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(54) **Floating furniture for carrying a person or object in water**

(57) According to a first aspect, the invention relates to a floating furniture (1,12,13) for carrying a person or object in water. The floating furniture comprises a buoyant planar body (2), wherein the planar body (2) concerns

a rigid and hollow body. The planar body (2) is provided with one or more positioning elements, which positioning elements are suitable to attach a soft body (4) to the top surface (5) of the planar body (2).

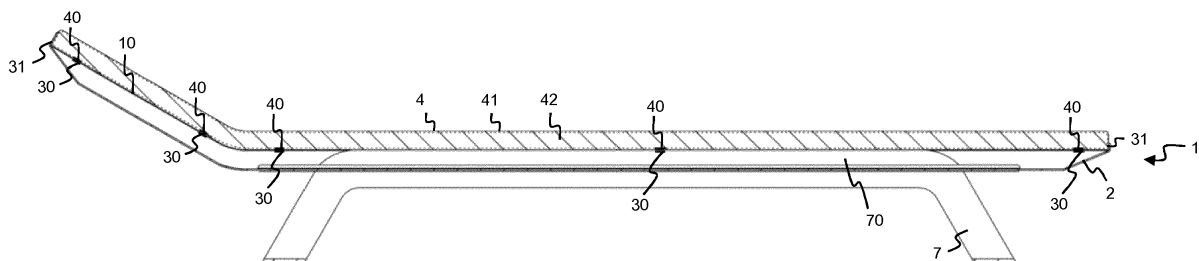


Fig. 5

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Description

Field of the Invention

[0001] The present invention generally relates to floating furniture. Floating furniture is suitable to carry one or more persons or objects in water due to its buoyancy.

[0002] More in particular, the invention relates to the field of furniture for water recreation. Typical locations are amongst others swimming pools, beach, lakes, off-shore, etc.

Background of the Invention

[0003] In order for a person or object to float on water, it can be carried or supported by objects or devices with a sufficient buoyancy to carry the weight of the person or object.

[0004] A common implementation of such floating furniture are inflatable mattresses. These air mattresses are typically made from plastics and are mainly used as water toy.

[0005] A problem with these mattresses is an inferior quality and bad comfort. Due to the flexibility of the material, inflatable mattresses easily leak or break down. Hence, repairing or fixing these leaks is often difficult. Another problem is that the original colors or look of the mattress quickly degrades because of usage, heat (e.g. sun), salty water, chlorine, sunscreen, transpiration, etc.

[0006] A first solution concerns floating devices made of foam. Problem is that these foams are heat sensitive and thereby can deform easily.

[0007] A second existing solution concerns a floating device made of a closed cell foam, wherein the outer surface optionally is provided with a coating, such as e.g. vinyl or polyurea.

[0008] However, it is a known problem that under the influence of the sun or heat, gases within the closed cells of these foams can release. In case of a surrounding coating, the formation of bubbles at the surface or even cracks will occur. Hence, these bubbles or cracks lead to a bad comfort and short durability of floating devices. Next to this, repairing or fixing of such deformations is too complex and difficult to execute.

[0009] There is a need for a more durable and more comfortable floating furniture for carrying a person or object in water. As durability should be improved, there is also a need for a floating furniture allowing a better adaptability to influences as salt water, sunscreen, heat, UV light, chlorine, transpirations, etc.

Summary of the Invention

[0010] It is an object to overcome or alleviate the above shortcomings of durability and repairability.

[0011] This object is achieved, in a first aspect, by a floating furniture for carrying a person or object in water. The floating furniture comprises a buoyant planar body,

wherein the planar body concerns a rigid and hollow body. The planar body is provided with one or more positioning elements, which positioning elements are suitable to attach a soft body to the top surface of the planar body.

[0012] The rigid and hollow planar body allows for the choice of a rigid material which is not to subject to deformation or wear, as for example with floating foam solutions as a result of sun heat. Hence, this allows for a more durable implementation of floating furniture. Next to this, also comfort for a carried person will be strongly improved.

[0013] According to an embodiment, the positioning elements are suitable to releasably attach a soft body to the top surface of the planar body.

[0014] As a soft body or cushion can be releasably attached to the planar body, soft bodies can easily be replaced or removed. It can be convenient to replace the cushion with a second cushion, having e.g. a different color or quality. The repair or renewing of such cushions therefore can be done easily.

[0015] According to an embodiment, the positioning elements comprise one or more magnetic elements, hook and loop elements and/or zipper elements.

[0016] Such positioning elements allow for an easy, quick and more convenient placement or removal of soft bodies to the planar body of the floating furniture.

[0017] According to an embodiment, the positioning elements comprise raised edges peripherally provided at the top surface of the planar body, which raised edges extend away from the plane of the top surface, wherein the raised edges are suitable to clamp the soft body at least partially at its sides.

[0018] As these raised edges are provided peripherally, a lateral or horizontal displacement of the soft body is further avoided or reduced with respect to the planar body.

[0019] According to an embodiment, the planar body is provided with one or more securing elements suitable to releasably secure the planar body to a supporting base, in order to elevate the planar body from the ground.

[0020] According to an embodiment, the one or more securing elements comprise one or more grooves in the bottom surface of the planar body, which grooves are suitable to receive one or more raised edges on top of the supporting base.

[0021] According to an embodiment, the planar body internally is provided with reinforcement means.

[0022] Such reinforcement means improve the strength of the floating furniture. Hereby potential bending due to weight (e.g. person) on top of the floating furniture is reduced or avoided. This further improves the robustness of the planar body.

[0023] According to an embodiment, the reinforcement means concerns at least one spacer element extending between the inner top surface and the bottom surface of the planar body.

[0024] A spacer element allows to counteract the bend-

ing of those surfaces towards each other, which leads to a more robust floating furniture.

[0025] According to an embodiment, the bottom surface of the planar body is suitable to be provided with one or more contact elements for making contact with the ground and for protecting the planar body to make contact with the ground, wherein the one or more contact elements preferably are made of a scratch resistant material.

[0026] According to an embodiment, the planar body is hermetically sealed and internally filled with a gas or gas mixture, preferably air.

[0027] According to an embodiment, the planar body is made of one or a combination of more water impermeable materials selected from the group consisting of laminate composites, aluminium composites, fiber reinforced composites, hard plastics, polymers, thermoplastic polymers, high density poly ethylene (HDPE), acrylonitrile butadiene styrene (ABS), polystyrene (PS), polypropylene (PP) and polycarbonate (PC).

[0028] According to an embodiment, the planar body is fabricated using a vacuum moulding technique.

[0029] The term "vacuum moulding technique" in underlying disclosure should be understood as a vacuum technique allowing the fabrication of one or more parts of the planar body of the floating furniture. Depending on the specific material used, possible techniques inter alia are vacuum infusion techniques, resin transfer moulding (RTM) techniques (e.g. RTM light, etc.), thermoplastic moulding, compression moulding or reaction injection moulding.

[0030] An example could be that the planar body is made of a fiber reinforced composite shell combined with an HDPE lid or cover. Both parts could be fabricated by vacuum moulding technique or e.g. a combination of a RTM light process for the composite part and a vacuum technique for the HDPE lid part. Such a combination could be advantageous in view of a trade-off between a sufficiently low weight and high strength of the planar body.

[0031] According to an embodiment, the floating furniture further is provided with a second top surface at an end portion of the planar body, which second top surface makes an angle α with the longitudinal axis of the planar body, wherein α is situated between 5° and 80° .

[0032] An inclined end part of the floating furniture is advantageous as it allows for a more comfortable head-rest for a person lying thereon.

[0033] According to an embodiment, at least one side of the planar body is provided with one or more attaching elements for releasably attaching a second floating furniture sideways to the floating furniture.

[0034] Those attaching elements allow for a modular enlargement of area of a combined floating furniture. Hereby a plurality of persons or objects can be carried together in the water.

[0035] According to an embodiment, the length of the planar body is situated between 1.5m and 2.5m, preferably

ably about 2.04m, and the width of the planar body is situated between 0.40m and 1.00m, preferably about 0.70m.

[0036] According to an embodiment, the length of the planar body is situated between 1.5m and 2.5m, preferably about 2.04m, and the width of the planar body is situated between 0.80m and 2.00m, preferably about 1.40m.

[0037] In a second aspect, the disclosure relates to a soft body for a floating furniture. The soft body is covered with a fabric, which fabric is water-impermeable, UV-resistant, resistant to salt water, chlorine, transpirations and/or sunscreen, which fabric preferably is an acrylic fabric.

[0038] According to an embodiment, the soft body is provided with positioning means to releasably attach the soft body to a top surface of a planar body of the floating furniture.

[0039] In a third aspect, the disclosure relates to a supporting base for a floating furniture. The supporting base is suitable to releasably secure the floating furniture in order to elevate the floating furniture from the ground.

[0040] In a fourth aspect, the disclosure relates to a kit for a floating furniture, comprising a floating furniture, a supporting base and/or one or more soft bodies.

Brief Description of the Drawings

[0041]

Fig. 1 is a perspective view of a floating lounge with corresponding supporting base, according to an embodiment of underlying disclosure.

Fig. 2 is a bottom view of the floating lounge of Fig. 1, with and without a supporting base.

Fig. 3 is a side and front view of the floating lounge of Fig. 1 on a supporting base.

Fig. 4 is a cross-sectional view across the longitudinal axis of the floating lounge of Fig. 1, with and without a supporting base.

Fig. 5 is a cross-sectional view along the longitudinal axis of the floating lounge of Fig. 1.

Fig. 6 is a perspective view of a floating table, according to an embodiment of underlying disclosure.

Fig. 7 is a cross-sectional view across the longitudinal axis of the floating table of Fig. 6.

Fig. 8 is a perspective view of the floating lounge of Fig. 1 on the ground with and without supporting base.

Fig. 9 is a perspective view of a twin floating lounge

on the ground with and without supporting base, according to an embodiment of underlying disclosure.

Fig. 10 schematically illustrates the possible usage of the floating lounger of Fig. 1.

Detailed Description of Embodiment(s)

[0042] Fig. 1 illustrates a floating lounger (1) for carrying a person or object in water, according to an embodiment of underlying disclosure. The drawing shows a supporting base (7), which at the top is provided with raised edges (70). The base (7) is also provided with two flat parts (71) at the bottom in order to support the lounger (1). The base (7) can for example be fabricated in a fiber reinforced plastic such as Durostone™.

[0043] The supporting base (7) is compatible with the floating lounger (1), as the bottom surface (9) of the lounger (1) is provided with securing elements (6), concerning two parallel longitudinal grooves (8), wherein these two raised edges (70) can be inserted. Figure 2 shows a bottom view of the lounger (1) alone (see top drawing) and the lounger (1) connected to the supporting base (7) (see bottom drawing).

[0044] The lounger (1) consists of a buoyant planar body (2) and a soft body (4). The planar body (2) is a rigid and hollow body provided with multiple positioning elements. The positioning elements allow the planar body (2) to be attached to the soft body (4).

[0045] The bottom surface (9) of the lounger (1) is further provided with two longitudinal grooves (91), wherein a teflon strip (90) can be provided. These two scratch resistant strips (90) allow to place the lounger (1) on the ground, preventing the rest of the lounger (1) making contact with the ground. Hereby the lounger (1) is better protected against scratches when placing or moving the lounger (1).

[0046] The top drawing of Fig. 3 is a side view of the floating lounger (1) of Fig. 1 on its supporting base (7). The drawing illustrates that the planar body (2) has a deflected part starting from the end part (11), whereby the top surface (10) of the deflected part makes an angle α with the longitudinal axis of said planar body (2), wherein α is about 30°. This functions as a headrest for a person. The bottom drawing of Fig. 3 shows a back view of the floating lounger (1) on its supporting base (7).

[0047] Fig. 4 is a cross-sectional view across the longitudinal axis of the floating lounger (1) of Fig. 1 on the ground (see top drawing) and on its supporting base (7) (see bottom drawing).

[0048] The lounger (1) is provided with positioning elements which enable to releasably attach the soft body (4) to the top surface (5) of the planar body (2).

[0049] These positioning elements comprise neodymium magnets (30) provided near the top surface (5) of the planar body (2). The soft body (4) is also provided with magnets (40). These magnets (40) are positioned near the bottom surface of the soft body (4), such that

each magnet (40) corresponds to a magnet (30) of the planar body (2). The poles directed towards each other are opposite (i.e. north and south pole) whereby the corresponding magnets will be attracted to each other. In Fig. 4 the soft body magnets (40) and corresponding magnets (30) are pulled together, so that the soft body (4) is releasably attached and positioned to the planar body (2).

[0050] Next to these magnet elements (30), the positioning elements also consists of the raised edges (31) extending away from the top surface (5) of the planar body (2). These edges (31) avoid a lateral movement sideways of and clamp the soft body (4) as these edges (31) are peripherally provided to the lounger (1).

[0051] The cross-sectional views show the teflon strips (90) provided in the corresponding grooves (91) of the bottom surface (9) of the lounger (1). As the strips (90) protrude from the surface (9), they will touch the ground and prevent the rest of the bottom surface (9) of making contact.

[0052] Internally the planar body (2) is reinforced with three polystyrene foam strips (21) positioned in the longitudinal direction of the planar body (2). They extend between the inner top surface (22) and the bottom surface (23) of the planar body (2). Hereby inwards bending of the inner top surface (22) as a result of weight of a person, can be reduced or avoided. Further, the planar body (2) is hermetically sealed and internally filled with air (24).

[0053] The soft body (4) concerns a foam cushion (42) covered with an acrylic fabric (41), e.g. "Sunbrella™". This leads to a better durability of the soft body (4) as the fabric (41) is preferably water-impermeable, UV-resistant, resistant to salt water, chlorine, transpirations and sunscreen.

[0054] The bottom drawing of Fig. 4 shows that the lounger (1) is connected to its supporting base (7), by the two edges (70) that are inserted into the longitudinal grooves (8) at the bottom surface (9) of the planar body (2).

[0055] Fig. 5 shows a cross-sectional view along the longitudinal axis of the floating lounger (1) of Fig. 1. The drawing shows that also magnets (30) are provided near the top surface (10) of the deflected part. The soft body (4) also comprises a deflected part with corresponding angle α and corresponding magnets (40).

[0056] Fig. 6 is a perspective view of a floating table (13) on the ground (see top drawing) and on a supporting base (14) (see bottom drawing), according to an embodiment of underlying disclosure. Hence, the floating table (13) can carry an object when floating on water, but is also adapted to be put on the corresponding supporting base (14) as depicted in the bottom drawing of Fig. 6.

[0057] Fig. 7 is a cross-sectional view across the longitudinal axis of the floating table (13) of Fig. 6. Elements in Figs. 6 or 7 with a same reference number as in Figs. 1-5 have a similar functioning as in the embodiment of Fig. 1.

[0058] Fig. 8 is a perspective view of the floating lounger (1) of Fig. 1 on the ground with and without supporting base (7). The lounger is adapted to carry the weight of a person, when floating or when provided on its supporting base (7).

[0059] Fig. 9 is a perspective view of a twin floating lounger (15) on the ground with and without supporting base (16), according to an embodiment of underlying disclosure. The lounger (15) is a wider version of the lounger (1) of Fig. 1, which allows for persons to lie on the lounger (15), when floating or when provided on its supporting base (16).

[0060] Fig. 10 schematically illustrates the possible usage of the floating lounger (1) of Fig. 1. The top drawing illustrates a person (102) lying on the lounger (1) on its supporting base (7). The middle drawing illustrates the person (102) lying on the lounger (1) on the ground (100). The bottom drawing illustrates a person (102) lying on the lounger (1) in water (101).

[0061] Although the present invention has been illustrated by reference to specific embodiments, it will be apparent to those skilled in the art that the invention is not limited to the details of the foregoing illustrative embodiments, and that the present invention may be embodied with various changes and modifications without departing from the scope thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein. In other words, it is contemplated to cover any and all modifications, variations or equivalents that fall within the scope of the basic underlying principles and whose essential attributes are claimed in this patent application. It will furthermore be understood by the reader of this patent application that the words "comprising" or "comprise" do not exclude other elements or steps, that the words "a" or "an" do not exclude a plurality, and that a single element, such as a computer system, a processor, or another integrated unit may fulfil the functions of several means recited in the claims. Any reference signs in the claims shall not be construed as limiting the respective claims concerned. Similarly, the terms "top", "bottom", "over", "under", and the like are introduced for descriptive purposes and not necessarily to denote relative positions. It is to be understood that the terms so used are interchangeable under appropriate circumstances and embodiments of the invention are capable of operating according to the present invention in orientations different from the one(s) described or illustrated above.

Claims

1. Floating furniture (1,12,13) for carrying a person or object in water, comprising a buoyant planar body

(2), **characterized in that** said planar body (2) concerns a rigid and hollow body and **in that** said planar body (2) is provided with one or more positioning elements, which positioning elements are suitable to attach a soft body (4) to the top surface (5) of said planar body (2).

2. Floating furniture (1,12,13) according to claim 1, **characterized in that** said positioning elements are suitable to releasably attach a soft body (4) to said top surface (5) of said planar body (2).
3. Floating furniture (1,12,13) according to claim 1 or 2, **characterized in that** said positioning elements comprise one or more magnetic elements (30), hook and loop elements and/or zipper elements.
4. Floating furniture (1,12,13) according to any of claims 1-3, **characterized in that** said positioning elements comprise raised edges (31) peripherally provided at the top surface (5) of said planar body (2), which raised edges (31) extend away from the plane of said top surface (5), wherein said raised edges (31) are suitable to clamp said soft body (4) at least partially at its sides.
5. Floating furniture (1,12,13) according to any of claims 1-4, **characterized in that** the planar body (2) is provided with one or more securing elements (6) suitable to releasably secure said planar body (2) to a supporting base (7,14,16), in order to elevate said planar body (2) from the ground.
6. Floating furniture (1,12,13) according to claim 5, **characterized in that** said one or more securing elements (6) comprise one or more grooves (8) in the bottom surface (9) of said planar body (2), which grooves (8) are suitable to receive one or more raised edges (70) on top of said supporting base (7,14,16).
7. Floating furniture (1,12,13) according to any of claims 1-6, **characterized in that** said planar body (2) internally is provided with reinforcement means (20).
8. Floating furniture (1,12,13) according to claim 7, **characterized in that** said reinforcement means (20) concerns at least one spacer element (21) extending between the inner top surface (22) and the bottom surface (23) of said planar body (2).
9. Floating furniture (1,12,13) according to any of claims 1-8, **characterized in that** the bottom surface (9) of the planar body (2) is suitable to be provided with one or more contact elements (90) for making contact with the ground and for protecting said planar body (2) to make contact with the ground, wherein said one or more contact elements (90) preferably

are made of a scratch resistant material.

10. Floating furniture (1,12,13) according to any of claims 1-9, **characterized in that** said planar body (2) is hermetically sealed and internally filled with a gas or gas mixture, preferably air (24). 5

11. Floating furniture (1,12,13) according to any of claims 1-10, **characterized in that** said planar body (2) is made of one or a combination of more water impermeable materials selected from the group consisting of laminate composites, aluminium composites, fiber reinforced composites, hard plastics, polymers, thermoplastic polymers, high density polyethylene (HDPE), acrylonitrile butadiene styrene (ABS), polystyrene (PS), polypropylene (PP) and polycarbonate (PC). 10
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12. Floating furniture (1,12,13) according to any of claims 1-11, **characterized in that** said floating furniture (1,12,13) further is provided with a second top surface (10) at an end portion (11) of the planar body (2), which second top surface (10) makes an angle α with the longitudinal axis of said planar body (2), wherein α is situated between 5° and 80°. 20
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13. Soft body (4) for a floating furniture (1,12,13) according to any of claims 1-12, **characterized in that** said soft body (4) is covered with a fabric (41), which fabric (41) is water-impermeable, UV-resistant, resistant to salt water, chlorine, transpirations and/or sunscreen, which fabric (41) preferably is an acrylic fabric. 30

14. A supporting base (7,14,16) for a floating furniture (1,12,13) according to any of claims 1-12, **characterized in that** said supporting base (7,14,16) is suitable to releasably secure said floating furniture (1,12,13) in order to elevate said floating furniture (1,12,13) from the ground. 35
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15. Kit for a floating furniture (1,12,13) comprising a floating furniture (1,12,13) according to any of claims 1-12, a supporting base (7,14,16) according to claim 14, and/or one or more soft bodies (4) according to claim 13. 45

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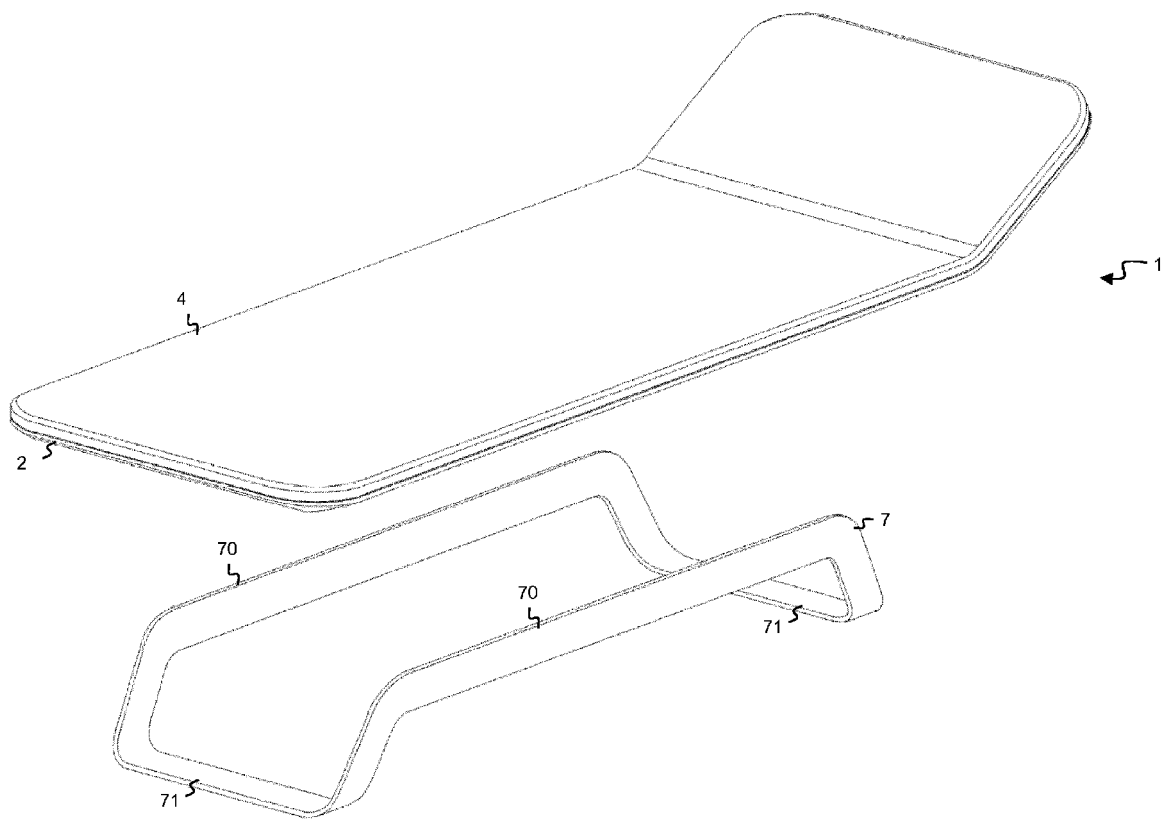


Fig. 1

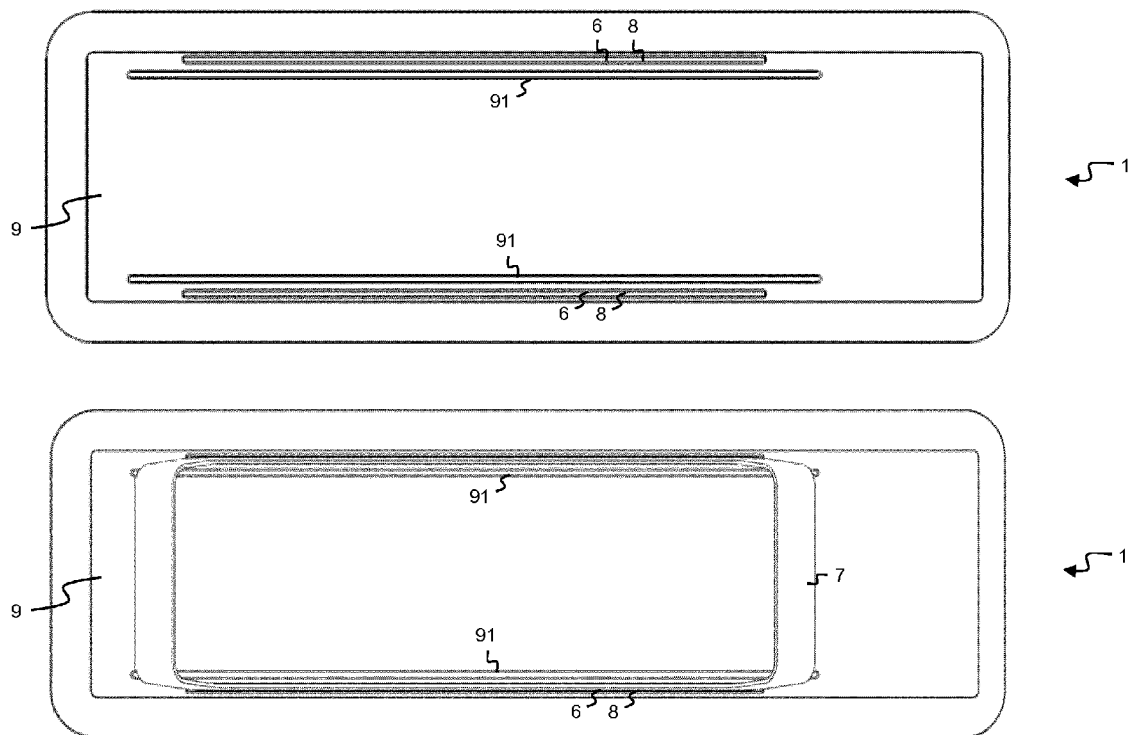


Fig. 2

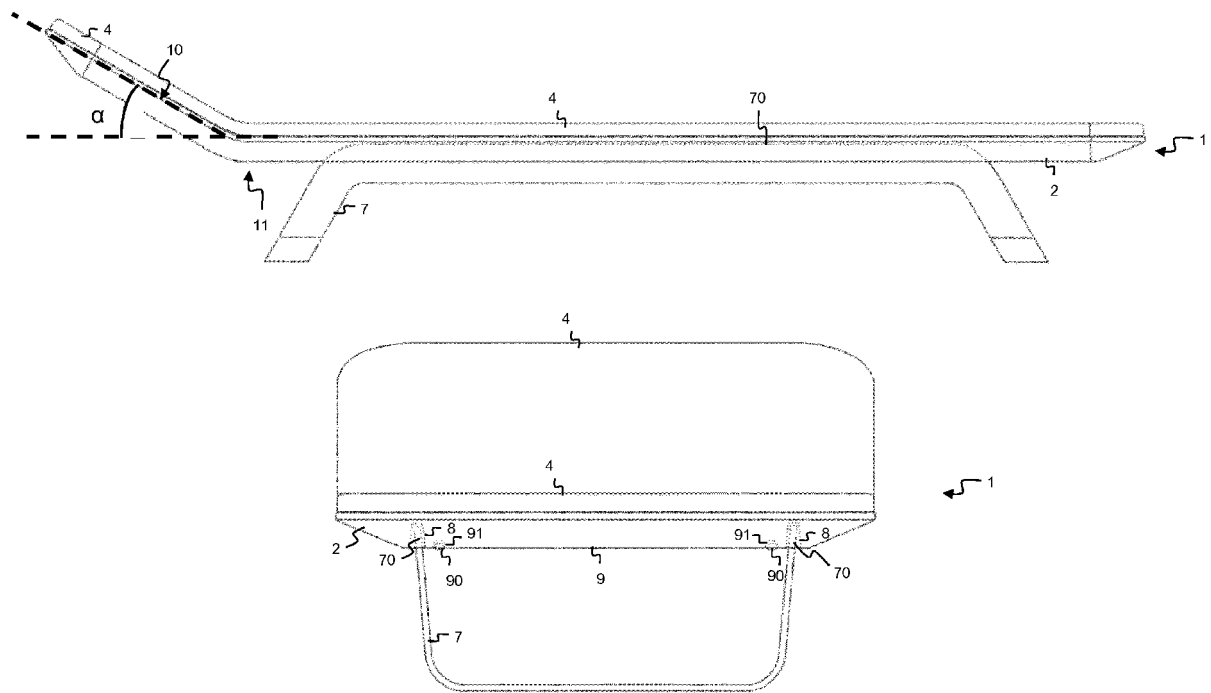


Fig. 3

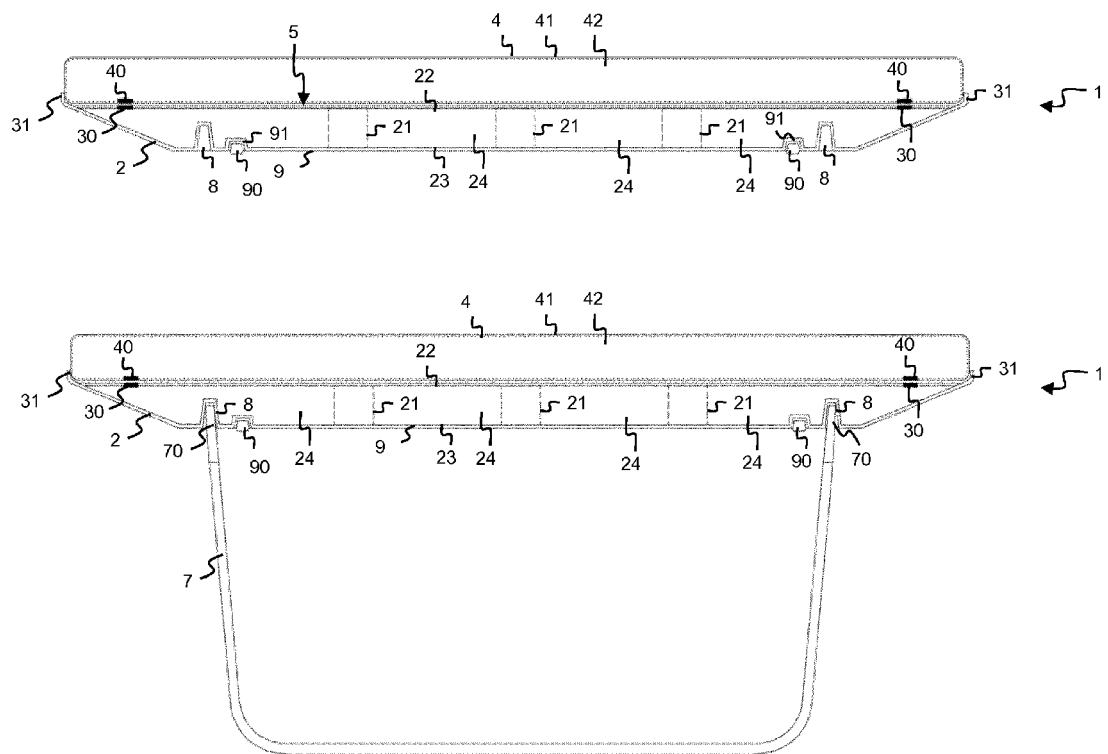


Fig. 4

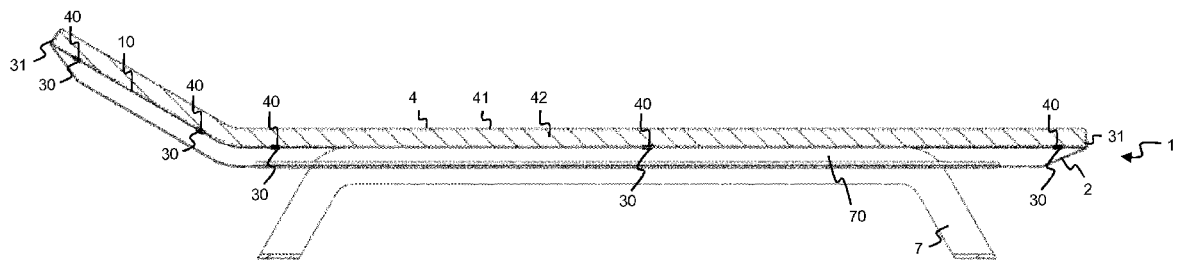


Fig. 5

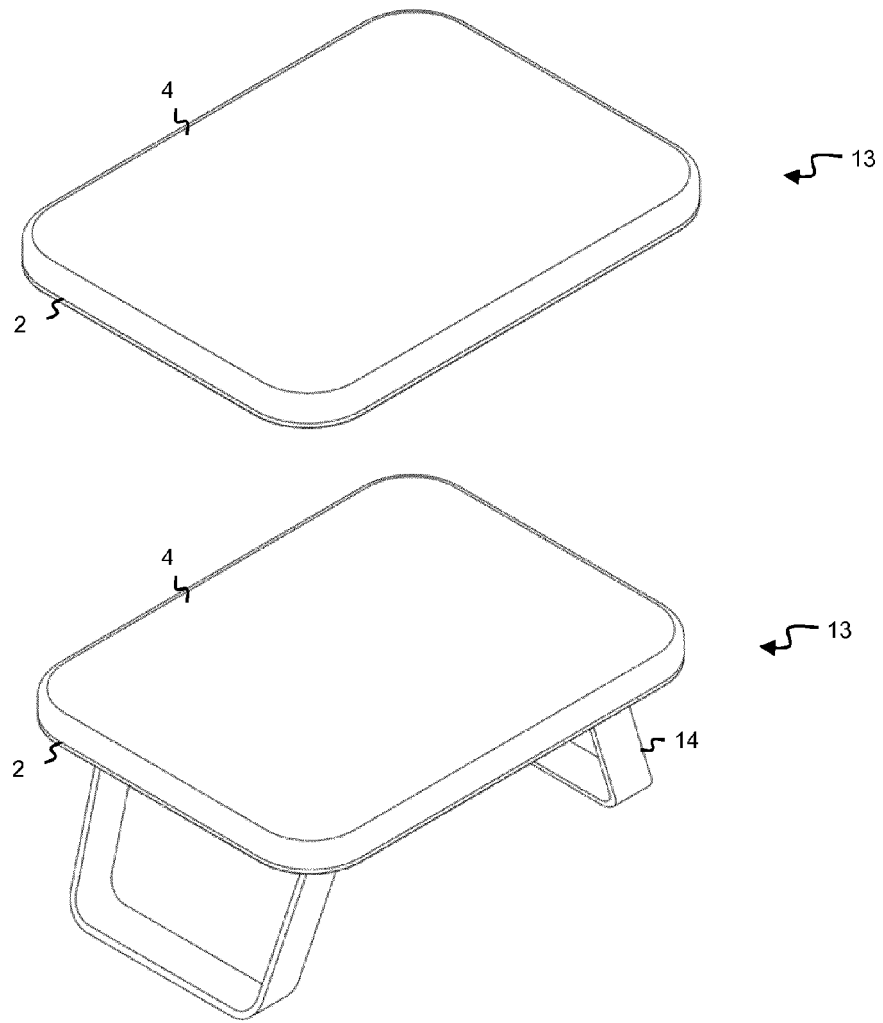


Fig. 6

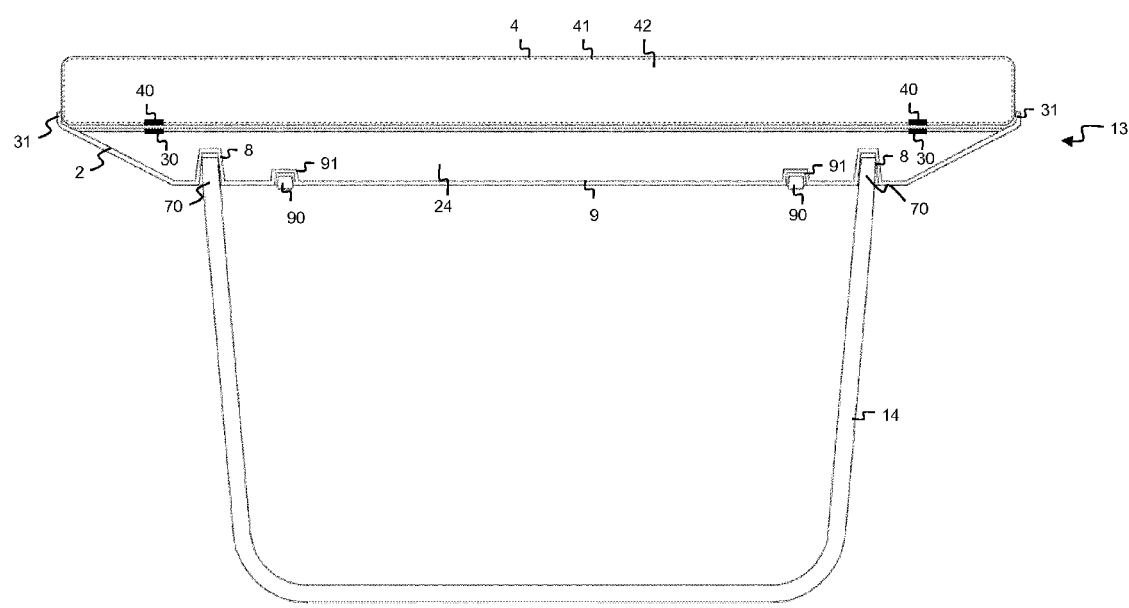


Fig. 7

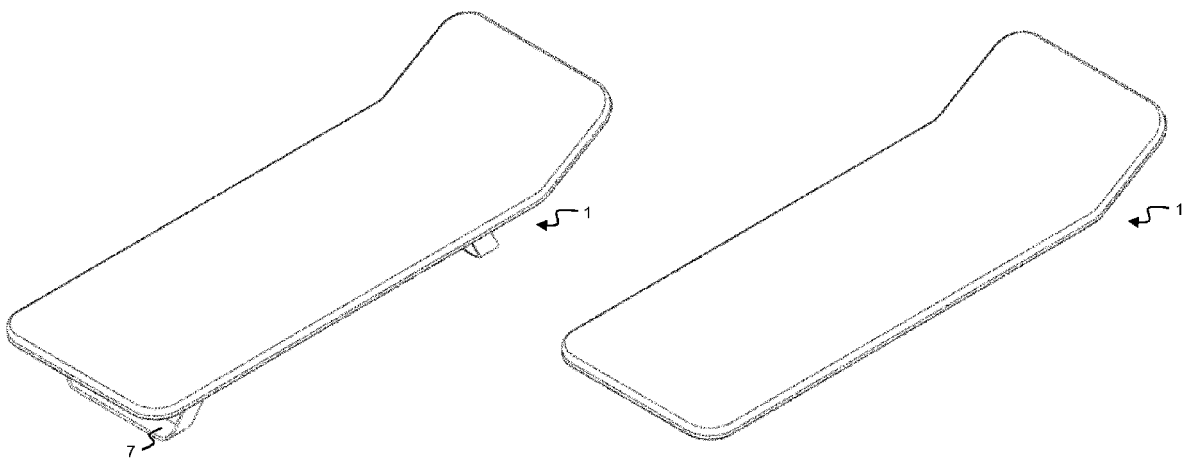


Fig. 8

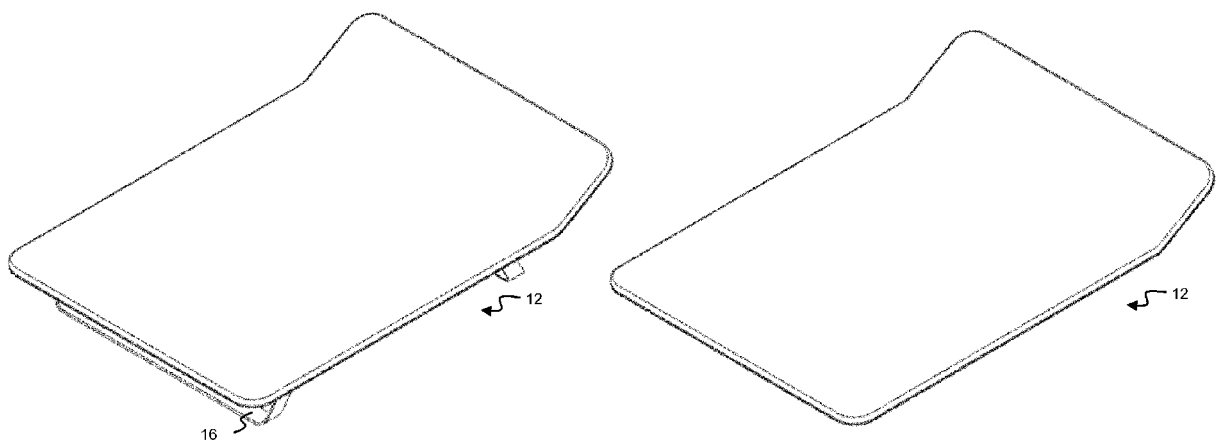


Fig. 9

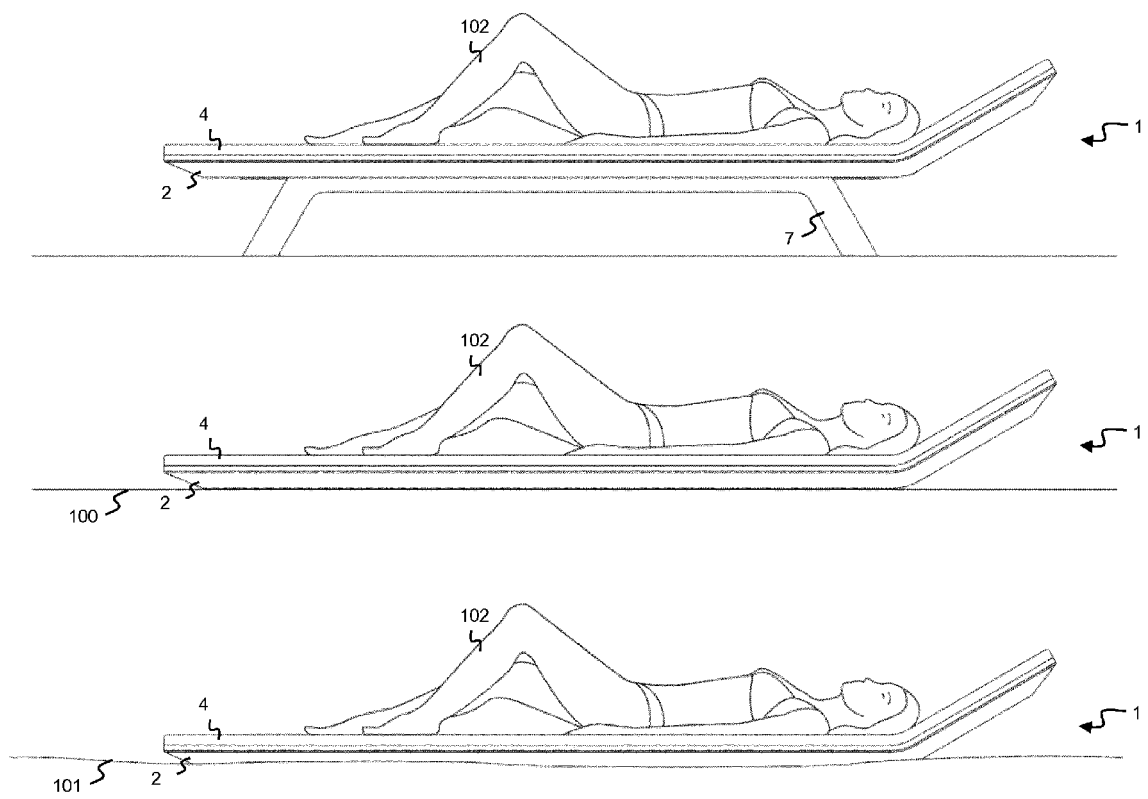


Fig. 10



EUROPEAN SEARCH REPORT

 Application Number
 EP 14 19 3259

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DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 May 2015	Examiner Cauderlier, Frédéric
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EPO FORM 1503 03/82 (P04C01)

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

EP 14 19 3259

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