The parachutes may be made in various sizes in accordance with the particular use to which the device is to be put. For display purposes, it is obvious that the parachute will be made of a larger diameter than that for a toy and the air discharge opening or openings will be determined in accordance with the frequency of the rise and fall desired. While a novel form of air tube has been illustrated, it will be apparent also that any type of tube may be employed such as the conventional drinking straw or glass drinking tube, but it has been found that the novel form of air tube herein described may be furnished at a relatively low cost and may be manually shaped so that it will have a discharge end that can easily be directed to discharge the air directly beneath the canopy.

It is to be understood that the invention is not limited to the precise construction shown, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An aquatic amusement device in combination with a transparent vessel for supporting a body of water, an object in the form of a simulated parachute that is submerged in the water, the parachute having a relatively fixed dome-shaped canopy open at its bottom and whereby to form an air entrapping chamber, the canopy around its marginal edge being provided with a thickened bead, shroud lines connected with the canopy, the shroud lines embodying a plurality of relatively stiff and relatively fine wires that are connected at their upper end to a wire ring, the said ring having a diameter for snapping engagement with the bead, the several shroud wires converging downwardly to be jointly connected to a simulated figure of a man and whereby the man is suspended from the canopy, the figure of the man having a flat weighted base that is adapted to have a flat resting engagement upon the bottom of the vessel when the parachute is in a fully submerged position for maintaining the figure and the parachute in an upright position, the said canopy being provided with minute air escape openings, an air tube insertible within the vessel to a point adjacent its bottom and with a free end of the tube being directed upwardly and whereby air from the tube will bubble upwardly to

be entrapped within the chamber of the canopy for imparting buoyancy thereto, means carried at the upper end of the air tube for forcing air downwardly therethrough, the said canopy rising upwardly through the body of water when adequate buoyancy has been imparted thereto and whereby the canopy will float upon the water with the simulated man in suspended position, the said parachute when sufficient air has leaked therefrom through the openings shifting downwardly under the weight of the simulated man and its weighted base to a point where the weighted base rests upon the bottom of the vessel for maintaining the parachute in a vertical position through the medium of the stiff shroud wires.



2. The device according to claim 1 wherein the simulated man is provided with an open pouch upon his back for the reception of weighted pellets for increasing the descent of the parachute.

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