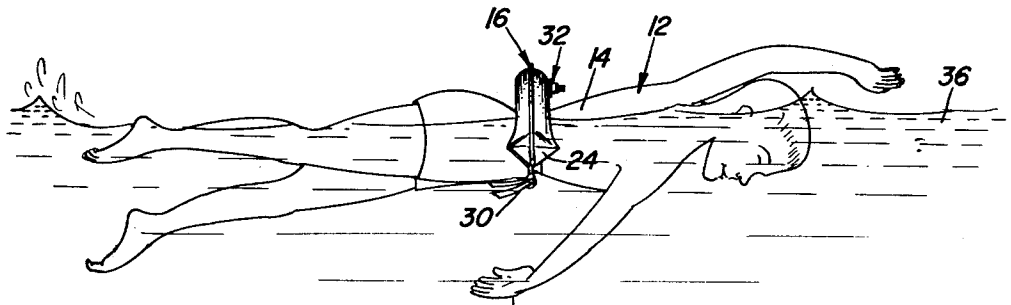
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SWIMMING AID WITH ADJUSTABLE BUOYANCY

Filed Feb. 28, 1962

Fig. 1



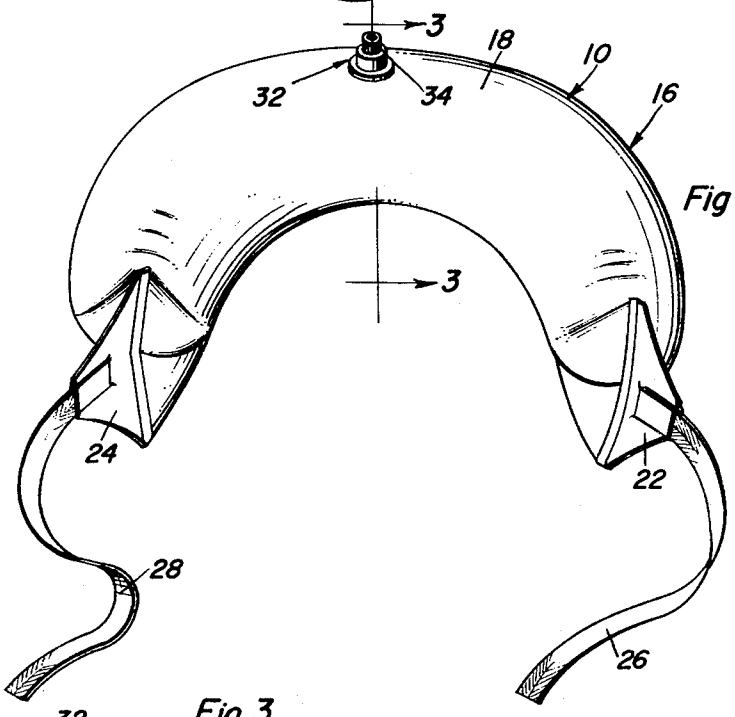
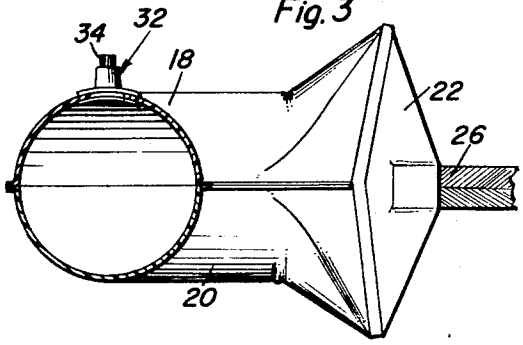


Fig. 2

Fig. 3



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SWIMMING AID WITH ADJUSTABLE BUOYANCY

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This invention relates to a novel and useful swimming aid which is designed primarily for providing progressively less supplemental buoyancy as a beginning swimmer becomes more skilled in swimming.

The swimming aid of the instant invention is constructed of a water-tight elongated hollow and inflatable tubular member which is longitudinally curved and has a generally semi-circular side outline defining opposite sides which generally parallel the medial plane of the curved tubular member. By being generally semi-circular in configuration, the tubular member may be utilized to encircle approximately one-half the waist of a swimmer and has strap members secured to its opposite ends. The free ends of the strap members may be tied together in any conventional manner so as to secure the tubular member about the waist of a beginning swimmer. If it is desired, should the beginning swimmer be completely inexperienced and have a comparatively high specific gravity, the swimming aid may be utilized to encircle the front portion of the waist. However, if the swimmer has more natural buoyancy and has been at least familiarized with the basic fundamentals of swimming, the tubular member may be utilized to encircle the back of the waist of the swimmer. In this manner, as the beginning swimmer attempts to swim in a face downward position, his midportion or torso will be buoyed upward toward the surface of the water by means of the inflatable tubular member.

The tubular member is provided with a quickly operable inlet and outlet valve assembly which is disposed at a point generally equally spaced from the opposite ends of the tubular member and on one side thereof. The valve assembly is provided with means for admitting and discharging air from the interior of the tubular member and the valve assembly includes a quickly operable actuator which is of the push-pull type.

The main object of this invention is to provide a swimming aid which may be utilized to provide the exact amount of supplemental buoyancy desired.

A further object of this invention is to provide a swimming aid which may be utilized in a manner whereby the supplemental buoyancy provided thereby may be progressively lessened as the beginning swimmer becomes proficient.

A still further object of this invention is to provide a generally semi-circular, inflatable and hollow tubular member whose end portions are flattened so as to conform to the sides of the wearer.

A final object to be specifically enumerated herein is to provide a swimming aid in accordance with the preceding objects which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long-lasting and relatively trouble-free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a side elevational view of a beginning swimmer with the swimming aid of the instant invention secured about the rear of the waist of the swimmer;

FIGURE 2 is a perspective view of the swimming aid; and

FIGURE 3 is an enlarged vertical sectional view taken substantially upon the plane indicated by the section line 3—3 of FIGURE 2.

Referring now more specifically to the drawings the numeral **10** generally designates the swimming aid of the instant invention.

In FIGURE 1 there may be seen a swimmer generally referred to by the reference numeral **12** about whose waist **14** a swimming aid **10** has been secured.

A swimming aid **10** comprises a fluid-tight, elongated and hollow inflatable tubular member generally referred to by reference numeral **16** which is longitudinally curved or arcuate and has a generally semi-circular side outline defining a pair of opposite sides **18** and **20**. In fact, a tubular member **16** may be formed of a pair of tubular half sections defining the opposite sides **18** and **20** from any suitable material such as plastic and joined together along adjacent edge portions in any convenient manner such as by heat welding.

A pair of opposite end tabs **22** and **24** are secured to the opposite ends of the arcuate tubular member **16** and it will be noted that the opposite ends of the tubular member **16** are cut on the bias, along a line generally perpendicular to the arcuate inner and outer marginal edge portions of said arcuate member, so as to enable the ends of the tubular member to be radially flattened and the then superposed edges of each end to be secured together in side-by-side relation forming opposite end portions of the arcuate tubular member **16** which are flattened and disposed at generally right angles to the medial plane of the tubular member **16**. In this manner, the opposite ends of the inner marginal portion of said arcuate tubular member will tend to be straightened and the opposite ends of the outer marginal portion of said arcuate tubular member will tend to be curved more sharply thereby forming inner opposite end flattened portions and outer bulbous or swelled portions on the opposite ends of said arcuate tubular member.

A pair of strap members **26** and **28** each have one end secured to the corresponding end tab in any convenient manner and the free ends of the strap members **26** and **28** may be knotted as at **30** to secure the tubular member **16** about the waist **14** of the swimmer **12**.

The tubular member **16** includes an inlet and outlet valve assembly generally referred to by the reference numeral **32** and the valve assembly **32** includes a push-pull type actuator **34** which may be pulled outwardly to vent the interior of the tubular member **16** with the ambient atmosphere and pushed inwardly so as to terminate communication of the interior of the tubular member **16** with the ambient atmosphere and prevent air from escaping from the interior of the tubular member **16**.

The placement of the valve assembly **32** is very important and as can be observed from FIGURE 1 of the drawings, the valve assembly **32** is disposed at a point spaced generally equally from the opposite ends of the tubular member and on one side thereof. The valve assembly **32** therefore projects away from the tubular member **16** toward the neck and shoulders of the swimmer **12** thereby making it practically impossible for the swimmer himself to pull the actuator **34** outwardly in order to discharge air from the interior of the tubular member.

In operation, the tubular member **16** may be secured about the waist **14** of the wearer **12** as indicated in FIGURE 1 of the drawings. When the swimmer assumes a generally horizontally disposed position with his face downward, substantially all of the tubular member **16** will be disposed beneath the water **36**. However, as can be seen from FIGURE 1 of the drawings, as the swimmer becomes more proficient, the intermediate or upper portion of the tubular member **16** will project above the water **36**. An instructor in charge of a class of several swimmers may therefore readily ascertain when it is de-

sirable to discharge more air from each tubular member **16** worn by the swimmers of his class. As a swimmer becomes more proficient and his waist **14** is continuously disposed closely adjacent the surface of the body of water **36**, small quantities of air may be discharged from the interior of the tubular member until such time as the swimmer **12** is being afforded very little supplemental buoyancy by means of the tubular member **16**. At this point, a tubular member **16** may be discarded and the swimmer **12** will be ready to advance into the class of more proficient swimmers.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A swimming aid for use in providing the desired amount of supplemental buoyancy for a beginning swimmer, said aid comprising a fluid-tight elongated hollow, inflatable and longitudinally curved tubular member having a generally semi-circular side outline and defining opposite sides thereof generally paralleling and disposed on opposite sides of the medial plane of said curved member, said curved member including opposite end edges disposed in planes generally paralleling the corresponding radii of said curved member disposed at opposite ends thereof, means for admitting air into said tubular member and discharging air therefrom, strap means carried by the opposite ends of said tubular member and adapted to secure said tubular member to a swimmer's mid-portion with said member disposed across and embracing the small of the swimmer's back, the remote ends of said curved member being radially flattened and the inner and outer edge portions of each end of said curved member being sealingly secured together along a line disposed substantially perpendicular to said medial plane whereby the opposite ends of the inner marginal peripheral portion of said tubular member will tend to be straightened and the opposite ends of the outer marginal peripheral portion of said tubular member will tend to be curved more sharply thereby forming inner opposite end flattened portions and outer bulbous portions on the opposite ends of said tubular member, said flattened inner end portions being readily transformed into cylindrical portions conforming exactly with the contour of the adjacent portions of the waist of the swimmer about which said aid is secured and to increase the comfort of the swimmer wearing the swimming aid while also simultaneously increasing the total area of contact between the swimming aid and the skin of the swimmer for reducing the possibility of the swimming aid slipping about the waist of the swimmer.

2. The combination of claim 1 wherein each end of said tubular member includes an end tab secured thereto along said line and including a free edge portion to which one end of the corresponding strap means is secured.

3. The combination of claim 1 wherein said means for admitting air into the interior of said tubular member comprises a quickly operable inlet and outlet valve assembly carried by said tubular member and including means for admitting air into said member and discharging selected quantities of air therefrom, said valve assembly being disposed at a point generally equally spaced from the opposite ends of said member on one of said sides thereof in a position spaced approximately equally from the inner and outermost peripheral edge portions thereof, said strap means being further adapted to secure said tubular member to a swimmer's mid-portion with said one side of said member facing toward the shoulders of the swimmer.

4. The combination of claim 3 wherein said valve assembly includes a movable push-pull operator movable toward and away from said plane and disposed inwardly of its outermost position when in the closed position.

5. The combination of claim 4 wherein said push-pull operator projects outwardly of said valve assembly and may therefore be readily actuated.

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