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B. L. GORDON, JR

2,101,646

AQUATIC TOY

Original Filed Nov. 28, 1936

Fig. 1.

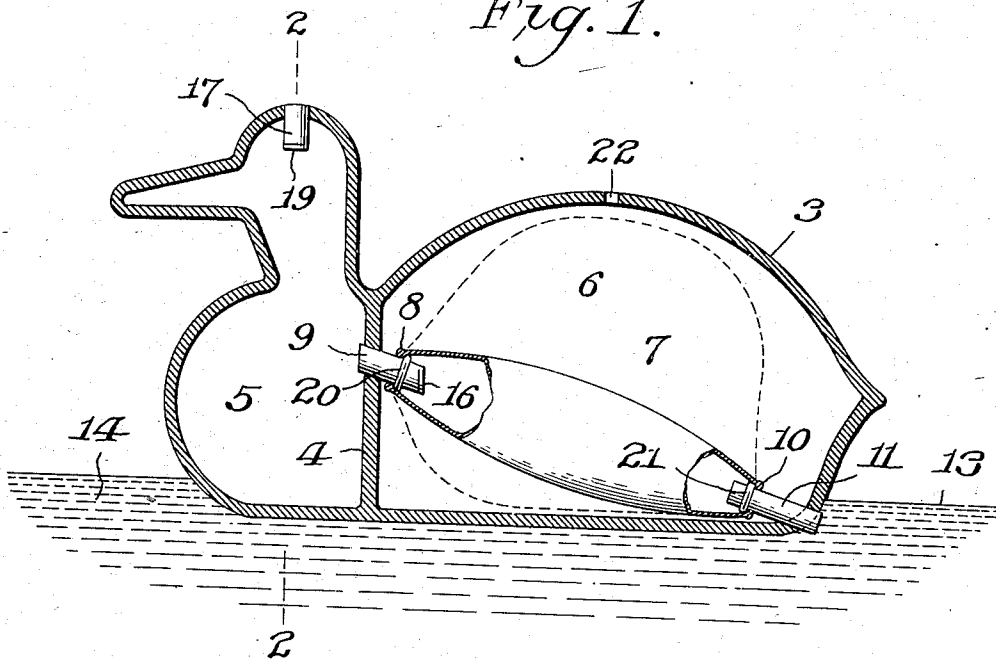


Fig. 2.

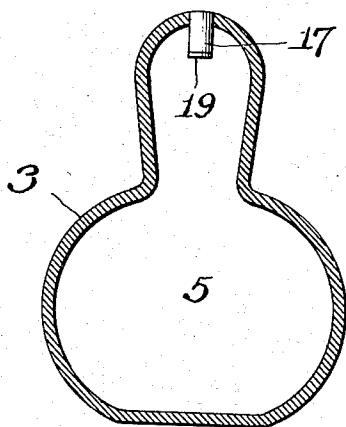


Fig. 3.

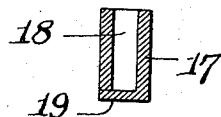


Fig. 4.

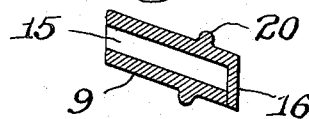
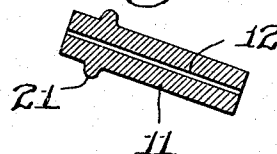


Fig. 5.



INVENTOR:
Burgess L. Gordon, Jr.,
BY *A. V. Group*
ATTORNEY.

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AQUATIC TOY

Burgess L. Gordon, Jr., Philadelphia, Pa., assignor
to Hogan Inventions, Inc., Philadelphia, Pa.,
a corporation of Pennsylvania

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Renewed September 20, 1937

2 Claims. (Cl. 46—92)

This invention relates to improvements in aquatic toys adapted to float upon a body of water and provided with means whereby a jet of air discharged from the toy causes the propulsion thereof.

The invention includes an air bag carried by the body of the toy and formed of stretchable rubber and connected to an air discharging device which is constructed and arranged to cause the propulsion of the toy when air is discharged from the air bag through the discharging device; and the invention includes also a suitable hand operated air pump for inflating the air bag.

The toy may be of any desired shape or configuration in simulation of an animal, water fowl, boat or other appropriate object; and the primary purpose of the invention is to so construct the body of the toy that it shall have a hollow portion provided with collapsible walls constituting an air pump for supplying air to the air bag. A further purpose is to form the toy of a hollow body adapted to float upon water and having a partition therein dividing it into two separate chambers, one of which contains the air bag and the other of which has collapsible walls and constitutes an air pump.

The invention consists of the elements and the combination of them hereinafter described and claimed.

In the accompanying drawing, illustrating the invention,

Figure 1 is a longitudinal vertical section of a toy, showing one form of embodiment of the invention floating upon a body of water.

Figure 2 is a transverse section of the toy, on line 2—2 of Fig. 1.

Figure 3 is a sectional detail of the valve for admitting external air to the air chamber of the air pump.

Figure 4 is a sectional detail of the valve for permitting air to pass from the pump into the inflatable air bag.

Figure 5 is a sectional detail of the device for discharging a jet of air from the air bag.

Referring to the drawing, 3 designates the hollow body of the toy appropriately shaped to simulate a swimming duck. The body 3 has a partition 4 therein dividing it into two separate chambers 5 and 6.

The rearward chamber contains a long air bag 7 formed of thin, stretchable rubber capable of being stretched from the collapsed condition, shown by full lines in Fig. 1, to the expanded or inflated condition, shown by dotted lines in Fig. 1, when air is pumped into the same, and capable of

automatically expelling the air therefrom as it contracts from its inflated condition to its collapsed or normal condition.

The forward end of the air bag 7 has a neck 8 which surrounds and is connected to a valve 9, and the rearward end of the air bag has a neck 10 which surrounds and is connected to a part or plug 11.

The plug 11 extends through the rearward wall of the toy body 3 near the bottom wall thereof and it is securely fastened thereto. The plug 11 has a passage or bore 12 of small diameter extending axially therethrough. The forward or inner end of the passage 12 is in communication with the air bag 7, and the rearward end of the passage is exposed exteriorly of the wall of the toy and below the level 13 of the body of water 14 upon which the toy floats, so that a jet of air issuing from the rearward end of the passage 12 will impinge against the water supporting the toy.

The valve 9 extends through the partition wall 4 and it is securely fastened thereto. The valve is formed of yieldable rubber and has an air passage 15 extending axially through the same, the rearward end of the passage being normally closed by a rearwardly opening, yieldable flap 16 which permits air to pass from the chamber 5 into the bag 7 and prevents the return of the air from the bag to the chamber.

The top wall of the chamber 5 is provided with a valve 17 which extends through the same and is securely fastened thereto. The valve 17 is formed of yieldable rubber and has an air passage 18 extending through the same. The upper or outer end of the passage 18 is open for the admission of external air, and the lower or inner end of the passage is normally closed by an inwardly opening, yieldable flap 19 which permits external air to enter the chamber 5 through the valve, and prevents the escape of air from the chamber through the valve.

The walls forming the body 3 of the toy and the partition 4 are formed of suitable rubber, and the walls of the chamber 5 are of such stiffness and resilience as to cause them to normally assume the shape illustrated in the drawing and to permit them to be collapsed for reducing the size of the chamber and to cause them to automatically resume the normal condition after being collapsed and released. Therefore it will be understood that the chamber 5 and its collapsible walls constitutes an air pump which may be operated by hand by alternately collapsing and releasing the collapsible walls. When the walls are

collapsed, air within the chamber 5 is forced through the valve 9 and into the air bag 7, while the valve 17 prevents the escape of the air there-through, and, when the collapsible walls are released, they automatically resume their normal condition and thereby draw external air into the chamber 5, while the valve 9 prevents the return of the air from the bag 7 to the chamber 5.

The rubber valves 9 and 17 and the plug 11 are secured to the rubber walls through which they extend by being vulcanized thereto; and the necks 8 and 10 on the forward and rearward ends of the air bag 7 are provided with suitable beads or rings which are stretched around and contracted upon the valve 9 and plug 11 as a means of connecting them thereto, and the valve 9 and plug 11 are provided with flanges or collars 20 and 21, respectively, to prevent the necks of the air bag from being withdrawn from the valve and the plug when the bag is inflated.

The top wall of the chamber 6 is provided with a vent 22 to permit air to escape from and to enter the chamber 6 when the air bag 7 therein is inflated and deflated.

It will now be understood that the air bag 7 can be easily and quickly inflated by hand by operating the air pump previously described; and that after the bag has been inflated and the toy placed upon a body of water, the automatic contraction of the air bag will slowly force the air therein out through the passage 12 in the plug 11 and that the air thus discharged from the rearward end of the plug will impinge against the water and propel the toy forwardly.

During the inflation of the air bag 7 a finger of the child or person using the toy can be placed over the outer end of the plug 11 to close the

passage 12 to prevent the escape of air from the bag during the inflation thereof; and the passage 12 may thus be kept closed after the bag 7 has been inflated and until the toy is released upon a body of water for operation.

I claim:

1. The combination of a hollow body constructed to float upon water and having a chamber therein whose walls are collapsible from a normal condition and automatically returnable to such condition to constitute an air pump, a stretchable rubber air bag carried by said body, a one-way valve admitting external air to said chamber, a one-way valve permitting air to pass from the chamber to the bag, and a part carried by said body and having an air passage extending there-through, one end of said passage being in communication with said bag and the other end of said passage being exposed exteriorly of said body.

2. The combination of a hollow body constructed to float upon water and having a partition therein dividing the interior thereof into two separate chambers, the walls of one of said chambers being collapsible from a normal condition and automatically returnable to such condition to constitute an air pump, a stretchable rubber air bag within the other chamber, a one-way valve admitting external air to the first named chamber, a one-way valve permitting air to pass from the first named chamber to the bag, and a part carried by said body and having an air passage extending therethrough, one end of said passage being in communication with said bag and the other end of said passage being exposed exteriorly of said body.

BURGESS L. GORDON, JR.