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(54) An armband for swimming

Schwimmarmband

Bracelet pour la nage

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Description

[0001] This invention relates to armbands of the type that are used as an aid in swimming.

[0002] Inflatable armbands are sometimes worn as an aid to swimming, particularly by those who are learning to swim. These armbands are useful in adding to the buoyancy of the wearer such that he or she can more easily stay afloat. Inflatable armbands are, however, disadvantageous in that time and effort must be expended in order to inflate them for use. They may also become unusable if punctured.

[0003] FR 2698280, which is considered to the closest state of the art, discloses a floatation device with an arm opening. The opening comprises pads to wedge the device on a user's arm and prevent rotation of the device around the arm. However, it cannot accommodate arms of different sizes.

[0004] It is an object of this invention to address these problems.

[0005] According to one aspect of this invention, there is provided an armband for use in swimming, the armband including: a buoyant portion of buoyant material arranged to define an arm-receiving aperture; and gripping means for gripping a wearer's arm received in the aperture, wherein the gripping means are integrally formed with the buoyant portion, and wherein the gripping means include one or more further apertures adjacent the arm-receiving aperture and a respective resiliently-deformable gripping member is provided between each further aperture and the arm-receiving aperture, the gripping member arranged to be resiliently deformed by insertion of a wearer's arm and thereby to grip the arm.

[0006] This is advantageous in that the buoyant material need not be inflated. Additionally, providing gripping means that are integral with the buoyant portion results in an armband that is cheap and easy to manufacture.

[0007] Preferably the buoyant material is a foam material and preferably one that is resiliently deformable, such as PE/EVA foam. Preferably, the buoyant portion is formed from a single piece of the buoyant material.

[0008] The or each gripping member may include a projection that projects into, or at least partially defines, the aperture. There may be at least two gripping members that extend across the aperture, those members may be arranged to form arm-gripping jaws. Surfaces of jaws may be shaped and configured to promote grip between the jaws and a wearer's arm inserted therebetween. The jaws may be provided with, for example, undulating or serrated surfaces.

[0009] The gripping means may include one or more lobes that project into the arm-receiving aperture. The or each lobe may have an aperture therethrough. In preferred embodiments of this invention, there may be three or four lobes.

[0010] The armband may include a plurality of, substantially identical, ones of the buoyant portion, each including the gripping means integrally formed therewith and wherein these buoyant portions are stacked to form a laminate. Each buoyant portion that goes to make up the laminate may be bonded to the buoyant portion with which it is juxtaposed. The bonding may include one or more of, for example: an adhesive and welding.

[0011] Specific armbands that embody this invention are now described by way of example only and with reference to the accompanying drawings, in which:

Figure 1 is a plan view of one armband having a pair of arm-gripping jaws;

Figure 2 is a sectional view of the Figure 1 armband, the section being taken along the line II-II of Figure 1;

Figure 3 is a sectional view of the Figure 1 armband, the section being taken along the line III-III of Figure 1;

Figure 4 is a plan view of another armband having three arm-gripping lobes; and

Figure 5 is a plan view of a further armband having four arm-gripping lobes.

[0012] Figure 1 shows an armband 10 for use as an aid by a child (not shown) in swimming. The armband 10 is a laminate that is made up of three layers. These layers 20,30,40 are shown in the sectional views of Figures 2 and 3. Each layer 20,30,40 is, in general, the same as each other layer 20,30,40. A representative one 20 of the layers only will therefore be described in detail, it being understood that the other two layers 30,40 are, in general, the same.

[0013] With reference to Figure 1, the layer 20 is a single piece of resiliently deformable and buoyant material, which in this embodiment is PE/EVA foam. It is substantially planar and shaped so as to be generally rectangular, but with rounded corners. In addition, the two shorter sides of the generally rectangular layer 20 are also rounded, with one side being convex and the other concave. The major dimensions of the layer 20 are 260mm long, 185mm wide and about 16mm thick. The concave side is formed with a diameter of 130mm and the convex side is formed with a diameter of 170mm.

[0014] The layer 20 has an arm-receiving portion 50 formed in it. This portion 50 is generally circular and positioned adjacent the concave side of the layer 20. The diameter of the arm-receiving portion is 105mm. The layer 20 also includes gripping means in the form of jaws 60. The jaws 60 are two strips of integral material of the layer 20 that each extend across the arm-receiving portion 50, parallel to the major axis of the generally rectangular layer 20 and spaced apart from each other so as to divide the arm-receiving portion 50 into three smaller apertures: one arm-receiving aperture 52 between the two jaws 60, and one 53,54 to the side of each jaw and between the wall of the arm-receiving portion 50. Sides

of the two jaws 60 that face one another are provided each with an undulating profile 62 that is intended to increase grip on an arm received therebetween.

[0015] A body portion of the layer 20 that surrounds and extends from the arm-receiving portion 50 and the jaws 60 includes, in this embodiment, a majority of the buoyant foam material of layer 20 and so constitutes a buoyant portion 70.

[0016] As stated, the layer 20 is stacked with two other layers 30,40 that are generally the same as the layer 20. Each layer 20,30,40 is bonded to its neighbour using an appropriate adhesive to form a laminated structure, which constitutes the armband 10. Thus, the cross section of the armband 10 perpendicular to the direction of stacking is substantially constant.

[0017] In use, the armband 10 is worn by a child inserting his or her arm through the arm-receiving aperture 52 that is between the two jaws 60. This causes the jaws 60 to be forced apart, into the space of the apertures 53,54 to either side of the jaws. As the material of the armband 10 is resiliently deformable, the jaws 60 exert a force inwardly on the child's arm, thereby securing the armband 10 to that arm. The armband 10 is worn with the concave side thereof adjacent the child's body. The concave shape of this side, at least to some degree, follows the shape of the child's body and so renders the armband 10 comfortable to use. At least one armband 10 would be worn on each arm.

[0018] Figure 4 shows another armband 100 that is in many ways the same as the armband 10 described above with reference to Figures 1,2 and 3. For example, the other armband 100 has the same external shape and is a laminate, made up of three layers, only a top one of which 120 is shown in Figure 4. This other armband 100 differs however in the arrangement of its gripping means. Specifically, the other armband 100 lacks the jaws 60 that extend across the arm-receiving portion 50 of the first-described armband 10. Although this other armband 100 includes an arm-receiving portion with an arm-receiving aperture 150, instead of jaws the arm-receiving portion it has three lobes 160 that project into the arm-receiving aperture 150. The lobes are semi-circular, are evenly distributed about the periphery of the aperture 150 and are integral with material of the layer 120. Each lobe 160 also includes a lobe aperture 152 therethrough that is concentric with the respective lobe. Thus, the lobes 160 have the appearance of convex arcuate projections that project into the arm-receiving aperture 150.

[0019] This other armband 100 is used in much the same way as that 10 described above with reference to Figures 1,2 and 3. In use, when an arm is inserted between the lobes 160 and into the arm-receiving aperture 150, the lobes 160 are deformed to at least partially occupy space of the lobe apertures 152. As the material of the armband 100 is resiliently deformable, the deformed lobes 160 exert a force on the arm so as to grip it.

[0020] The further armband 200 shown in Figure 5 is the same as that described above with reference to Figure 4, but includes four lobes 260. These lobes 260 are the same as those lobes 160 previously described, but are four in number.

[0021] It is envisaged that the armbands 10,100,200 described above are arranged such that, in use, each produces a buoyancy of not less than 15 newtons. This magnitude of buoyancy is considered suitable for an armband for use by a child of 6 to 12 years of age in accordance with European Regulation EN 13138-1 Type B. If an armband that embodies this invention were to be provided for use by a person of an age outside this range, the buoyancy and/or dimensions of that armband would be chosen accordingly. Specifically, it is envisaged that an armband that embodies this invention and that is for use by a younger child may be provided. In so doing, it will be understood that one or more of the armbands described above may need to be scaled down.

[0022] For example, if that child were between 2 and 6 years old, each armband may be sized in order to have a buoyancy of 12.5 newtons, again, in accordance with the Regulation referred to above.

[0023] Although a European regulation is referred to above, armbands that embody this invention may alternatively or additionally be arranged so as to be in accordance with regulations in force in other jurisdictions.

Claims

1. An armband (10) for use in swimming, the armband including: a buoyant portion (20, 30, 40) of buoyant material arranged to define an arm-receiving aperture (52); and gripping means (60, 160, 260) for gripping a wearer's arm received in the aperture, wherein the gripping means are integrally formed with the buoyant portion, **characterised in that** the gripping means includes one or more further apertures (53, 54, 152) adjacent the arm-receiving aperture a respective resiliently-deformable gripping member (60, 160, 260) is provided between each further aperture and the arm-receiving aperture, the gripping member arranged to be resiliently deformed by insertion of a wearer's arm and thereby to grip the arm.

2. An armband according to claim 1, wherein the buoyant material is a foam material this is resiliently deformable and the buoyant portion is formed from a single piece of that material.

3. An armband according to any preceding claim, wherein the or each gripping member includes a projection (160, 260) that projects into, or at least partially defines, the aperture.

4. An armband according to any preceding claim, wherein there are at least two gripping members and those members are arranged to form arm-gripping jaws (60).

5. An armband according to claim 4, wherein surfaces (62) of the jaws are shaped and configured to promote grip between the jaws and a wearer's arm inserted therebetween.

6. An armband according to claim 5, wherein the jaws are provided with undulating or serrated surfaces (62).

7. An armband according to any preceding claim, wherein the gripping means includes one or more lobes (160, 260) that project into the arm-receiving aperture.

8. An armband according to any preceding claim, wherein the or each lobe (160, 260) has an aperture (152) therethrough.

9. An armband according to any preceding claim, wherein there are three or four lobes.

10. An armband according to any preceding claim, wherein the armband includes a plurality of, substantially identical, buoyant portions (20, 30, 40), each including the gripping means integrally formed therewith and wherein these buoyant portions are stacked to form a laminate.

11. An armband according to claim 10, wherein each buoyant portion forming the laminate is bonded to the buoyant portion with which it is juxtaposed.

Patentansprüche

1. Armband (10) zur Verwerdung beim Schwimmen, wobei das Armband aufweist:

   einen schwimmfähigen Abschnitt (20, 30, 40) aus einem schwimmfähigen Material, der so angeordnet ist, dass er eine den Arm aufnehmende Öffnung (52) definiert; sowie Einspannmittel (60, 160, 260) zum Festhalten des Arms eines Trägers, der in der Öffnung aufgenommen ist, wobei die Einspannmittel einteilig mit dem schwimmfähigen Abschnitt gebildet sind, **dadurch gekennzeichnet, dass** das Einspannmittel eine oder mehrere weitere Öffnungen (53, 54, 152) neben der den Arm aufnehmenden Öffnung aufweist, während ein entsprechendes elastisch verformbares Einspannelement (60, 160, 260) zwischen jeder weiteren Öffnung und der den Arm aufnehmenden Öffnung vorgesehen ist, wobei das Einspannelement angeordnet ist, um durch das Einführen eines Arms des Trägers elastisch verformt zu werden und **dadurch** den Arm festzuhalten.

2. Armband nach Anspruch 1, wobei das schwimmfähige Material ein Schaumstoff ist, der elastisch verformbar ist, und der schwimmfähige Abschnitt aus einem einzeigen Stück dieses Materials hergestellt ist.

3. Armband nach einem der vorhergehenden Ansprüche, wobei das oder jedes Einspannelement einen Vorsprung (160, 260) aufweist, der in die Öffnung ragt oder sie zumindest teilweise definiert.

4. Armband nach einem der vorhergehenden Ansprüche, wobei mindestens zwei Einspannelemente vorhanden sind und diese Elemente angeordnet sind, um den Arm festhaltende Backen (60) zu bilden.

5. Armband nach Anspruch 4, wobei die Flächen (62) der Backen geformt und konfiguriert sind, um die Haftung zwischen den Backen und einem Arm des Trägers, der sich dazwischen befindet, zu unterstützen.

6. Armband nach Anspruch 5, wobei die Backen mit gewellten oder gezahnten Flächen (62) versehen sind.

7. Armband nach einem der vorhergehenden Ansprüche, wobei das Einspannmittel eine oder mehrere Ausbuchtungen (160, 260) aufweist, die in die den Arm aufnehmende Öffnung ragt bzw. ragen.

8. Armband nach einem der vorhergehenden Ansprüche, wobei durch die oder jede Ausbuchtung (160, 260) eine Öffnung (152) verläuft.

9. Armband nach einem der vorhergehenden Ansprüche, wobei drei oder vier Ausbuchtungen vorhanden sind.

10. Armband nach einem der vorhergehenden Ansprüche, wobei das Armband mehrere im Wesentlichen völlig gleiche schwimmfähige Abschnitte (20, 30, 40) aufweist, die jeweils die Einspannmittel aufweisen, die einteilig damit gebildet sind, und wobei diese schwimmfähigen Abschnitte gestapelt sind, damit ein Schichtelement entsteht.

11. Armband nach Anspruch 10, wobei jeder schwimmfähige Abschnitt, aus dem das Schichtelement besteht, mit dem schwimmfähigen Abschnitt, zu dem er benachbart ist, verbunden ist.

Revendications

1. Bracelet (10) à utiliser pour la nage, le bracelet comprenant: une portion flottante (20, 30, 40) en matériau flottant agencée pour définir une ouverture de

réception de bras (52); et des moyens de saisie (60, 160, 260) pour saisir le bras d'un utilisateur reçu dans l'ouverture, où les moyens de saisie sont réalisés intégralement avec la portion flottante, **caractérisé en ce que** le moyen de saisie comprend une ou plusieurs autres ouvertures (53, 54, 152) adjacentes à l'ouverture de réception de bras, un élément de saisie respectif élastiquement déformable (60, 160, 260) est réalisé entre chaque autre ouverture et l'ouverture de réception de bras, l'élément de saisie étant agencé pour être déformé élastiquement par l'insertion du bras d'un utilisateur et pour saisir ainsi le bras.

2. Bracelet selon la revendication 1, où le matériau flottant est un matériau mousse qui est élastiquement déformable, et la portion flottante est réalisée en une seule pièce de ce matériau.

3. Bracelet selon l'une quelconque des revendications précédentes, où le ou chaque élément de saisie comprend une saillie (160, 260) qui fait saillie dans, ou définit au moins partiellement, l'ouverture.

4. Bracelet selon l'une quelconque des revendications précédentes, où il y a au moins deux éléments de saisie, et ces éléments sont agencés pour former des mâchoires de saisie de bras (60).

5. Bracelet selon la revendication 4, où les surfaces (62) des mâchoires sont formées et configurées pour encourager la prise entre les mâchoires et un bras de l'utilisateur inséré entre celles-ci.

6. Bracelet selon la revendication 5, où les mâchoires présentent des surfaces ondulées ou dentelées (62).

7. Bracelet selon l'une quelconque des revendications précédentes, où le moyen de préhension comprend un ou plusieurs lobes (160, 260) qui font saillie dans l'ouverture de réception de bras.

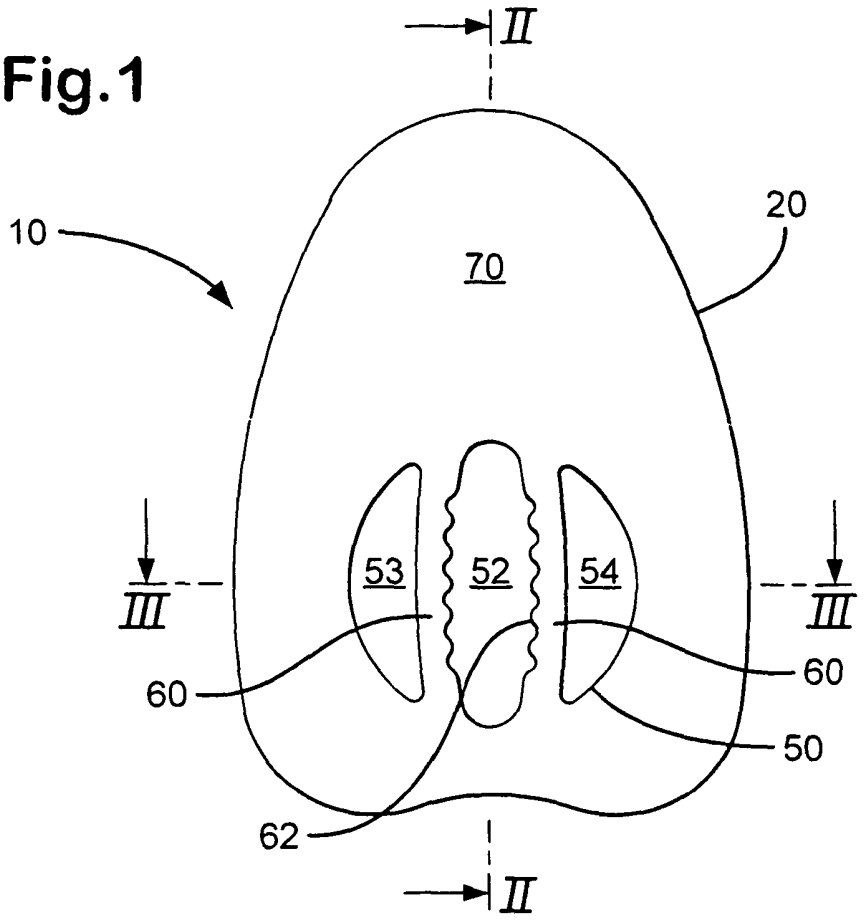
8. Bracelet selon l'une quelconque des revendications précédentes, où le ou chaque lobe (160, 260) présente une ouverture (152) à travers celui-ci.

9. Bracelet selon l'une quelconque des revendications précédentes, où il y a trois ou quatre lobes.

10. Bracelet selon l'une quelconque des revendications précédentes, où le bracelet comprend une pluralité de portions flottantes sensiblement identiques (20, 30, 40), chacune incluant le moyen de saisie intégralement formé avec celle-ci, et où ces portions flottantes sont empilées pour former un laminé.

11. Bracelet selon la revendication 10, où chaque portion flottante formant le laminé est liée à la portion flottante à laquelle elle est juxtaposée.

Fig.1



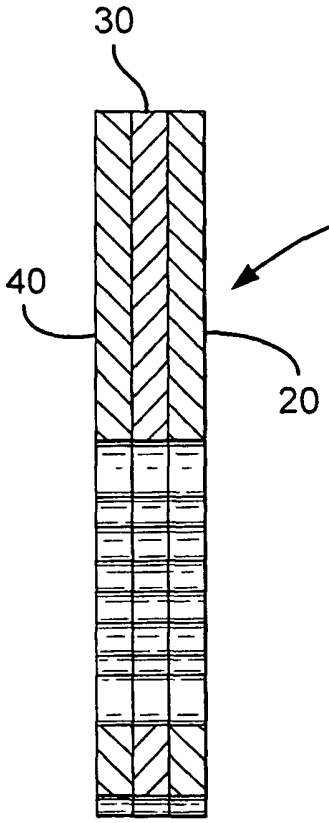
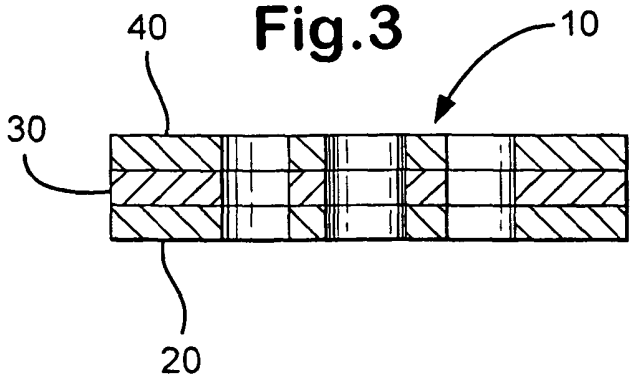


Fig.2

Fig.3



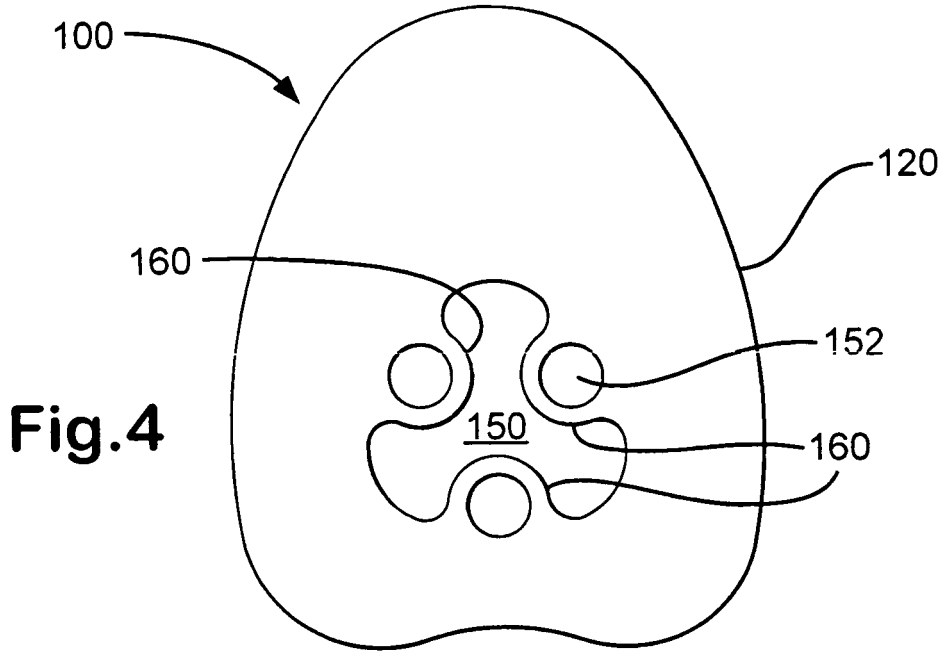


Fig.4

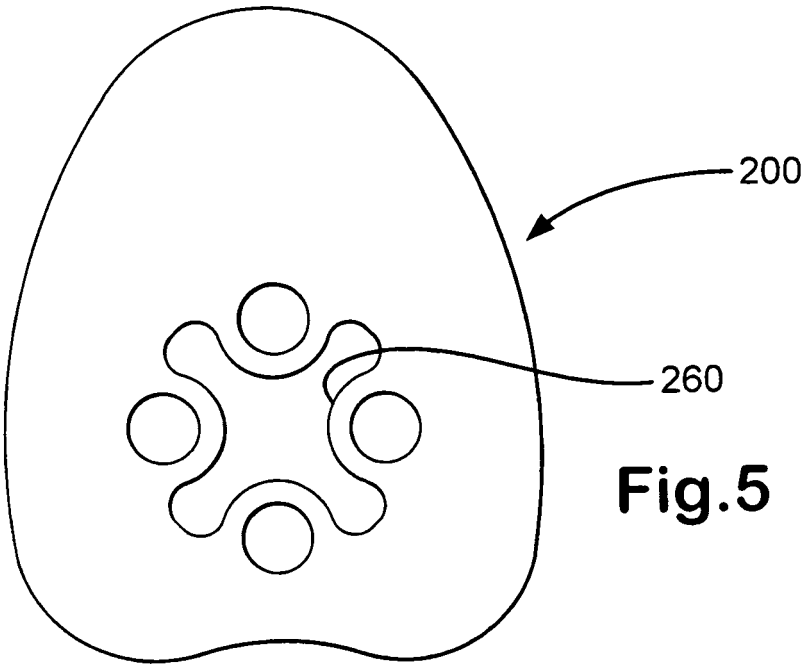


Fig.5

REFERENCES CITED IN THE DESCRIPTION

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