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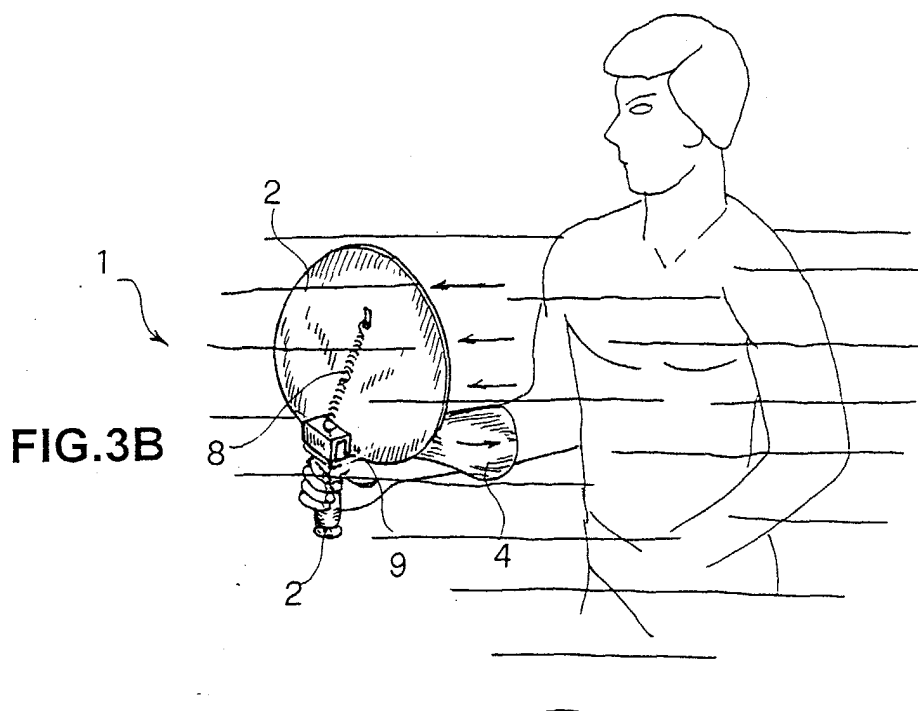
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(54) **Paddle device for fitness training and swimming**

(57) Paddle device allowing to perform a fitness training, offering a constant resistance to water when shifted water-immersed along a predetermined sense, concomitantly allowing its use as propulsion member when the device is used by a swimming user, and comprising at least one blade member and one handle, the blade member having at least one movable wall that, in

cooperation with said handle, assumes a maximum resistance configuration when the blade member is shifted along a predetermined sense and a minimum resistance configuration rotating about a fulcrum when the blade member is shifted along the opposite sense, the blade member having then a maximum and a minimum resistance configuration, respectively.



Description

[0001] The present invention refers to a paddle device for fitness training and swimming comprising at least one blade member and one handle.

[0002] All kinds of devices for fitness training are known, which may be used while immersed in water, e. g. in a pool, to benefit from the immersion in a cool element, the buoyancy-induced weight-lightness and the use of the resistance offered by water to the shifting of immersed items.

[0003] These devices have a handle to be grabbed and shifted while water-immersed by muscular strength, the latter being proportional to the resistive surface of the device, which is basically determined by the presence of the blade member.

[0004] E.g., U.S. Pat. No. 4,819,951 (Solloway) discloses a device meant to replace a dumbbell and having a frame with openings, at which elastic material movable fins are provided that, owing to water resistance, flex letting water through said openings. Therefore, in this device water resistance decreases with the increasing of the device shifting speed. Hence, this device performs its function over short shiftings and it is not susceptible of being employed as a propeller for swimming.

[0005] U.S. Pat. No. 4,627,613 (Solloway) instead discloses a different device, in which an annular member is worn-on about the waist and is provided with openings equipped with openable fins positioned so as to stay closed when the annular member, located on a horizontal plane, is shifted upwards, i.e. when the user bends the knees. Therefore, also this device allows a limited exercise and cannot be used as a swimming aid.

[0006] In U.S. Pat. No. 6,398,603 (Brown) a propulsion device is designed to be secured to forearms and hands and it has a flexible blade member working like a fin and flexing contrarily to the in-water displacement. Therefore, it is particularly cumbersome when used in an in-water stationary exercise.

[0007] Other devices for in-water exercise or propulsion are described in U.S. Pat. No. 4,316,300 (Lewis) and in Japanese Pat. Appln. Nos. JP10066739A2, JP8257165A2 and JP3176082A2.

[0008] Apparently, none of the described devices allows a stationary and swimming fitness training, and moreover none of them provides a constant resistance to shifting regardless of the path length.

[0009] The technical problem underlying the present invention is to provide a paddle device allowing to overcome the drawbacks mentioned with reference to the known art.

[0010] Such a problem is solved by a device as abovespecified wherein said blade member has at least one movable wall that, in cooperation with said handle, assumes a maximum resistance configuration when the blade member is shifted along a predetermined sense and a minimum resistance configuration, rotating about a fulcrum, when the blade member is shifted along the

opposite sense, the blade member having then a maximum and a minimum resistance configuration, respectively.

[0011] The main advantage of the device according to the invention lies in allowing to perform a fitness training, offering a constant resistance to water when shifted water-immersed along a predetermined sense, concomitantly allowing its use as propulsion member when the device is used by a swimming user.

[0012] Hereinafter, several embodiments of the paddle device according to the invention will be described, given by way of a non-limiting example and with reference to the annexed drawings, wherein:

- 15 * Figures 1A and 1B are perspective views taken from different angles of a first embodiment of paddle device according to the invention;
- * Figure 2 is a side elevational view of the device of the preceding figures;
- 20 * Figures 3A and 3B illustrate the use of the device of the preceding figures;
- 25 * Figure 4 illustrates the use of the device of the preceding figures in swimming;
- * Figures 5A and 5B are perspective views taken from different angles of a second embodiment of paddle device according to the invention;
- 30 * Figure 6 is a side elevational view of the device of the preceding figures;
- 35 * Figures 7A and 7B illustrate the use of the device of the preceding figures in fitness activities;
- * Figures 8A and 8B are a perspective view and a side view of a third embodiment of paddle device according to the invention;
- 40 * Figures 9A and 9B illustrate the use of the device of the preceding figures in fitness activities;
- 45 * Figures 10A, 10B and 10C are a perspective view, a side view and a plan view of a fourth embodiment of paddle device according to the invention;
- * Figures 11A and 11B illustrate the use of the device of the preceding figures in a fitness activity;
- 50 * Figures 12A and 12B are a perspective view and a side view of a fifth embodiment of paddle device according to the invention;
- 55 * Figure 12C shows an enlarged detail of the device of the preceding figures;

- * Figures 13A and 13B illustrate the use of the device of the preceding figures in a fitness activity;
- * Figure 14 is a perspective view of a sixth embodiment of paddle device according to the invention;
- * Figures 15A and 15B are a side view and a plan view of the device of the preceding figure; and
- * Figures 16A and 16B illustrate the use of the device in the preceding figures in a fitness activity.

[0013] Hereinafter, identical, similar or analogous components will bear the same number reference indicated in the figures.

[0014] A first embodiment of a paddle device is indicated by 1 and it comprises a blade member 2 basically made of a plane and nearly circle-shaped movable wall 3, hinged to a sleeve member 4 apt to be worn-on at the wrist, to which there is secured a handle 5 destined to be gripped by a user. The movable wall 3 is rotatably connected to the sleeve member 4 by a hinge 7 connected to the movable wall 3 or secured otherwise. Moreover, the sleeve member 4 extends beyond said hinge 7, to which there basically corresponds the handle 5, for a short section to which there is secured an elastic member 8 extended between the sleeve member 4 and a basically central point of the movable wall 3. Moreover, on said short section there is formed a stopper 9 preventing the movable wall from rotating forming a $>90^\circ$ degree between the movable wall 3 and the sleeve member 4 (Figure 2). In the present embodiment, the elastic member 8 is a mere helical spring working in extension to return the movable wall 3 into alignment with the handle 5.

[0015] By virtue of this construction the movable wall 3 can assume a maximum resistance configuration, with the same perpendicular to the sleeve member 4 and parallel to the handle 5, held in this position by the stopper 9 and the elastic member 8. Moreover, the movable wall 3 can assume a minimum resistance configuration, in which the same is pressed onto the sleeve member 4 with the elastic member 8 working in extension opposing to the flexing of the movable wall 3.

[0016] In use, the device 1 may be held with the movable wall 3 facing topwise or bottomwise. In both instances, a sense is determined along which the device 1 can be shifted determining the abovedescribed minimum resistance configuration due to the resistance offered by the water in which the former is immersed. In the opposite sense, the movable wall 3 assumes instead the configuration of maximum resistance to water, in which the maximum muscular effort is required for the shifting of the device 1. As it is apparent from the figures, the device may be used for muscle compression training, for extending or as a swimming propulsion aid or device.

[0017] The second embodiment is similar to the pre-

ceding one and it provides a device 1 having a blade member 2 that has a movable wall 3 integral to its handle 5, both hinged at a hinge 7 to a sleeve member 4 basically equal to the hereto-described one.

[0018] The handle 5 has an orientation different with respect to that described with reference to the first embodiment. In this case the former is susceptible of being grabbed by a horizontal hand.

[0019] In this case, the shifting of the blade member 3 between the maximum resistance configuration and the minimum resistance configuration is entrusted to the friction encountered by the blade member 2 while shifting in water. In shifting along the one sense, the latter can be held in the maximum resistance position by grabbing the handle 5, whereas in the other sense it naturally assumes the minimum resistance configuration when the handle is accompanied to a resting position.

[0020] In this case as well, the blade member may be facing bottomwise or even topwise, thereby allowing to work both in muscle compression and extension, and also allowing swimming propulsion.

[0021] The third embodiment is a simplified version of the abovedescribed devices.

[0022] In fact, though previously the fulcrum about which the movable wall 3 rotates between the configurations of maximum and minimum resistance to in-water shifting was said hinge 7, here the fulcrum is the handle 5 itself that can easily rotate even when firmly held by a user.

[0023] In this case, the blade member 2 coincides with a movable wall 3 and assumes a disc-like shape with a tilted edge 10, the whole being basically dish-shaped. The edge structure enables the blade member 2 to offer the maximum resistance when, as it is apparent from the figures, the device is drawn toward the user. The tilted edge 10 promotes the rotation of the blade member 2 about the axis determined by the handle 5 when the device is shifted in the opposite sense.

[0024] The fourth embodiment is basically similar to the preceding one, however here the blade member 2 assumes the shape of a basically rectangular plate having a curved and tilted edge section 10.

[0025] The handle 5 is no more in a central position, it being off-centre, near to the curved and tilted edge 10.

[0026] Hence, the handle 5 may be secured to a user's wrist by a string 11 bound to the handle 5 and fastenable to the wrist by virtue of a collar 12. Of course, this contrivance may also apply to all other versions described here.

[0027] The use of this embodiment is analogous to the preceding one, as it may be appreciated from the figures.

[0028] The fifth embodiment provides a blade member 2 constructed in form of frame 13, to which a handle 5 is secured by means of suitable brackets 14. The frame defines a plurality of openings 15, each covered by a respective movable wall 3 hinged at one side of the generally rectangular opening 15. In this case as well,

when the device 1 is shifted according to a sense corresponding to a moving away from the user, all the movable walls 3 assume a minimum resistance configuration letting all openings 15 uncovered. Instead, nearing the device 1 to the user, all the movable walls 3 rotate about the respective fulcrum closing the openings 15 and having the entire blade member 2 assume said maximum resistance configuration.

[0029] The sixth embodiment provides a handle 5 connected to a bracket member 16, to which there are hinged two movable walls 3 in a double-wing or book configuration. Each movable wall 3 is capable of rotating about the respective hinge 7 between a maximum resistance configuration and a minimum resistance configuration, the latter corresponding to a position of said movable walls 3 adhered in a V-shape against the handle 5. To the latter there are secured ropes 17, respectively connected to the movable walls 3 to prevent them from overrotating beyond the maximum resistance configuration. It is understood that also this latter embodiment of device 1 may be used in a simple manner, as the preceding ones.

[0030] Advantageously, in all the abovedescribed cases, the device 1 may be made of a plastics material injection-moulded or thermoformed in the required shape. The device 1 may be produced so as to be floating, or optionally neutrally buoyant, thereby not adding the effort required keeping the device lifted to the shifting exercise.

[0031] With the abovedescribed devices there may be performed a plurality of fitness training, rehabilitation or swimming exercises with the utmost flexibility.

[0032] The use of two of them allows moving arms reciprocatingly and piston-like, yielding a great benefit in terms of muscle exercise.

[0033] These devices may be produced in a wide range and with different costs, so as to provide device designs for private users or design lines to concerns like sport centres, gyms, recreational activities. It will be appreciated how the device in its differing variants may be employed by users of any age, physique and sporting attitude.

[0034] The entire range allows having different individual features, thereby enabling users to select the device most congenial or suitable to the actual exercise to be performed.

[0035] To the abovedescribed devices for fitness training a person skilled in the art in order to meet contingent needs may effect several variants, all falling within the protective scope thereof as defined by the following claims.

Claims

1. A paddle device (1) for fitness training and swimming, comprising at least one blade member (2) and one handle (5), wherein the blade member (2) has

at least one movable wall (3) that, in cooperation with said handle (5), assumes a maximum resistance configuration when the blade member (2) is shifted along a predetermined sense and a minimum configuration sense rotating about a fulcrum when the blade member (2) is shifted along the opposite sense, the blade member (2) having then respective maximum and minimum resistance configurations.

2. The device (1) according to claim 1, wherein the movable wall (3) is rotatably constrained to a hinge (7) serving as a fulcrum.

3. The device (1) according to claim 2, wherein the blade member (2) is basically made of a plane movable wall (3), hinged to a sleeve member (4) apt to be worn-on at the wrist.

4. The device (1) according to claim 3, wherein the handle (5) is connected to said sleeve member (4).

5. The device (1) according to claim 3 or 4, wherein the movable wall (3) is secured to an elastic member (8) extended between the sleeve member (4) and a basically central point of the movable wall (3) to return the movable wall (3) into alignment with the handle (5).

6. The device (1) according to claim 3, wherein the blade member (2) has a movable wall (3) integral to its handle (5), both hinged at a hinge (7) to a sleeve member (4).

7. The device (1) according to claim 1, wherein the fulcrum is the handle (5) itself that can easily rotate even when firmly held by a user, the blade member (2) coinciding with a movable wall (3) having at least one tilted edge section, the edge structure enabling the blade member (2) to offer the maximum resistance when the device (1) is drawn toward the user, the tilted edge promoting the rotation of the blade member (2) about the axis determined by the handle (5) when the device (1) is shifted in the opposite sense.

8. The device (1) according to claim 7, wherein said movable wall (3) assumes a disc-like shape with a tilted edge (10), the whole being basically dish-shaped.

9. The device (1) according to claim 7, wherein the blade member (2) assumes the shape of a basically rectangular plate having a curved and tilted edge section (10).

10. The device (1) according to any one of the claims 7 to 9, wherein the handle (5) may be secured to a

user's wrist by a string (11) bound to the handle (5) and fastenable to the wrist by virtue of a collar (12).

11. The device (1) according to claim 1 or 2, wherein the blade member (2) is constructed in form of frame (13), to which a handle (5) is secured, the frame (13) defining a plurality of openings (15), each covered by a respective movable wall (3) hinged at one side of the opening (15). 5 10
12. The device (1) according to claim 1 or 2, wherein the handle (5) is connected to a bracket member (16) to which there are hinged two movable walls (3) in a double-wing configuration, each movable wall (3) being capable of rotating about a respective hinge (7) between a maximum resistance configuration and a minimum resistance configuration, the latter corresponding to a position of said movable walls (3) adhered against the handle (5). 15 20
13. The device (1) according to any one of the preceding claims, wherein it is made of a plastics material injection-moulded or thermoformed in the required shape. 25
14. The device (1) according to any of the preceding claims, which is produced so as to be floating or optionally neutrally buoyant. 30

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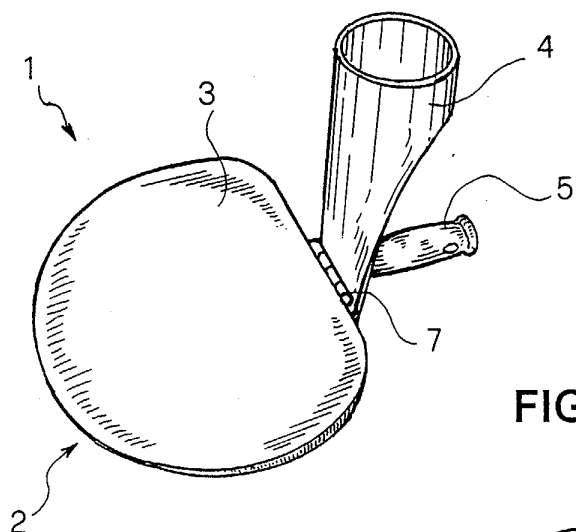


FIG. 1A

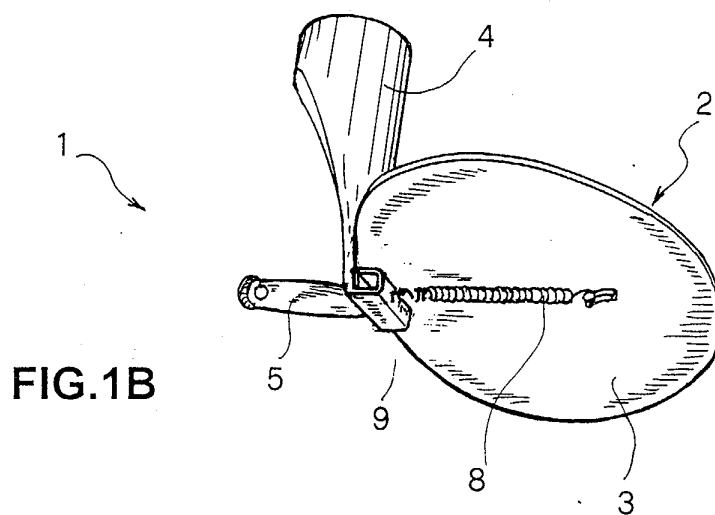


FIG. 1B

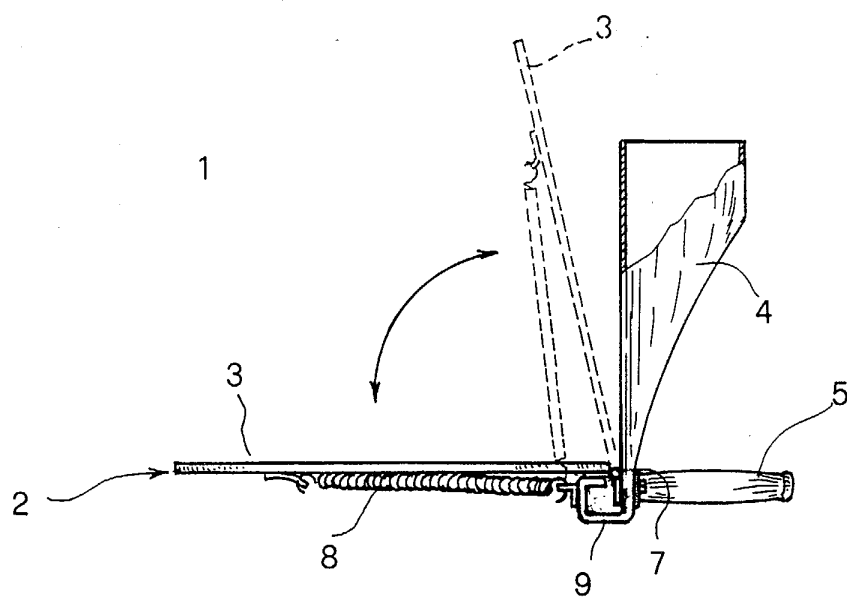
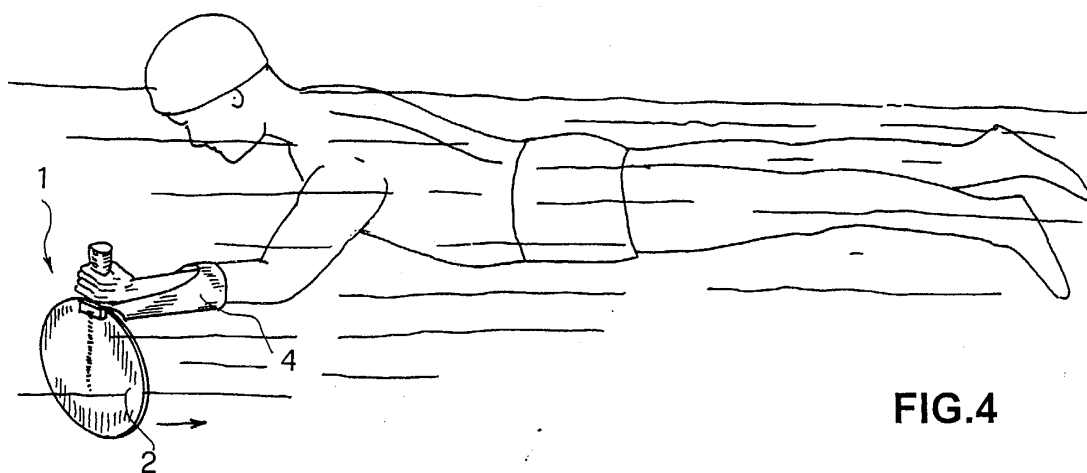
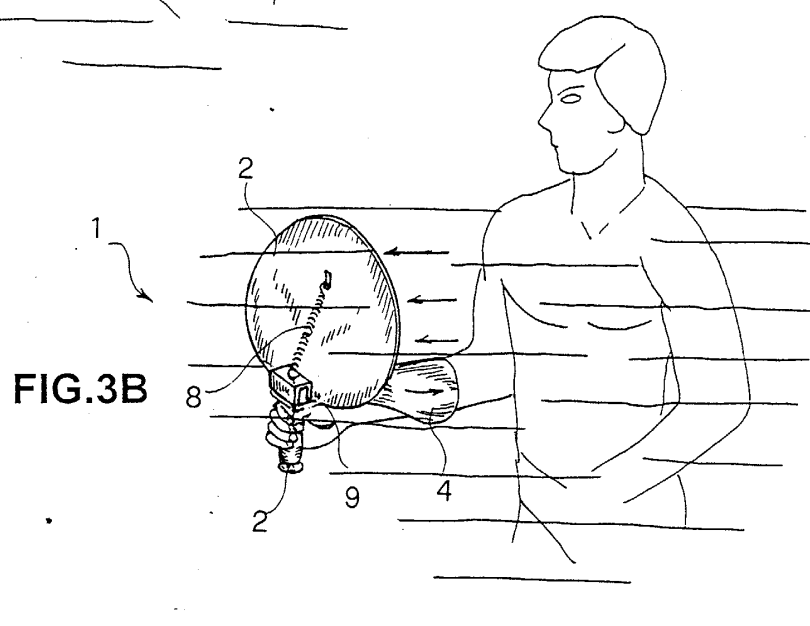
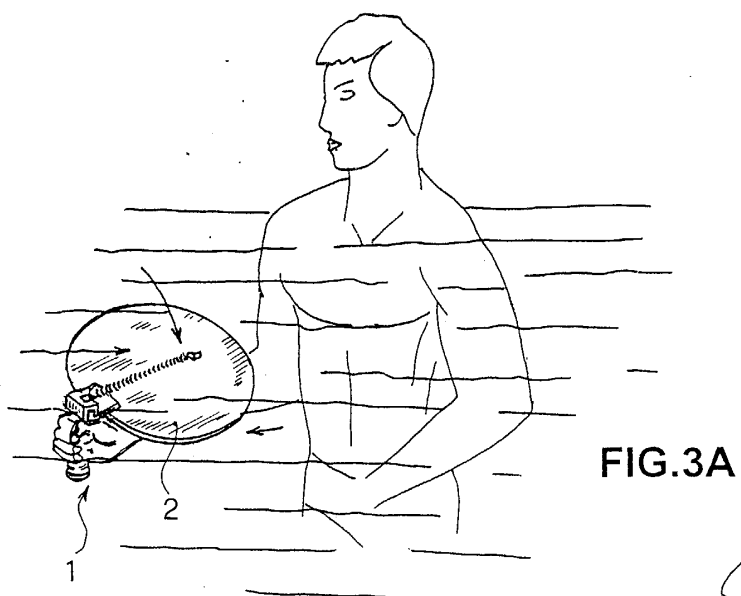


FIG. 2



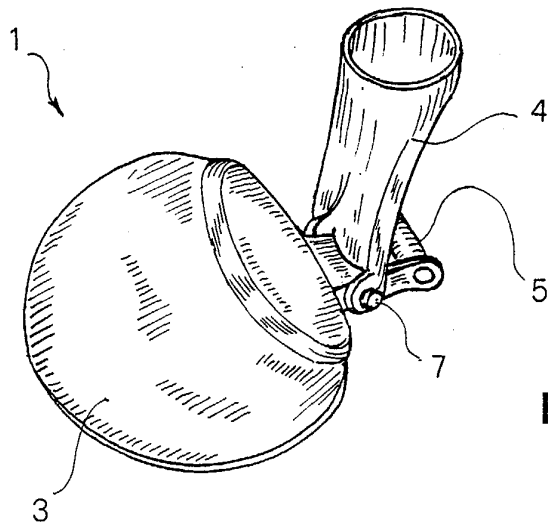


FIG. 5A

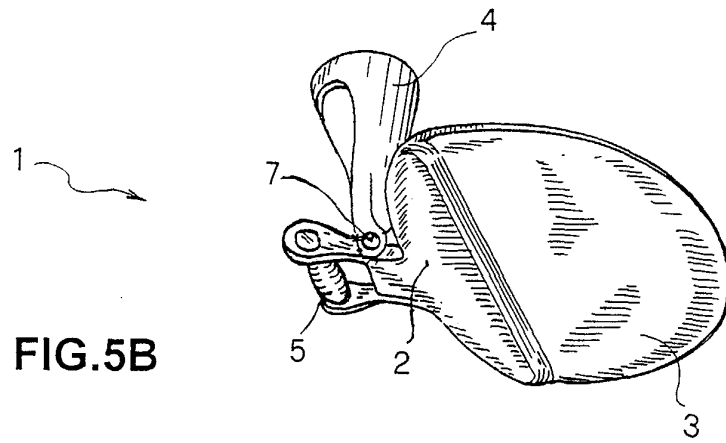


FIG. 5B

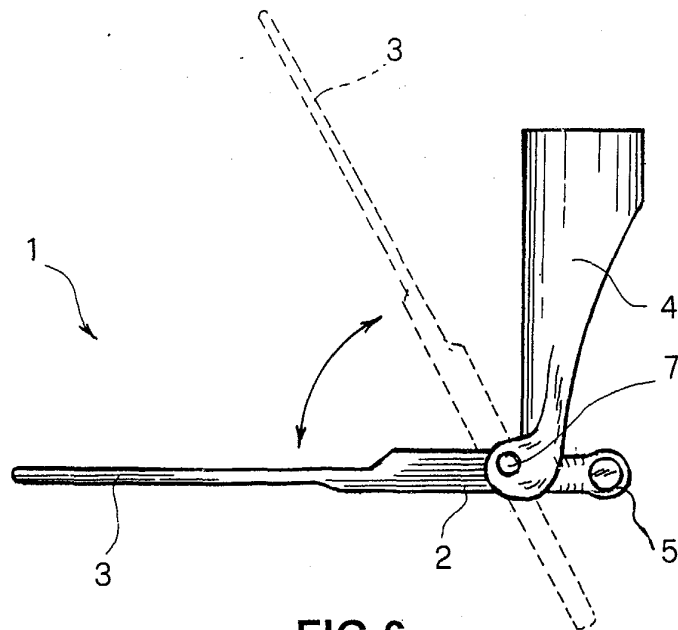


FIG. 6

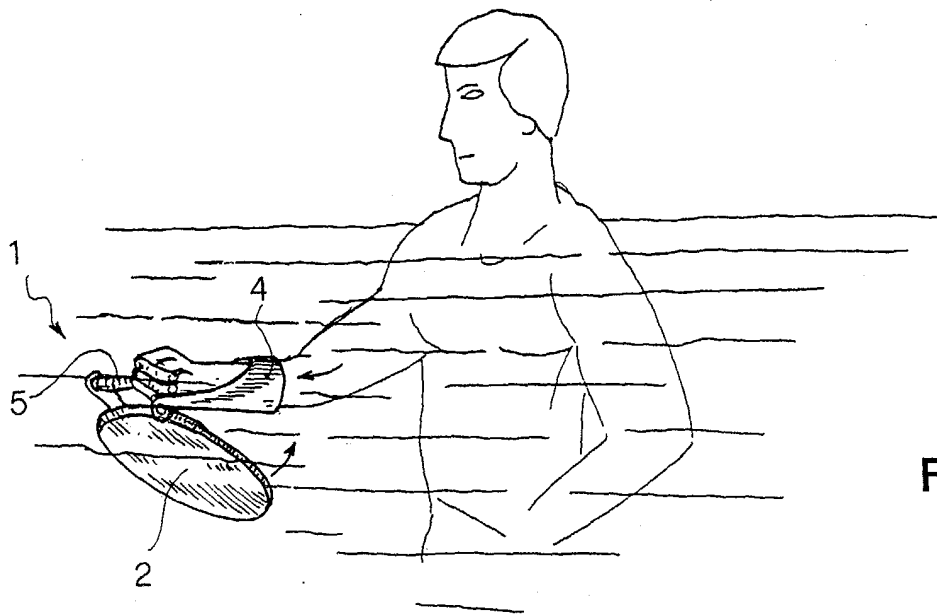


FIG. 7A

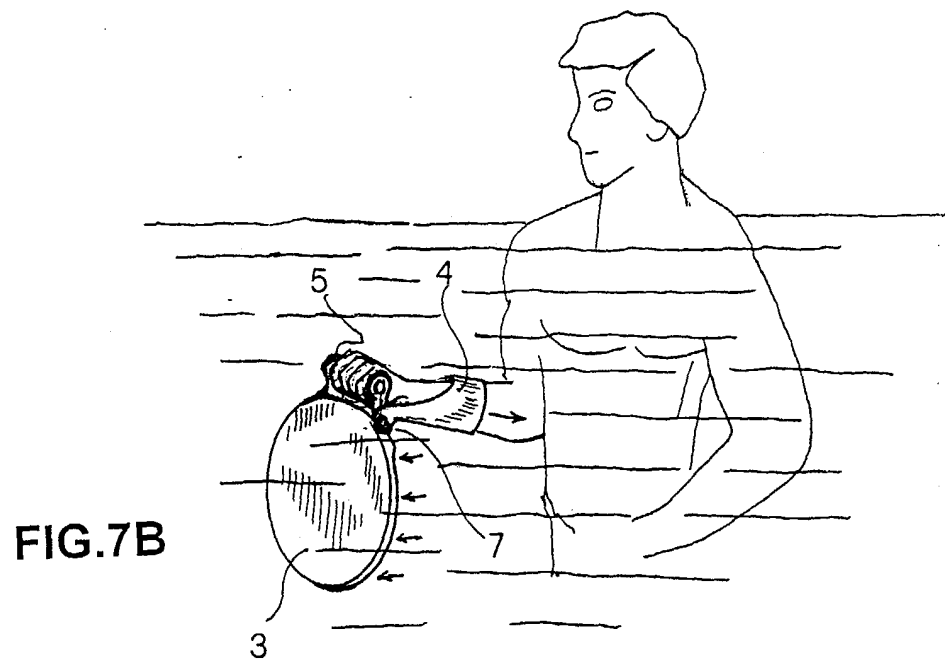


FIG. 7B

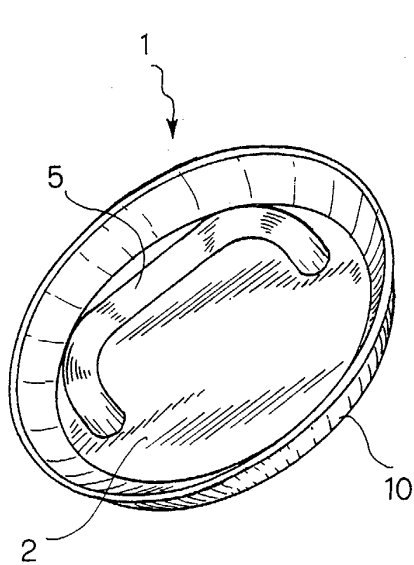


FIG. 8A

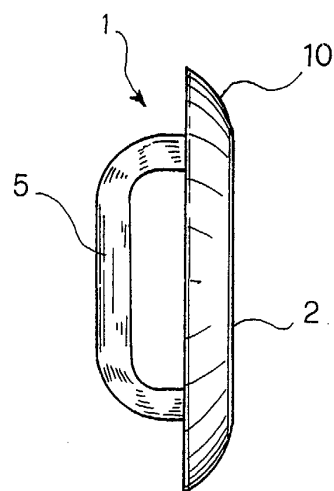


FIG. 8B

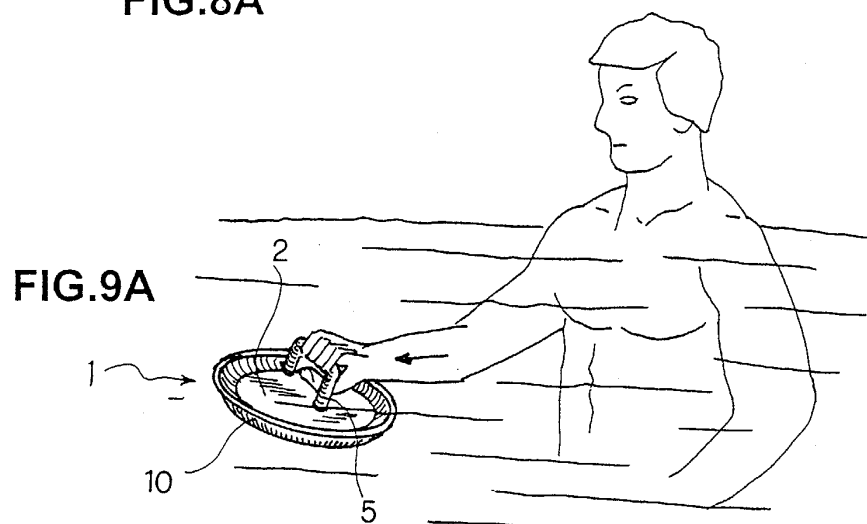


FIG. 9A

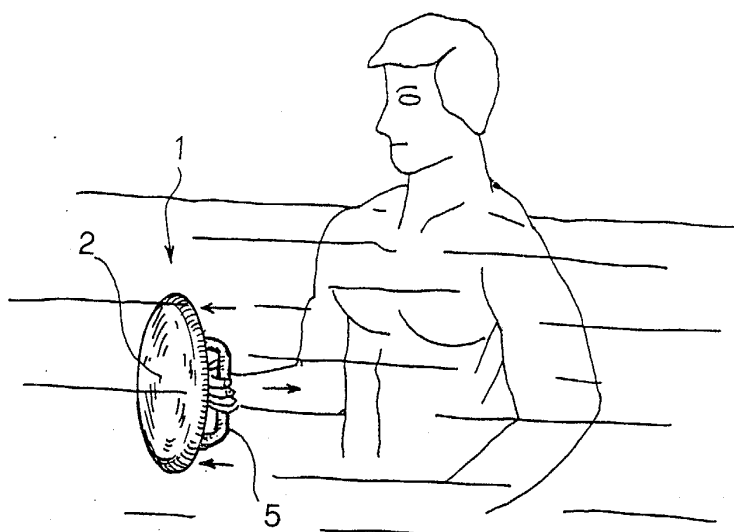


FIG. 9B

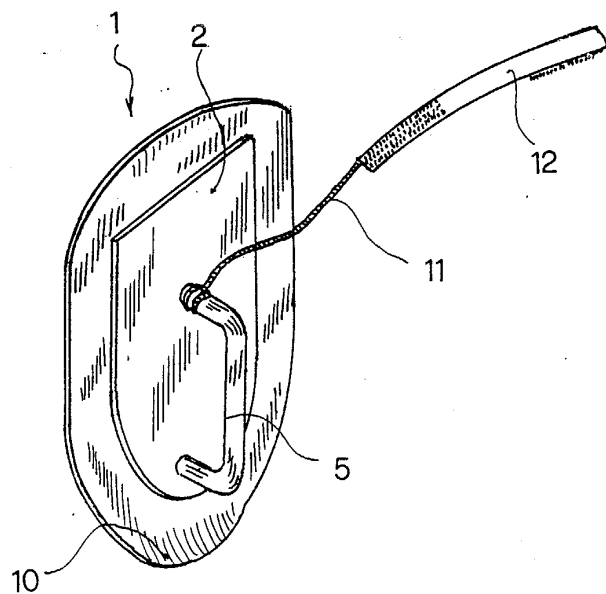


FIG. 10A

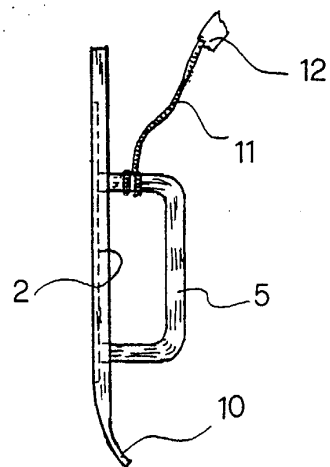


FIG. 10B

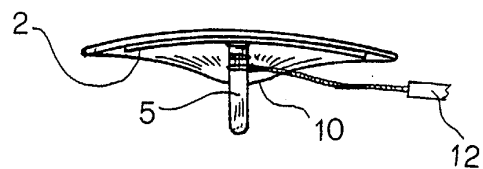
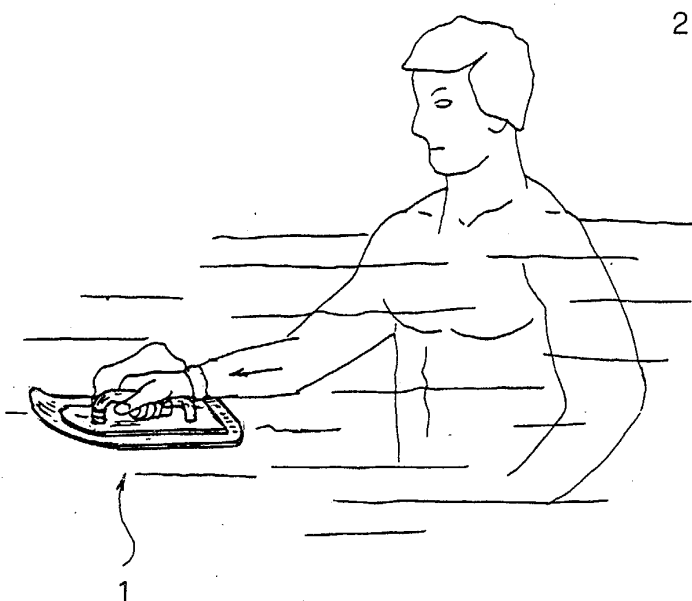
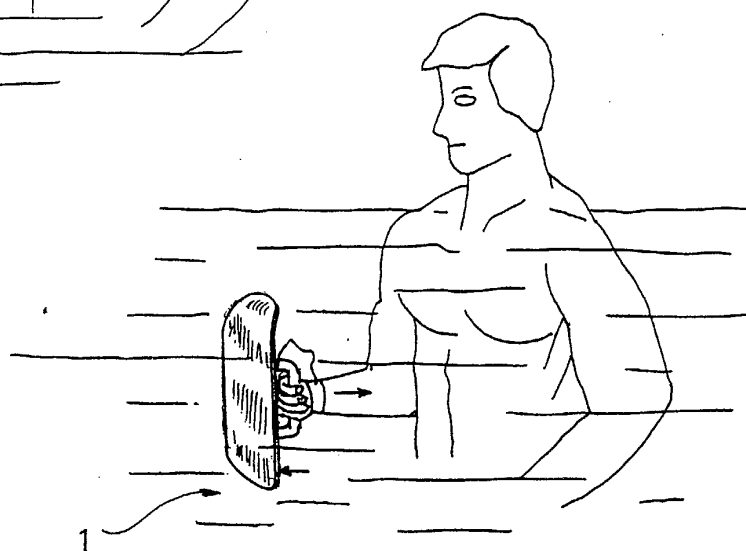
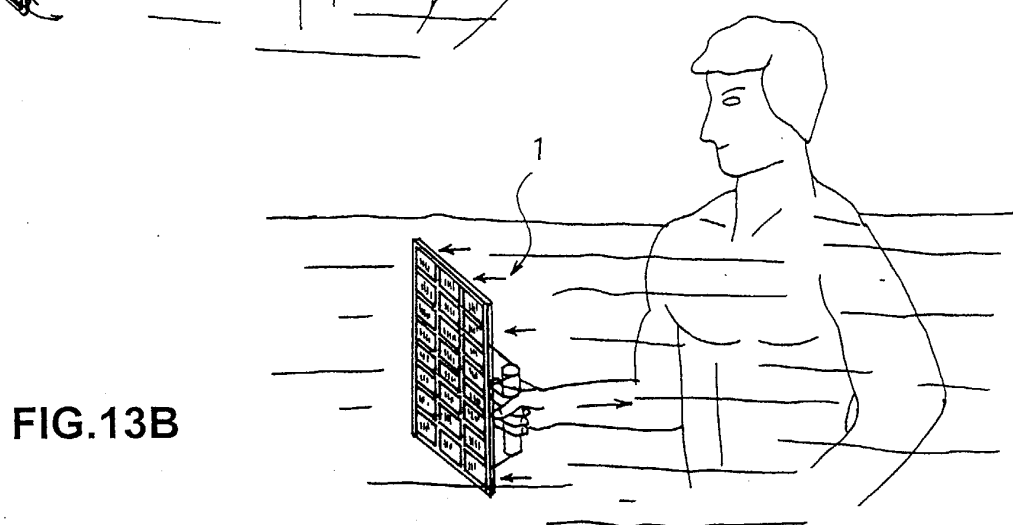
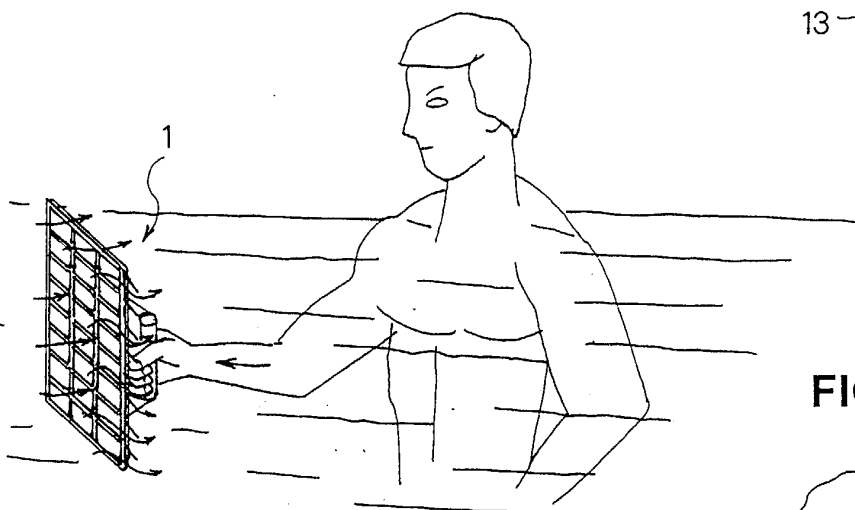
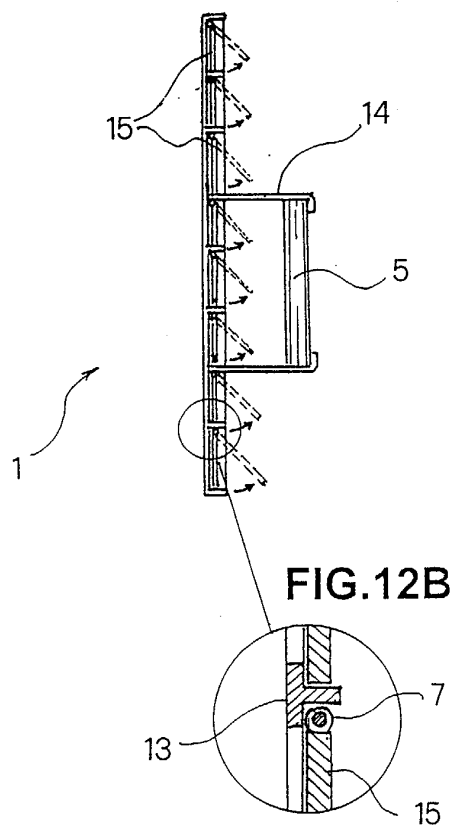
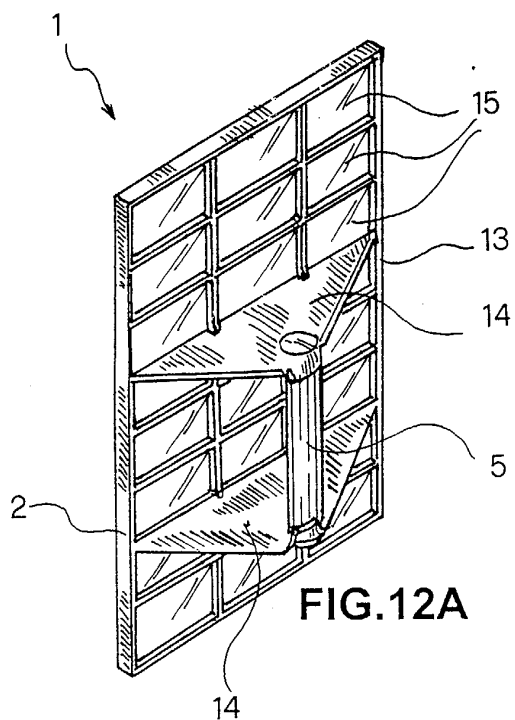


FIG. 10C

FIG. 11B





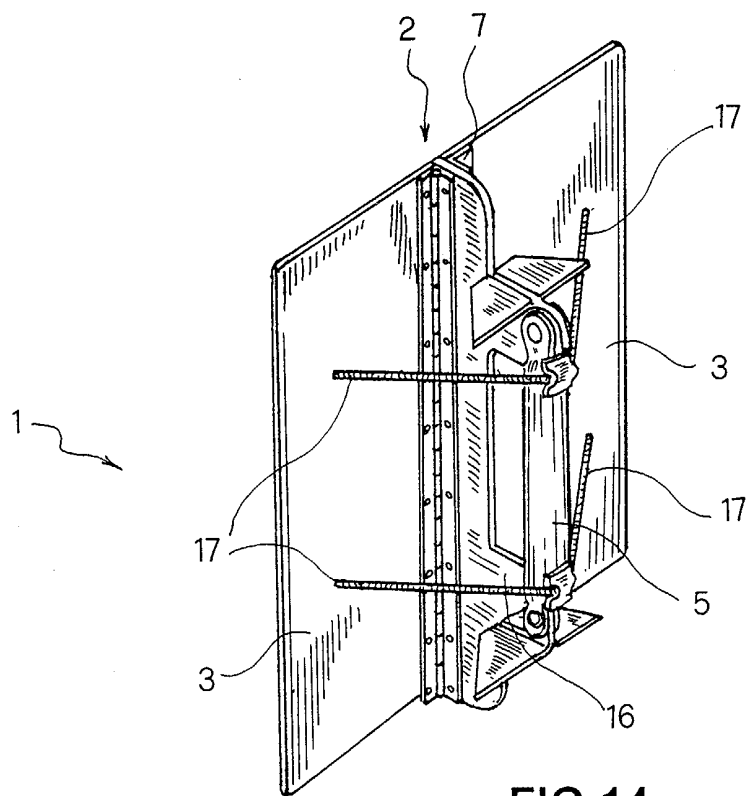


FIG. 14

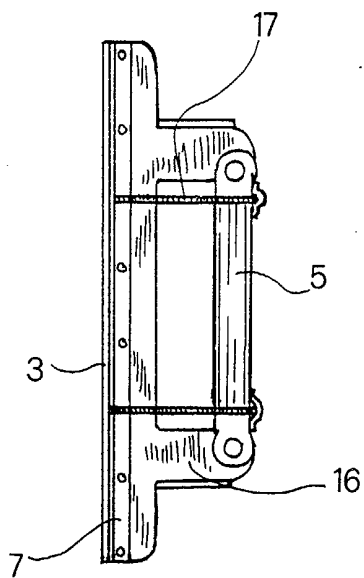


FIG. 15A

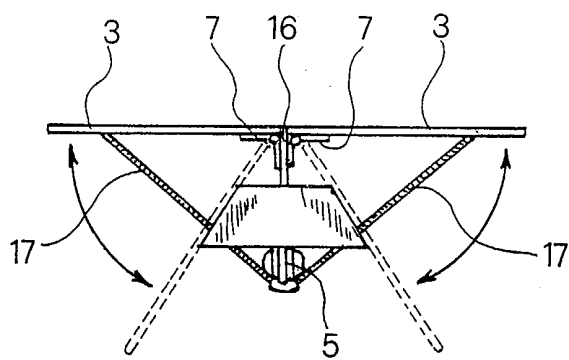


FIG. 15B

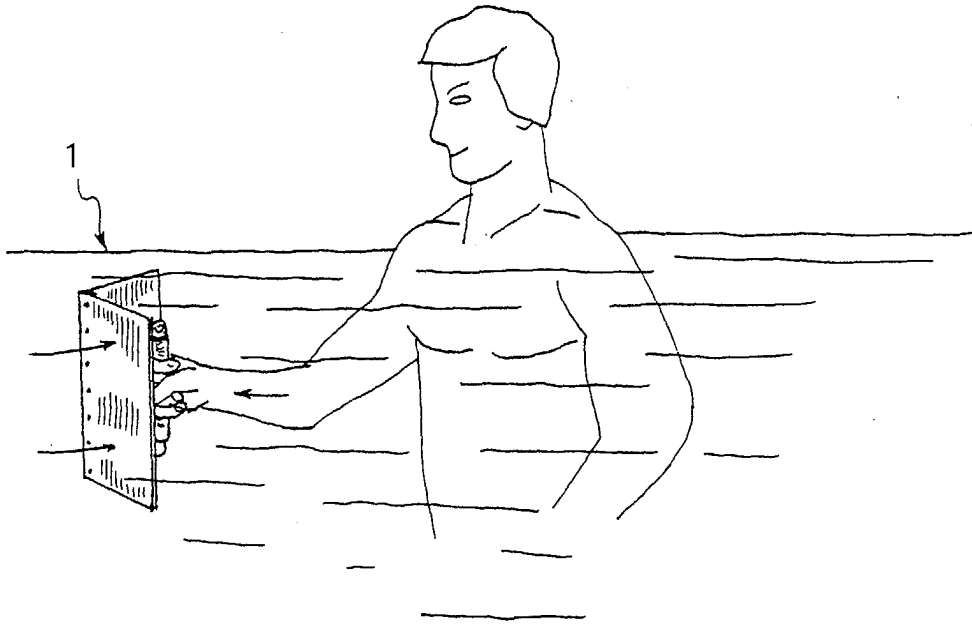


FIG. 16A

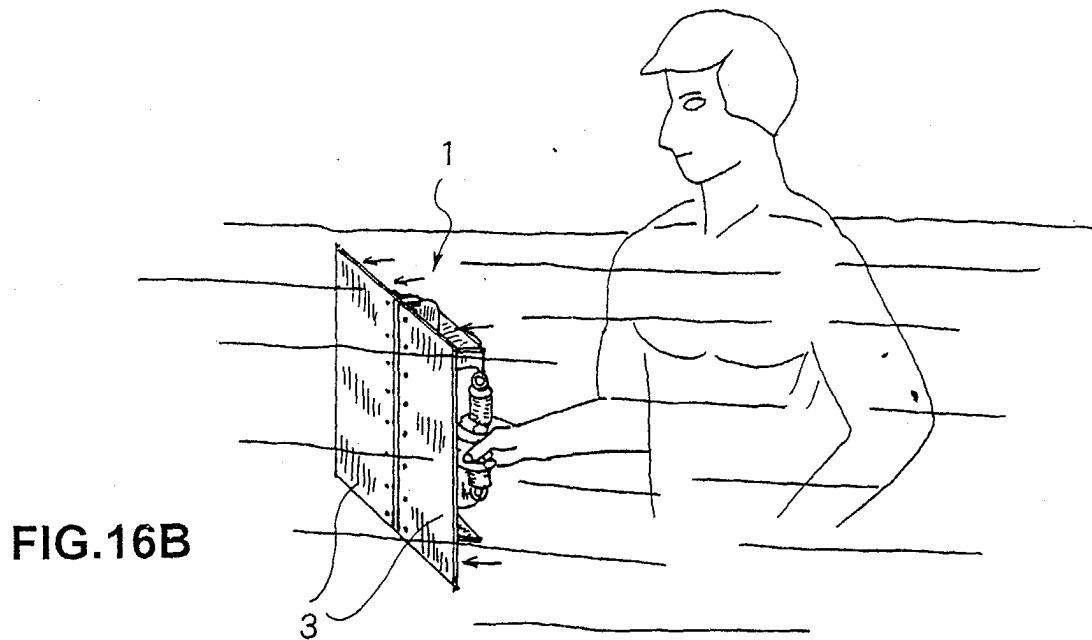


FIG. 16B



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 03 42 5461

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 2002/111093 A1 (BROWN WILLIAM BLAKE) 15 August 2002 (2002-08-15) * the whole document *	1-4,6, 10,11, 13,14	A63B31/10
X	FR 2 823 981 A (EL GIABU RAMADAN ALI HUSSEIN) 31 October 2002 (2002-10-31) * the whole document *	1,2, 12-14	
X	DE 198 14 100 C (MINDERLIN ALBERT) 24 June 1999 (1999-06-24) * the whole document *	1,2, 12-14	
X	US 1 708 331 A (PATRICK RYAN) 9 April 1929 (1929-04-09) * the whole document *	1-5,13, 14	
X	GB 323 421 A (HENRY HAMMETT) 2 January 1930 (1930-01-02) * the whole document *	1,7,9	
X	CH 97 264 A (VARAM KAZAZ) 16 December 1922 (1922-12-16) * the whole document *	1,7,8	TECHNICAL FIELDS SEARCHED (Int.Cl.7) A63B
A	US 5 545 066 A (TSAI YEN-WEN) 13 August 1996 (1996-08-13) * figures 1,2 *	11	
A	DE 484 882 C (HANS BECKERT) 23 October 1929 (1929-10-23) * figure 2 *	5	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 8 December 2003	Examiner Knoflachner, N
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 42 5461

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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08-12-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002111093 A1	15-08-2002	US 6398603 B1	04-06-2002
		AU 3293102 A	21-05-2002
		WO 0238226 A2	16-05-2002
FR 2823981 A	31-10-2002	FR 2823981 A1	31-10-2002
DE 19814100 C	24-06-1999	DE 19814100 C1	24-06-1999
US 1708331 A	09-04-1929	NONE	
GB 323421 A	02-01-1930	NONE	
CH 97264 A	16-12-1922	NONE	
US 5545066 A	13-08-1996	NONE	
DE 484882 C	23-10-1929	DE 488735 C	13-01-1930
		DE 510388 C	18-10-1930
		DE 494560 C	31-03-1930
		DE 494392 C	24-03-1930
		DE 512778 C	22-11-1930
		DE 550743 C	19-05-1932
		DE 550744 C	14-05-1932
		US 1706974 A	26-03-1929

EPO FORM P0459

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