

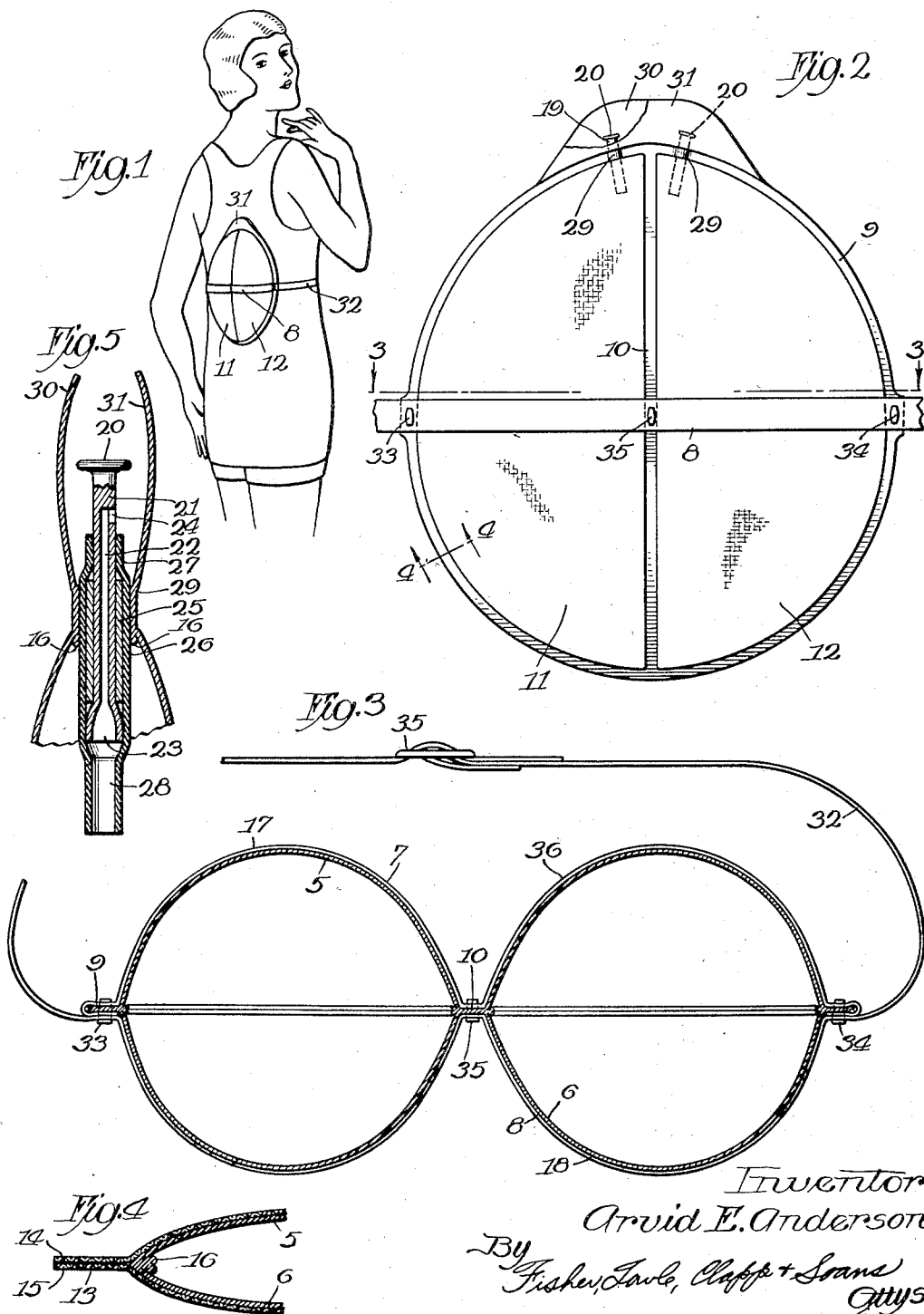
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SWIMMING DEVICE

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UNITED STATES PATENT OFFICE.

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SWIMMING DEVICE.

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This invention relates to swimming devices of the type provided for assisting persons in learning how to swim, and for enabling persons who cannot swim to keep their heads above water.

One of the objects of the invention is to provide a suitable device of the above described character, which will be adapted to be positioned in the vicinity of the small of the back of a person whereby substantially the entire body will be permitted to enter the water. Another object is to provide such a device which will not hinder arm and leg movement whereby practicing of the various known swimming strokes will not be interfered with.

Further objects of the invention are to provide a device of the above described character in the nature of an air cushion which will be strong and dependable; which may be easily inflated; which will be relatively small and compact both when deflated and inflated; and to provide means for fastening the device in the said position on the body, which means will not interfere with action of the arms or legs in swimming; and in general to provide an improved device of the class described. Other objects and advantages of the invention will be understood when reference is had to the following specification and accompanying drawing, in which I have illustrated a preferred embodiment of my invention, and in which:

Fig. 1 is a view illustrating the method of using the device.

Fig. 2 is a side elevation of the device when deflated.

Figs. 3 and 4 are sections on the lines 3—3, and 4—4 of Fig. 2 illustrating the device when inflated, and

Fig. 5 is a section of a valve used in connection with my swimming device.

Referring now to the drawings, my improved device comprises a pair of sheets of rubber indicated at 5 and 6, each provided with a protective covering of fabric, preferably knitted fabric, indicated at 7 and 8 respectively. The combined sheets 5 and 7 and 6 and 8 respectively, may constitute sheets of a rubberized fabric hereinafter referred to as 17 and 18 respectively, for convenience. These sheets are placed face to face with their rubber sides adjacent each other and then united by suitable means, preferably vulcanizing, around relatively

narrow marginal zones, as indicated at 9, and also along a relatively narrow intermediate zone 10.

It will be seen that the two sheets of rubberized fabric thus united, form a pair of independent chambers 11 and 12, which are adapted to be inflated. By using knitted fabric for the protective covering, stretching of the rubber sheets due to inflation of the device is not hampered, since such fabric is also capable of being stretched a considerable amount.

I prefer to unite these sheets together as above mentioned, by means of vulcanizing, and I further prefer to vulcanize the said zones under a relatively high pressure. By thus uniting the two sheets under pressure, a very thin sheet of rubber indicated at 13, (Fig. 4) will remain between the marginal portions 14 and 15 respectively of the two rubberized sheets of fabric, part of the excess of rubber being forced inwardly to form an integral bead 16 around the respective peripheries of the two chambers 11 and 12 on the inside thereof. It will, of course, be understood that before the sheets are united as above described, the rubber sheets 5 and 6 are of substantially the same thickness to the edge of the fabric and that when pressure is applied to the marginal portions, some of the rubber will be forced inwardly, as above explained. Due to the pressure applied in uniting the sheets, the rubber is forced into the interstices of the fabric in the said marginal and intermediate zones, and thereby produces a very strong bond between the two sheets of fabric. The bead 16 also provides a material advantage in that it serves to reinforce the joint between the two rubber sheets 5 and 6 so that separation thereof at the joint is practically impossible.

In the present embodiment I prefer to provide the sheets 17 and 18 of substantially circular form, as best shown in Fig. 2. With the sheets circular in form, and joined together as above described, it will be seen that I produce a pair of oppositely facing semi-cylindrical chambers which are adapted to be inflated to form an air cushion comprising two independent but connected chambers. When these chambers are inflated, they will assume a circular shape substantially as illustrated in Fig. 3 in cross section, and the cushion will have a substantially oval shape in side elevation, but

slightly pointed at its opposite ends as will be understood from an inspection of Fig. 1.

To facilitate inflation of the chambers, I provide suitable valve means indicated at 19 and 20 for the respective chambers. I prefer to provide valves which will permit the person who desires to use the device to inflate the same by blowing thereinto. One desirable form of valve for this purpose, includes a plunger 21 having a central bore 22 therethrough opening at its inner end as indicated at 23, and at its outer end to the side of the plunger as indicated at 24. The plunger is slidably mounted in a sleeve 25 which is cemented or otherwise secured within a suitable rubber sleeve 26. The sleeve 26 extends upwardly beyond the end of the sleeve 25 as indicated at 27 so as to surround a portion of the plunger 21 and at its lower end as indicated at 28. The valve is mounted between the two sheets which are united to form the chambers, and the rubber sleeve 26 of the valve structure is vulcanized or otherwise united to the rubber facing of the respective sheets 17 and 18 as indicated at 29.

As shown in Fig. 5, the valve is in open position to permit inflation or deflation of the chamber with which it communicates. It will be seen that air may be blown into the chamber through the apertures 24, 22 and 23, and that when a sufficient amount of air has been introduced, the plunger may be slid downwardly through the sleeve 25 until the aperture 24 is closed by the upwardly extending portion 27 of the rubber sleeve 26. It will be further noted that when the valve is in the position shown in Fig. 5, the lower end of the rubber sleeve 26 may be pinched between the fingers to prevent the escape of air from the chamber while the person takes a new breath so as to enable him to further inflate the cushion. The bulging lower end of the plunger 21 is effective to prevent the plunger 21 from being pulled entirely out of the sleeve 25. I prefer to extend the sheets 17 and 18 so as to provide flap portions 30 and 31 respectively as best shown in Fig. 2 and Fig. 5, for protecting the valve structures.

As above brought out, it is contemplated that a swimming device of the form described will be applied to the back of the swimmer in the vicinity of the small of the back. For the purpose of securing the device to the body, I provide a strap member 32 extending across one side of the cushion and secured thereto by suitable means such as staples at points in the united marginal zone 9 as indicated at 33 and 34, and also at 35 in the intermediate united zone 10. The strap member extends outwardly from the opposite edges of the cushion and one end of the strap is provided with a suitable buckle 35 permanently secured thereto, and

which is adapted to receive and grip the opposite end of the strap member. I further provide a strap member 36 on the opposite side of the cushion and secured thereto at the same points at which the strap member 32 is secured. From an inspection of Fig. 3 it will be seen that the strap member 36 and the opposite portion of the strap member 32 serve to limit the degree of inflation or expansion of the respective chambers. These strap portions therefor serve to reinforce the cushion structure so as to prevent rupture of the joints in case excessive pressure is introduced thereinto.

I am aware that various changes in the form, construction and proportion of parts may be made in constructing a device of this type without departing from the spirit of the invention, the scope of which should be determined by reference to the following claims, which should be construed as broadly as possible, consistent with the state of the art.

I claim as my invention:

1. A swimming device of the class described, comprising an air cushion adapted to be positioned on a person in the vicinity of the small of the back, and means for maintaining the cushion positioned closely adjacent the person's back, comprising a strap member secured to the cushion and extending across the outside thereof when the cushion is inflated and so positioned, and around the body of the person.

2. In a swimming device of the class described, the combination of a pair of sheets of rubberized fabric of substantially circular shape, united together around their peripheries and at a relatively narrow intermediate zone so as to form a pair of oppositely facing substantially semi-circular air chambers, and means for positioning the device on the body of a person.

3. In a swimming device of the class described, the combination of a pair of independent sheets of rubber coated knitted fabric united together at a relatively narrow marginal zone and at a relatively narrow intermediate zone so as to form a pair of independent air chambers, said chambers being adapted to be inflated, and the knitted fabric permitting the rubber coating to stretch as an incident to inflation of the chambers.

4. In a swimming device of the class described, the combination of a pair of substantially circular sheets of rubber coated knitted fabric, united together along a relatively narrow marginal zone and along a relatively narrow and substantially diametrical zone so as to form a pair of independent oppositely facing semi-circular shaped chambers adapted to be inflated, said zones being united by vulcanizing under pressure so as to form an integral rubber reinforcing bead at the point of union of said sheets,

and valve means for each of said chambers through which the latter may be inflated.

5 5. In a swimimng device of the class described, the combination of a pair of substantially circular sheets of rubber coated knitted fabric united together in a relatively narrow marginal zone and along a relatively narrow and substantially diametrical zone, so as to form a pair of independent oppositely facing substantially semi-circular shaped chambers, adapted to be inflated, said knitted fabric being adapted to stretch with the rubber coating as an incident to inflation of the chambers, and said chambers 10 being adapted to together assume a substantially oval shaped formation having relatively pointed end portions.

15 6. In a swimming device of the class described, the combination of a pair of sub-

stantially circular sheets of rubber coated fabric united together in a relatively narrow marginal zone and along a relatively narrow and substantially diametrical zone, so as to form a pair of independent oppositely facing semi-circular shaped air-tight chambers, said chambers being adapted to be inflated whereby the same will together assume a substantially oval-shaped formation having relatively pointed end portions, means for fastening the device on the body of a person, and comprising a strap member secured to the device at substantially diametrically opposite portions of said marginal zone, and extending across the device and also secured thereto at said intermediate zone. 20 25 30 35

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