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B. MARKWITZ

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BUOYANCY RING

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Fig. 1

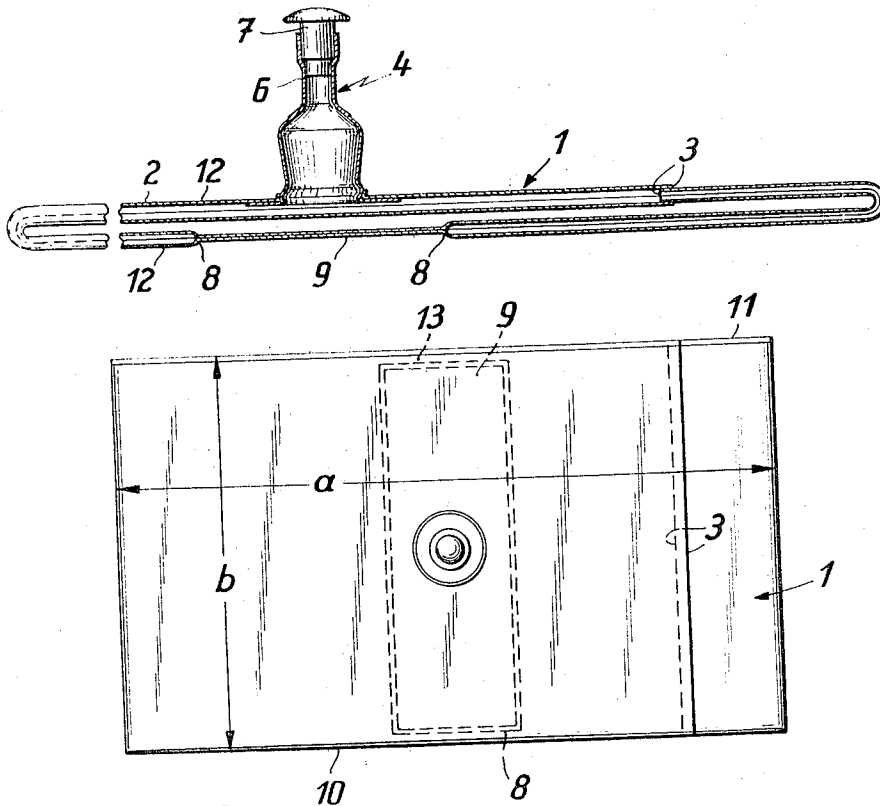


Fig. 2

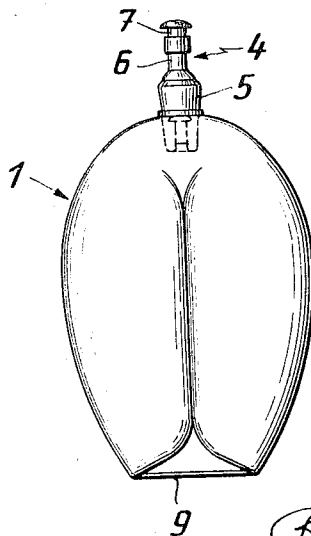


Fig. 3

INVENTOR.
Bernhard Markwitz
BY
Beaman & Beaman
attys

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BUOYANCY RING

Bernhard Markwitz, Brodersweg 9-10,
Hamburg, Germany

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4 Claims. (Cl. 9-340)

The invention relates to an inflatable buoyancy ring.

Inflatable buoyancy rings that are already known are even in an uninflated state of considerable size and therefore difficult to handle and to transport. They are particularly unsuitable for learning to swim, since they hinder the learner too much as he carries out swimming movements and they inadequately safeguard him from swallowing water, a mishap that causes anxiety.

Basic to the invention, therefore, is the problem of creating a buoyancy ring that gives support and facilitates learning to swim but that avoids the disadvantages stated above and gives the swimmer a feeling of safety in the water.

This problem is solved through having the buoyancy ring that is put around the upper arms and/or legs of the swimmer made of a flexible double-layer sheet formed into a tube out of plastic, especially PVC or polythene, out of rubber or out of other material that is air and water tight, and equipped with an air inlet tube piece closed by a plug. In this arrangement the width of the flat uninflated ring, measured in the direction of its axis, is so large in relation to its length that the size of the air cushion resulting from the inflation of the tube is sufficient to afford a secure hold on the arm or leg the swimmer inserts through the ring and to provide a desired degree of buoyancy.

The ring is preferably provided with at least one flat and uninflated section. This particularly important supplementary feature ensures that the inflated ring can neither twist around the arm or leg of the swimmer nor unwind or unroll from his arm or leg. The flat section is preferably laid along the inside of the upper arm, so that the danger of interfering with the circulation of the blood is greatly diminished and in practice excluded.

The object of the invention is intended to be placed preferably upon a swimmer's arm, particularly upon his upper arm, but also upon his lower arm or his hand.

Further features and advantages of the invention emerge in the description combined with the annexed drawing.

FIG. 1 is a side view, partly in section, of the ring uninflated,

FIG. 2 is a top view of the ring uninflated, and

FIG. 3 represents a side view of an inflated ring on a smaller scale.

The ring 1 is formed from flexible sheeting 2 which is water and air tight and consists of heat sealable plastic in the example given of the embodiment.

The material from which the sheeting is manufactured may be both dilatible and elastic, but does not require to be so. To manufacture the ring 1 the flat sheeting 2 is turned over to form a ring, and the free margins 3 are connected tightly to each other, more especially by means of heat sealing or bonding. Thereupon one half of the ring is turned over along the margin 10 and put over the other half, and the free margins 11 are connected tightly to each other by sealing. These procedures can also be undertaken in the reverse order. To manufacture the buoyancy ring work can also start on the basis of a seamless tube.

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As FIGS. 1 and 2 show, this tube is flat when uninflated. It is important that the width b should be comparatively large in relation to the length a . In an example of an embodiment that is preferred for children's arms b equals 145 mm. approximately and a equals 235 mm. approximately. For the unclothed upper arms of adults these dimensions are preferably 145 x 275 mm., for the clothed upper arms of adults 145 x 315 mm. approximately.

The outward facing surface of sheeting 12 of the formed ring 1 has set tightly into it an air inlet tube piece 4, which consists of a section 5 of larger diameter and a section 6 of smaller diameter to receive a plug 7. The section 5 is of such elasticity that when the ring 1 is inflated the air inlet tube piece 4 with the plug 7 may, as is indicated by the broken lines in FIG. 3, be thrust down into the hollow space of the ring 1, so that said air inlet tube piece does not project above the peripheral surface of the inflated ring and thus ensures that the valve is to a great extent secure from unintentional opening.

The ring 1 is, on the side lying approximately opposite to the air inlet, provided with a continuous separating sealed seam 8 stretching the width of the ring, so that when the ring is inflated a flat section 9, devoid of air, is present. This feature is particularly important to ensure an effective adhesion of the inflated ring to the arm or leg of the swimmer. If several such flat sections are provided, it is recommended that alongside these sections air passage ducts should be provided (as indicated at 13).

To utilize the rings, these are drawn while still uninflated over the arms, preferably the upper arms, and/or the legs, preferably the ankles, and then inflated. In this procedure the flat section 9 opposite the air inlet is, for instance, so turned that the ring 1 causes no hindrance to the movements of the arm, i.e. the flat section 9 comes to rest in the area of the armpit. After inflation the air inlet tube piece 4 is then thrust down into the hollow space of the ring 1.

The sheeting may be dyed with a luminous colorant, which may well enhance the value of the buoyancy rings for instructional and life-saving purposes.

The increase in volume upon inflation results essentially in the margins 10 and 11 coming closer together, and the width b consequently diminishes. In the uninflated state the length a is preferably 1.5 to 2.5 times as great as the width b measured in the direction of the ring's axis. If the length a is more than four times as great as the width b , unsatisfactory conditions result both as regards the degree of buoyancy attainable and as regards the clinging of the ring to the limbs.

What I claim is:

1. A buoyancy ring particularly suitable as a swimming aid comprising, in combination, an inflatable ring of tubular cross section having an inner layer and an outer layer of flexible material which define a ring when deflated having an axial dimension with respect to the axis of the ring at least one eighth the peripheral dimension of the deflated ring, a non-inflatable portion defined on said ring having a flattened configuration generally disposed parallel to the ring axis, means for introducing a gas into the space defined between said layers, the peripheral dimension of said ring being such as to permit said ring to snugly encompass a limb of the wearer upon inflation of the ring, and said non-inflatable portion being of such

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peripheral dimension as to underlie the inner side of the wearer's limb to prevent interference with the movement thereof.

2. A buoyancy ring as in claim 1 wherein the deflated axial dimension of said ring is approximately one fifth 5 to one third of the peripheral length of said ring.

3. A buoyancy ring as in claim 1 wherein said non-inflatable portion is formed by maintaining a portion of said inner and outer layers in contiguous relation.

4. A buoyancy ring as in claim 3 wherein said non-inflatable portion is formed by bonding said inner and outer layers together.

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10 MILTON BUCHLER, *Primary Examiner*.

ALFRED E. CORRIGAN, *Examiner*.