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(54) **PROPULSIVE MONO-FIN FOR SWIMMING**

(57) The propulsive mono-fin of the invention for swimming consists of two independent parts, one of them a polyethylene plate and the other a cover. In this way, the plate has a "Y"-shaped configuration, delimited by two end forks and a central stem with rounded edges, while the neoprene casing presents an opening for the insertion of the central stem of the plate inside it. The cover is furnished with a pair of holes for inserting and fastening the swimmer's feet and the plate includes a perimeter covering of a higher-strength material than that of the plate itself.

Also, the cover includes means of closure via which the plate is embraced so that the end forks of the plate protrude sideways from the cover.

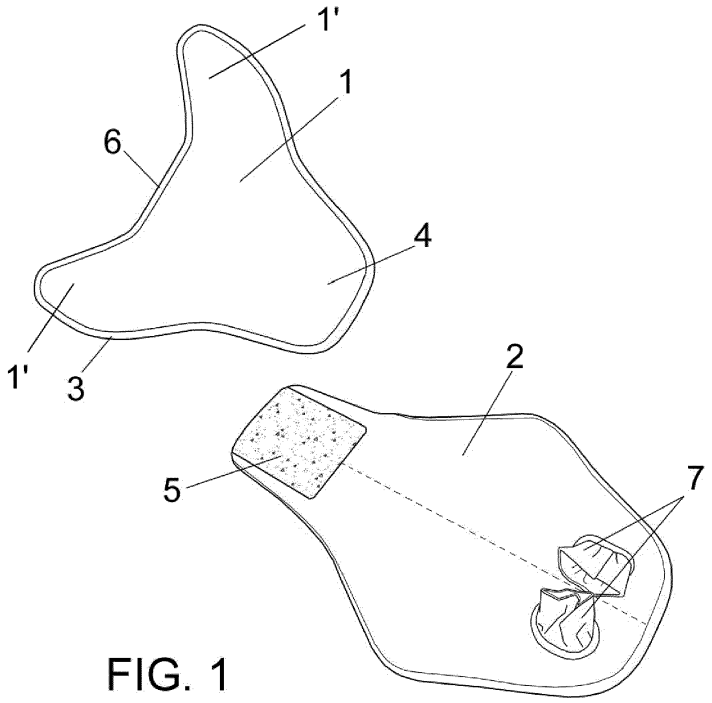

FIG. 1

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Description

OBJECT OF THE INVENTION

[0001] This invention refers to a propulsive mono-fin for swimming, specifically intended for application on both feet of the swimmer, in order to facilitate the practice of water sports, based on a very light, highly stable and very durable structure during use.

BACKGROUND OF THE INVENTION

[0002] Fins, like devices as equipment for swimmers are known, enabling propulsion of swimmers over or under the surface of the water. In fact, there are various fin configurations and designs widely known for the practice of swimming and diving.

[0003] One of the known versions is the mono-fin that enables both feet to be inserted and requires rhythmic undulation of the body of the user for propulsion during use.

[0004] However, the mono-fins currently known present serious difficulties in providing a solid assembly that is easy to attach to the swimmer's feet. Additionally, the aquatic practice using the known mono-fins does not offer the firmness and consistency desired from the assembly.

[0005] Lastly, some mono-fins revealed until now are very thick in order to protect the edges from wear during the practice of the sport, being inherently high weight products that hamper their handling and transport.

[0006] There are also mono-fins known of low thickness that present a zone for fastening and coupling to the user's feet that is low in solidity, leaving the area of the heel open to the air and making it possible for the feet to come out very easily and involuntarily during the practice of aquatic sports such as swimming. Therefore, this configuration is very awkward during use because any movement during kicking may mean the feet can come out from the mono-fin.

[0007] That is why the applicant of this utility model saw the need to offer a product that solves the previously described problems and contributes to the state of the technique by providing a light, highly stable and very durable mono-fin.

DESCRIPTION OF THE INVENTION

[0008] The propulsive mono-fin for swimming proposed solves in a fully satisfactory manner the problems described above based on a simple but effective solution, enabling the performance of aquatic exercises such as swimming in various styles and enabling relatively rapid advance of the swimmer.

[0009] More specifically, this mono-fin is formed by the combination of two parts, coupled together, one determining a "Y"-shaped configuration plate with rounded forks and a cover that defines a bag for accommodating the plate and forming an assembly inside which the swimmer's feet are situated, after the feet have been inserted through the holes arranged in the cover.

[0010] In addition, the cover has the means of closure for fastening and extracting the plate, these means consisting of zips or buttons, as well as by a tab that is closed over the main body of the casing with a means of attachment such as Velcro® strips.

[0011] The plate is preferably made of polyethylene around which there is a perimeter reinforcement of a higher-strength material making up the plate, for example, based on high-strength rubber, and may optionally include metal traces to offer even higher hardness and strength in order to prevent wear on the edges.

[0012] The presence of higher strength perimeter reinforcement of the plate prevents accidents such as cuts or scratches during the practice of the sport by avoiding the formation of sharp edges.

[0013] Additionally, the configuration described above enables higher durability of the product, by preventing the wear of the plate edges through impacts with surrounding elements, either walls or the floor of the place where the activity is taking place such as a pool, the sea, etc.

[0014] The cover of the mono-fin presents the feature of having two holes with two elastic collars optionally added for the insertion of the swimmer's feet, which are located inside the bag formed by the cover itself.

[0015] The cover is preferably made of neoprene to offer high grip on the swimmer's feet.

[0016] Neoprene generates an excellent anti-slip contact surface as this material offers resistance to movement when the swimmer's feet come into contact with it.

[0017] At one of its ends or edges, the cover has a bellows configuration, specifically at the zone where the swimmer's feet are inserted, in order to adapt to the volume of the plate and the user's feet when the user inserts them into the heart of the device.

[0018] The plate forms a surface that propels the movement of the swimmer as the swimmer can exercise a force on it. Thus, the plate preferably has a thickness of between 2 and 5 mm, offering a high-strength low-weight surface.

[0019] In this way, the mono-fin of this invention offers a cover-plate combination that is easy to put on and attach by the swimmer and that generates high stability during use in the practice of aquatic sports and for the swimmer.

DESCRIPTION OF THE FIGURES

[0020] To complement the description that is being made and in order to help a better understanding of the characteristics of the invention, according to a preferred example of practical embodiment thereof, a set of drawings is attached as an integral part of said description where the following has been represented for the purposes of illustration and without limiting the invention:

Figure 1 shows an upper perspective view of a mono-fin in accordance with the object of this invention.

Figure 2 shows a view of the coupling between the two pieces represented in the previous figure.

Figure 3 shows the elements represented in the previous figure, showing the fixing of the plate to the cover via a tab on the cover that passes through the concavity of the plate and is attached on the surface of the cover via adhesive Velcro® strips.

[0021] Figure 4 shows a general view of the face of the cover where the elastic collars for inserting the user's feet are established.

PREFERRED EMBODIMENT OF THE INVENTION

[0022] By viewing the figures, it can be seen that the propulsive mono-fin of the invention consists of the coupling together of two main parts, the first formed by a plate (1) in a "Y"-shaped configuration, which is delimited by two end forks (1') and a central stem (4) with strongly rounded edges and with a perimeter reinforcement (3), while the second part is formed by a cover (2) that presents an opening for the insertion of the central stem (4) of the plate (1) into its interior.

[0023] Thus the plate (1) is inserted inside the cover (2), while the cover (2) is furnished with a tab (5) that embraces the plate through its concave edge (6), leaving the tab fixed on the cover (2) via adhesive Velcro strips, although the means of fastening could also be made interchangeably using buttons, zips, poppers or any other conventional means, thus leaving the plate (1) duly stabilised with respect to the cover (2) and in such a way that the end forks (1') of the plate (1) protrude sideways from the cover (2).

[0024] In this way, the plate is covered, preferably in a partial way, by the cover, thereby optimising the consumption of raw materials, minimising costs and enabling easy extraction of the plate for washing and drying of the cover and the maintenance of the plate.

[0025] In addition, the cover (2) has a pair of holes that may optionally have associated elastic collars (7) for the insertion of the swimmer's feet, which will be accommodated inside the bag defined by the cover (2). To achieve this, the cover (2) has a side bellows (8) that facilitates the coupling with the plate (1) inside the cover (2) itself, so enabling the internal volume of this casing to adapt to the additional volume occupied by the user's feet.

[0026] As said before, the plate (1) is preferably made of polyethylene, offering a high-strength low-weight surface, with a thickness of between 2 and 5 mm, with a perimeter covering (3) made of high-density rubber that may include metal traces to offer higher strength.

[0027] The cover (2) is preferably made of neoprene, offering an anti-slip contact surface as this material offers resistance to movement when the swimmer's feet come into contact with it.

Claims

1. Propulsive mono-fin for swimming, **characterised in that** it is constituted by two independent parts, the first part formed by a "Y"-shaped plate (1) made of polyethylene, that defines two end forks (1') and one central stem (4) with rounded edges, while the second part is formed by a cover (2) made of neoprene that presents an opening for the insertion of the central stem (4) of the plate (1) inside it, and this cover (2) having a means of closure via which the plate (1) is embraced so that the end forks (1') of the plate (1) protrude sideways from the cover (2), and the cover (2) is furnished with a pair of holes for the insertion and gripping of the swimmer's feet and the plate (1) has a perimeter coating (3) made of a higher strength material into which the plate (1) is integrated.

2. Propulsive mono-fin for swimming of claim 1 wherein the plate (1) is partially covered by the cover.

3. Propulsive mono-fin for swimming of claim 1 wherein the means of closure of the cover (2) that embraces the plate (1) is a tab that is fixed on the body of the cover via adhesive Velcro® strips.

4. Propulsive mono-fin for swimming of claim 1 wherein the means of closure of the cover (2) that embraces the plate (1) are a zip.

5. Propulsive mono-fin for swimming of claim 1 wherein the means of closure of the cover (2) that embraces the plate (1) are buttons.

6. Propulsive mono-fin for swimming of claim 1 wherein the means of closure of the cover (2) that embraces the plate (1) are poppers.

7. Propulsive mono-fin for swimming of claim 1 wherein the cover includes a side bellows (8).

8. Propulsive mono-fin for swimming of claim 1 wherein the cover (2) includes a pair of elastic collars (7) associated with each hole to facilitate the insertion of the swimmer's feet.

9. Propulsive mono-fin for swimming of claim 1 wherein the thickness of the plate (1) is between 2 and 5 mm.

10. Propulsive mono-fin for swimming of claim 1 wherein the perimeter covering (3) of the plate (1) is made of high-density rubber.

11. Propulsive mono-fin for swimming of claims 1 and 10 wherein the perimeter covering (3) of the plate

(1) includes metallic traces to offer higher strength.

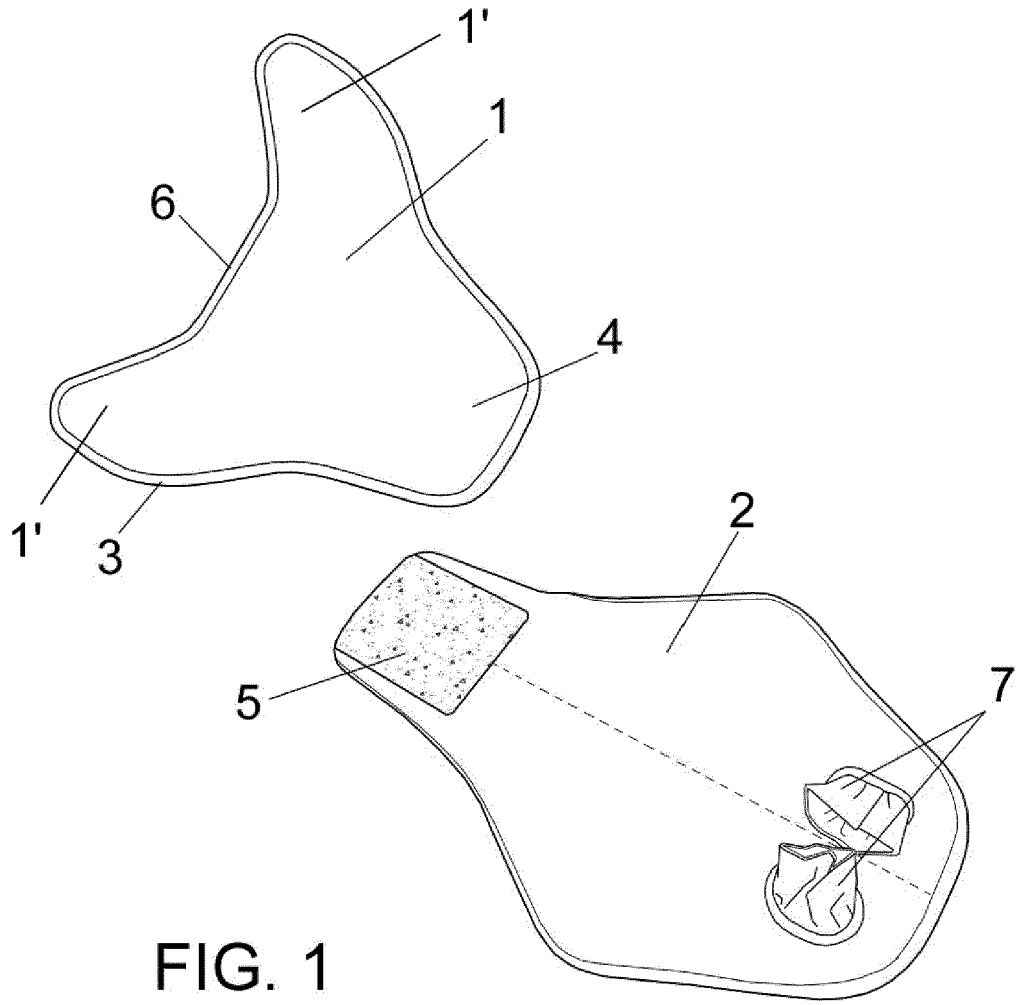

FIG. 1

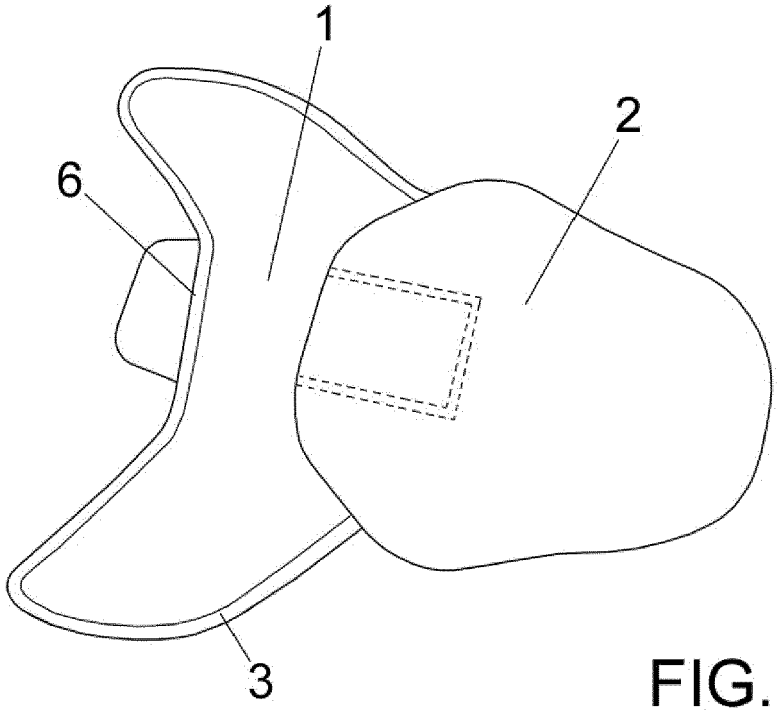

FIG. 2

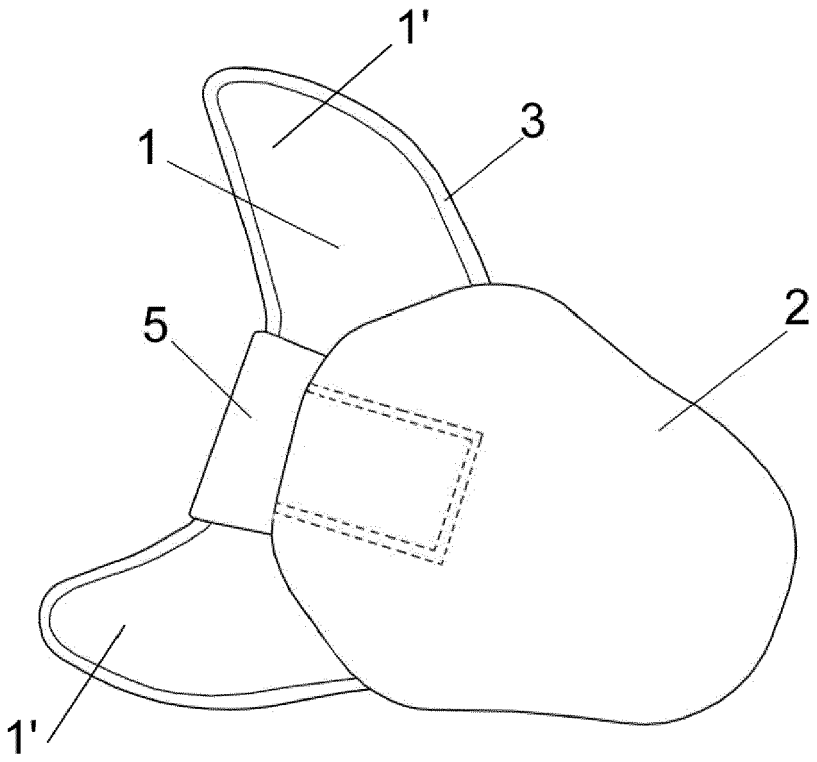

FIG. 3

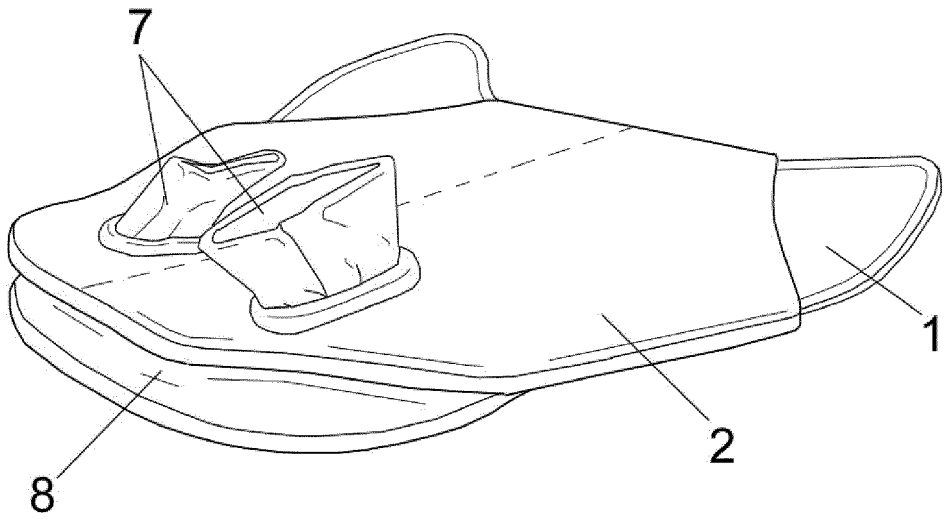

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 18 21 2475

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2017/144027 A1 (WISEMAN JESSICA [US]) 25 May 2017 (2017-05-25) * paragraph [0036] - paragraph [0104]; figures 1-16 *	1-11	INV. A63B31/11
A	DE 10 2015 014947 A1 (MAGICTAIL GMBH [DE]) 24 May 2017 (2017-05-24) * paragraph [0027] - paragraph [0047]; figures 1-3 *	1-11	
A	US 2015/335955 A1 (SHIUE CHIH-CHENG [TW]) 26 November 2015 (2015-11-26) * paragraph [0042]; figures 1-7 *	1-11	
A	WO 2017/084740 A1 (MAGICTAIL GMBH [DE]) 26 May 2017 (2017-05-26) * page 10, line 31 - page 19, line 31; figures 1-8 *	1-11	
			TECHNICAL FIELDS SEARCHED (IPC)
			A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	12 March 2019	Jekabsons, Armands

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 18 21 2475

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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12-03-2019

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82