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(54)

COVERING, PARTICULARLY POOL COVERING

- (57)

The invention relates to a covering, in particular a covering of a pool (1), consisting of at least one planar supporting structure (4) provided with a covering on its upper side and a slide on its lower side, where the supporting structure (4) is provided on its lower side with at least two parallel paths for holding at least one beam (3), wherein at least one beam (3) is positioned in the paths
- movably horizontally below the underside of the supporting structure (4). The beam (3) may be doubled and contains two symmetrical parts connected at its lower edge by an articulated joint, which are provided on their upper side with path attachments for opening the symmetrical parts to the horizontal direction and clamping them to the vertical direction.

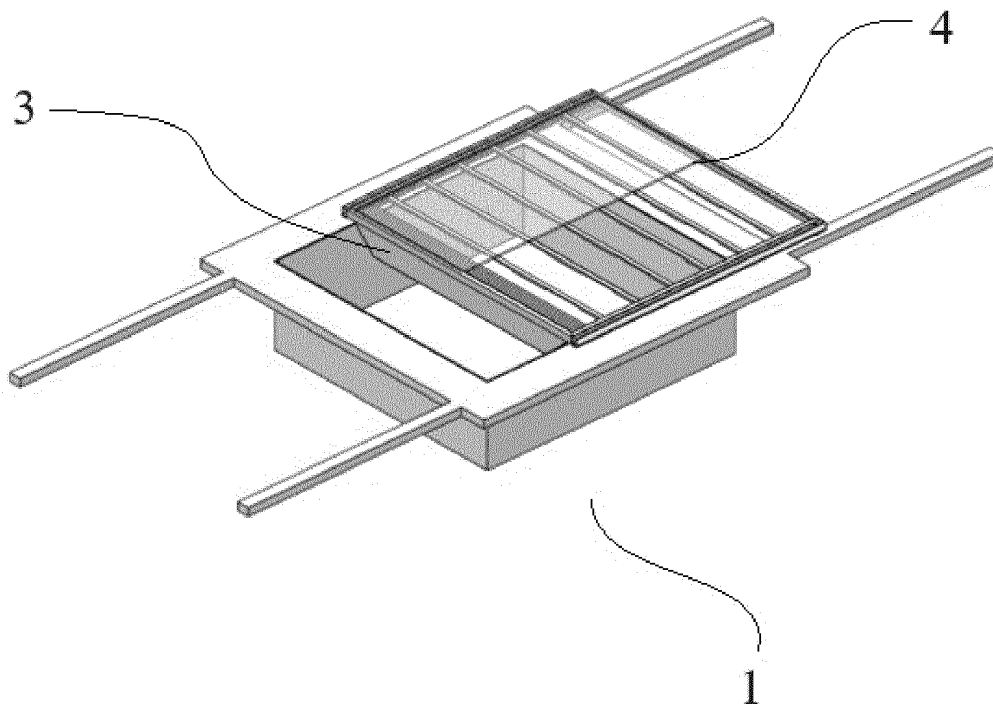


Fig. 2

Description

Technical Field

[0001] The invention relates to walkable covering, particularly pool covering, consisting of at least one planar, support structure provided on its top part with a cover forming a planar surface, arc or other shape, and on its underside with a slide enabling the covering to be moved outside the plan of the pool.

Background Art

[0002] Various covering solutions are known from technical practice. When it comes to pool roofing, various films or slats placed on the surface are usually used. Their disadvantage is that they are not walkable and at the same time they are largely dangerous, for example, when a child or animal falls into a pool covered in such a way.

[0003] Covering in the form of roofing in various shapes located above the pool area is widely used. This can be a fixed roofing that has to be high enough for users to be able to move under it or a sliding roofing that slides away when using the pool. In some cases, its appearance is a disadvantage that disrupts the surroundings of the pool. A significant disadvantage is the inability to walk on such roofing. If the pool is covered, it is not possible to use the area in any way, and if the pool is exposed, the extended roof also occupies a part of the area that could be used more appropriately.

[0004] Another option is a sliding roofing in the form of covering consisting mainly of a flat cover or an arc or other shape that slides over the water surface and can be used, for example, for walking, placing garden furniture, for sports activities and the like. The disadvantage of existing sliding coverings is either their low static load capacity due to the light construction of the covering, or its high height due to the use of high beams, i.e. beams with higher static load capacity at the cost of increased cross-sectional height.

[0005] The disadvantages of existing solutions are that they are not walkable at all or that they are walkable only if the covering is flat - a cover. The limited load capacity of the walkable covering is due to the low profile of the beams used, as the use of higher beams, which would lead to higher stability and load capacity of the area of the covering, increases the total height of the walking area compared to the area surrounding the pool. This height, particularly of the walkable covering, limits its load capacity, but at the same time, locating the walkable surface at a higher position using higher and therefore stronger beams is not aesthetically pleasing in regards to the surroundings and it prevents comfortable access to the covering.

Summary of the Invention

[0006] The aforementioned shortcomings are largely remedied by a walkable covering, particularly pool covering, consisting of at least one planar supporting structure provided with a covering on its top part and a slide on its underside, according to this technical solution. Its essence is that the supporting structure is provided on its underside with at least two parallel paths for holding at least one beam, wherein at least one beam is located in the paths movably in the horizontal direction below the underside of the supporting structure.

[0007] In a preferred embodiment, the covering is provided with a beam that is doubled and contains two symmetrical parts connected at its lower edge by an articulated joint, and on its upper side, clamps are provided with mounts in paths for opening the symmetrical parts to the horizontal direction and clamping them to the vertical direction.

[0008] The beams can be arranged either in width or in length in the plan.

[0009] The paths are in a preferred embodiment provided with stops for fixing the beams in the desired location.

[0010] The beams preferably have a structure selected from the group of a truss, solid and solid with a recess structures, and in a shape selected from the group of rectangle, triangle, rhomboid, arch and combinations thereof.

[0011] The symmetrical parts of the double beams are preferably provided with a mechanism for folding them horizontally below the surface of the supporting structure before moving the covering to the open position of the pool.

[0012] The beams are preferably provided with an additional mechanism to move them to the extreme position before moving the covering to the open position of the pool.

[0013] The upper side of the covering can be at the level of the surrounding plane. The covering may include at least two parts that are located above one other in the open position, i.e. a so-called telescopic embodiment. The covering is non-walkable, with the top part of various shapes selected from the group of arched, beveled, and combinations thereof, to increase the static load capacity and/or to drain water from the top part.

[0014] The covering is thus provided with a retractable beam, or a double retractable beam functioning similarly to a blind slat.

[0015] At least one retractable single or double beam acting as a blind slat is preferably connected to the supporting structure by means of structural struts and pull rods and by means of a mechanism for enabling it to be moved and shifted from the place where it carries out its functions of strut to the parking area generally at the edge of the lower part under the covering. When placed and stabilized in the vertical direction, it increases the load-bearing capacity of the covering, and after its displace-

ment, it enables the movement of the covering outside the pool area, i.e. to shift the covering structure. Through their height, which is or may be higher than the total height of the covering visible on the surface, i.e. above the pool, the beams reinforce the structure of the entire covering beyond the actual structure that is above the top edge of the pool. Their use vertically downwards under the covering structure allows them to be placed, for example, in structural elements by means of which they can move under the covering surface in rails and thus change their position and location. This movement - displacement then allows the movement of the actual covering over the pool so that these beams do not obstruct this movement.

[0016] The beams can be made of different types of materials or even combinations thereof, including possible variability in thickness and shape, so that the production, material consumption, and load capacity are efficient based on the use. The shape can be that of a triangle, rectangle, square, rhomboid, arc, crescent, sector of a circle, circle, etc., or a combination of such or other shapes.

[0017] The double beams can be provided with a mechanism for their expansion and thus change of position in the horizontal direction, including the oblique position, before the movement of the covering to the open position of the pool or during this movement towards the opening of the covering.

[0018] In a preferred embodiment, the top part of the covering is at the level of the surrounding area, that is, as a rule, the walkable surface on the top of the covering is at the same height as the plane surrounding the pool.

[0019] In another situation, the covering is higher than the surrounding plane and thus forms a platform above the covered area. Beams pointing vertically under the covering towards the water form the supporting structure of the covering and increase its load capacity.

[0020] The cover may contain one or more boards, straight, arched or in other shape based on the size of the covered area. In the opened state, the arrangement of the boards above one another can be in the form of a telescopic placement, the boards can be arranged behind one another or they can slide into different sides.

[0021] Simple beams are moved to the opposite side at the bottom under the covering than the direction of movement of the covering when moving from the pool area. The double beams may be effectively moved to the opposite side, at the bottom under the covering, to the direction of movement of the covering when moving from the pool area, or they may be expanded in their horizontal position and placed in the area under the covering at its bottom, so as not to obstruct the movement of the covering when uncovering the pool.

[0022] The simple and double beams can be folded when approaching the edge of the pool, or the double beams can be folded before the movement is initiated, or during the movement, by means of a lifting mechanism, which can have different embodiments, such as different

lever mechanisms, gears, toothed belts, cables, etc.

[0023] Compared to a covering structure implemented to height by means of a higher beam structure or by means of an arc or other shape above the surrounding area, the use of bottom blind beams, which can be structurally higher than the height of the covering itself, in this way reinforces the covering structure downwards, i.e. towards the surface of the pool, increasing its durability, stability and static load capacity. When using bottom blind beams, the reinforcement of the structure is not directed upwards, into the covering structure itself and above the upper edge of the pool and the surrounding plane, but it is instead directed downwards, under the covering structure and into the free space of the pool, even though they might be fully or partially submerged in water. Individual beams can be more subtle than the structure facing upwards, above the pool, and they reinforce the structure by their structural height realized downwards, i.e. towards the water level in the pool. Compared to the typical types of coverings, this solution thus enables the production of coverings with lower height, higher static load capacity and without any substantial economic costs associated with the used structural elements, which have so far been implemented above the level of the upper edges of the pool in the construction of coverings.

[0024] The entire solution is more compact than the existing solutions and allows for easier transport and storage of the structure, owing to the possibility to easily stack the coverings, making efficient use of storage or transport area during the transport of the covering.

[0025] Another transport and assembly advantage is that the beams are placed into the structure additionally, i.e. on the site of the assembly or implementation, so the total weight of the product on the site of assembly/installation is lower, and the installation process is thus easier. The beams can therefore be preferably fixed during or after the installation of the covering.

[0026] As it is possible to use beams of different shapes, in terms of weight, the present solution offers a significantly lighter construction compared to existing solutions.

Brief Description of Drawings

[0027] The walkable covering according to the present invention will be described in more detail on specific exemplary embodiments using the accompanying drawings, where Fig. 1 is an axonometric view of the covering from above in the closed position. Fig. 1A shows the covering in the side view. Fig. 2 is the covering in a partially open position. Fig. 2A shows the covering in a partially open side view. Fig. 3 is the covering in the open position with the beams placed on one side and raised to the surrounding plane. Fig. 3A is the covering in the open position with the beams located on one side and raised to the surrounding plane in the side view. Fig. 4 shows the beams turned upwards in the open position. Fig. 4A

shows the beams in the open position turned upwards in the side view. Fig. 5 shows the beams tilted to the side in the open position. Fig. 5A shows the beams in the open position tilted to the side in the side view. Fig. 6 shows the double beams of the covering in the closed position. Fig. 6A shows the double beams of the covering in the closed position in the side view. Fig. 7 shows the double beams of the covering in a partially open position. Fig. 7A shows the double beams of the covering in a partially open position in the side view. Fig. 7B shows the double beams of the covering in a partially open position with the beams gradually folded. Fig. 8 is a partially expanded covering with a telescopic arrangement. Fig. 8A is a partially extended covering with a telescopic arrangement in side view. Fig. 9 shows the covering with a telescopic arrangement in the closed position. Fig. 9A shows the covering with a telescopic arrangement in the closed position in the side view.

Description of Embodiments of the Invention

[0028] An exemplary walkable pool covering 1 consists of two planar supporting structures 4 provided with a covering on the top part and a slide on the underside. The supporting structure 4 is provided on its underside with beams 3 connected by means of a mechanism to enable their horizontal movement in order to shift them to one side of the covering or, even in the case of double beams 3, to expand and fix them in the horizontal position at the bottom of the supporting structure 4 of the covering. Shifting the beams 3 to the side or, in the case of double beams 3, aligning them with the underside of the covering frees up the space under the covering and thus allows the covering to move outside the area and the area of the pool 1. The beams 3 are arranged across in the plan, wherein they fold to one side on one side of the structure and to the opposite side on the other side of the structure. The beams 3 are shaped as truss beams. The beams 3 may be moved along the underside of the supporting structure 4 of the covering by means of a mechanism and/or by driving onto the edge of the pool, wherein the upper side of the covering is at the surrounding plane 2 or above the surrounding plane 2 when extended. In the opened position, the two parts of the covering are located on different sides of the pool 1.

[0029] It is also possible to use double beams 3, which are attached by their upper part movably to the underside of the supporting structure 4 of the covering, so that they can be extended in a parallel direction to the covering.

[0030] In another embodiment, the parts of the covering are located above one another, in the form of a telescopic embodiment, in the opened position. Before the movement is initiated or during the movement of the covering structure, the beams 3 are lined up, i.e. assembled by means of a mechanism having different embodiments, including various gears, toothed belts, cables, etc. The beams 3 are solid or recessed, wherein their shape can be different, e.g. trapezoid, triangle, rectangle, sector of

a circle, etc. The beams 3 are located in the parking state at the end of the enclosure forming the roofing or, in the case of double beams 3, are in horizontal form stretched under the lower surface of the supporting structure 4 of the covering.

[0031] In yet another exemplary embodiment, the walkable covering of the pool 1 contains only one planar supporting structure 4 which covers the entire pool 1. The beams 3 are arranged in across in the plan and assemble only to one side. The beams 3 may be moved by means of a mechanism and/or by approaching the edge of the pool 1, wherein the upper side of the covering is at the surrounding plane 2 or above the surrounding plane 2 when extended. The upper side of the covering is above the level of the surrounding plane 2, but this level is not increased for the need to install the necessary height of the structural elements, as these elements are hung in the form of beams 3 vertically down below the actual surface of the supporting structure 4 of the covering. The covering may be provided on its top part with a non-walkable surface of various shapes, such as flat, arched or in any other shape which is aesthetically pleasing or increases the static resistance of the structure or drains e.g. rainwater and snow from the surface of the covering.

[0032] The beams 3 are provided with pins located in the guiding L-slot, or with additional pins located in the guiding C-slot on their upper side, on the edges. The beams 3 are provided with rotating rollers or rotating castors on their upper side for easier movement of beams 3 along the underside of the supporting structure 4 of the covering. A solution with additional rotary rollers or additional rotary castors located in the covering may also be used to facilitate the movement of the beams 3 along the underside of the supporting structure 4 of the covering. The covering is provided with castors that may or may not be in the guide rails.

[0033] The beams 3 can be made of various materials such as wood, metal, plastic, sandwich composites, etc.

Industrial Applicability

[0034] Walkable covering according to the present invention can be used primarily for covering pools, but also for covering other areas such as playgrounds, handling pits, construction excavations, storage areas, etc.

Claims

1. A covering, in particular of a swimming pool, comprising at least one planar supporting structure provided with a covering on its upper side and a slide on its underside **characterized in that** a supporting structure (4) is provided with at least two parallel paths on its underside to hold at least one beam (3), wherein at least one beam (3) is positioned in the paths movably horizontally below the underside of

the supporting structure (4) of the covering.

2. The covering according to claim 1 **characterized in that** the beam (3) is doubled and contains two symmetrical parts connected at its lower edge by an articulated joint, which are provided on their upper side with path fixations for opening the symmetrical parts to the horizontal direction and clamping them to the vertical direction. 5
3. The covering according to claim 1 or 2 **characterized in that** the beams (3) are arranged in one of the width and length directions in the plan. 10
4. The covering according to any one of claims 1 to 3 **characterized in that** the paths are provided with stops for fixing the beams (3) at the desired location. 15
5. The covering according to any one of claims 1 to 4 **characterized in that** the beams (3) have a structure selected from the group of truss, solid and solid with a recess structures, and a shape selected from the group of a rectangle, triangle, rhomboid, arc and combinations thereof. 20
6. The covering according to any one of claims 1 to 5 **characterized in that** the beams (3) are provided with an additional mechanism for shifting them to the extreme position before moving the covering to the open position of a pool (1). 25
7. The covering according to any one of claims 1 to 6 **characterized in that** the top part of the covering is at the level of a surrounding plane (2). 30
8. The covering according to any one of claims 1 to 7 **characterized in that** the covering contains at least two parts located above one another in the opened position of the pool (1). 35
9. The covering according to any one of claims 1 to 8 **characterized in that** the covering is not walkable, with the top part of various shapes selected from the group of arched, beveled, and combinations thereof, to increase the static load capacity of the structure and/or to drain water from the top part. 40

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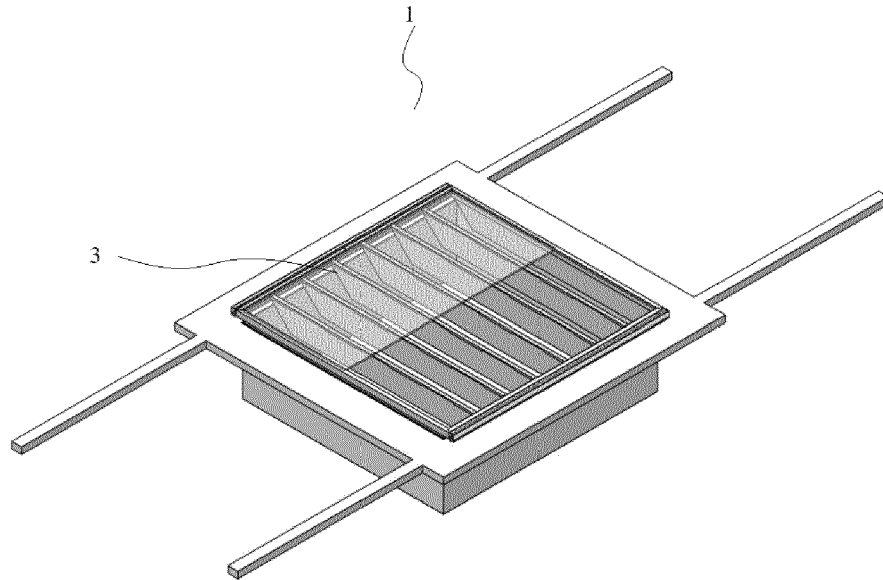


Fig. 1

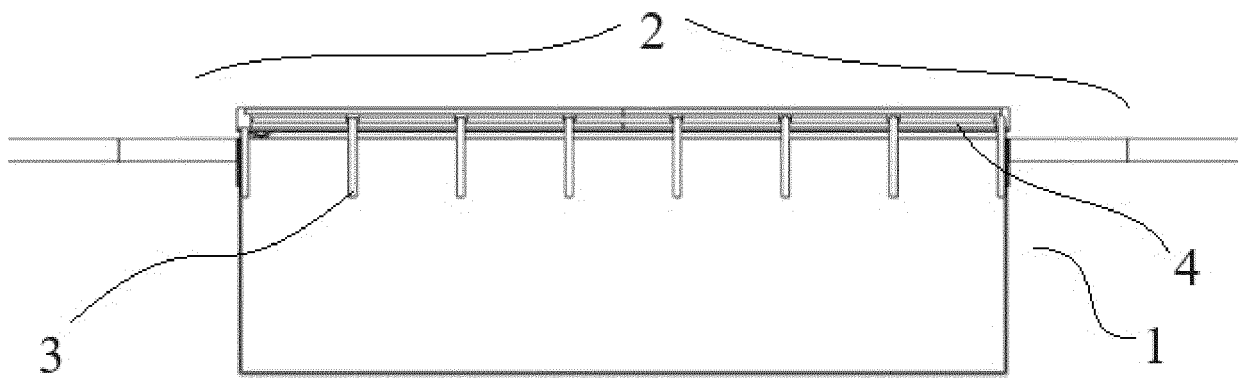


Fig. 1A

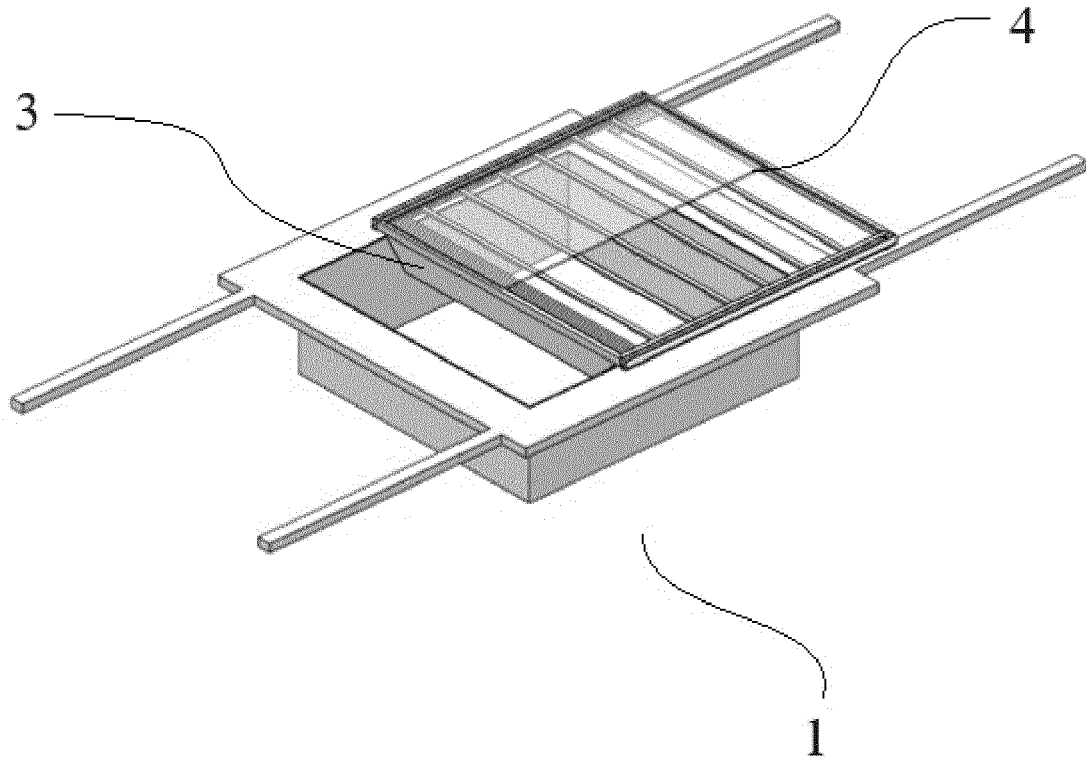


Fig. 2

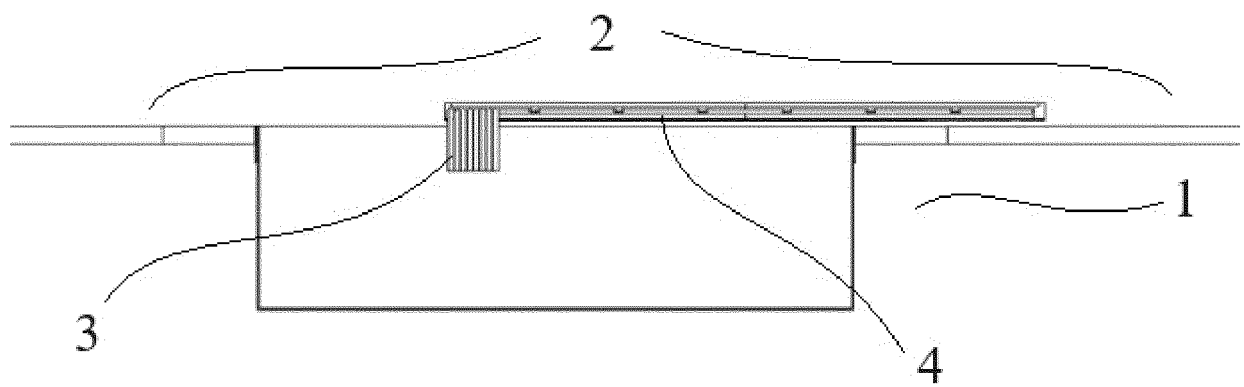


Fig. 2A

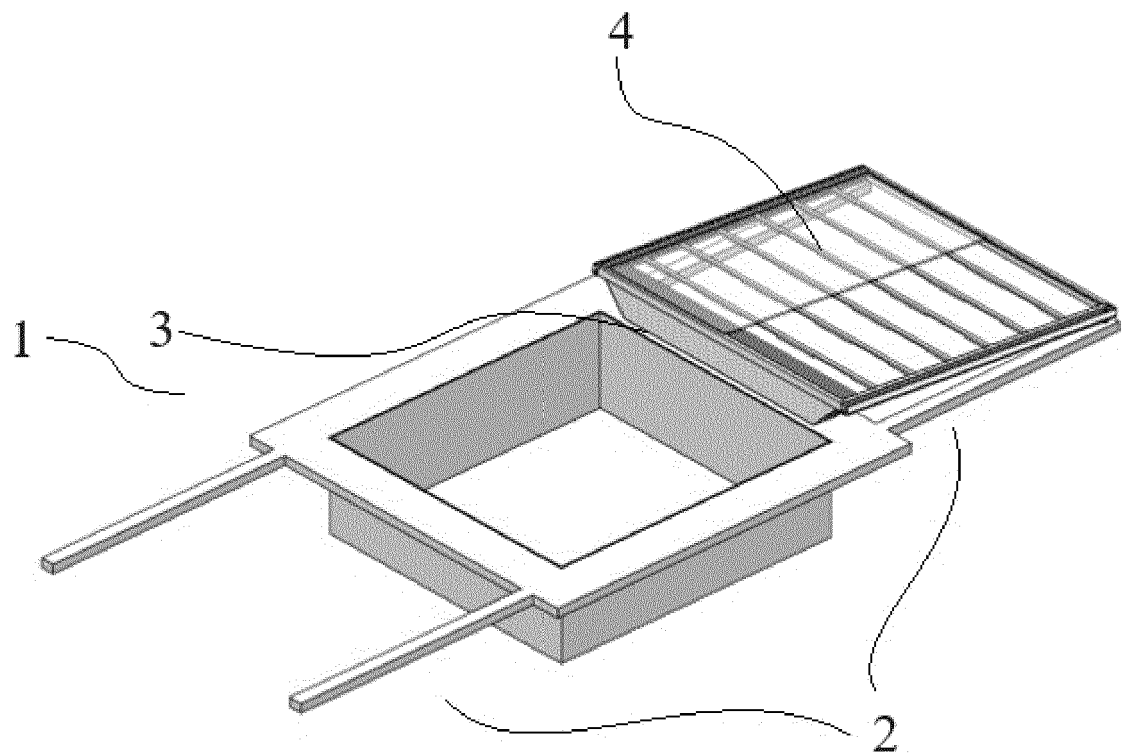


Fig. 3

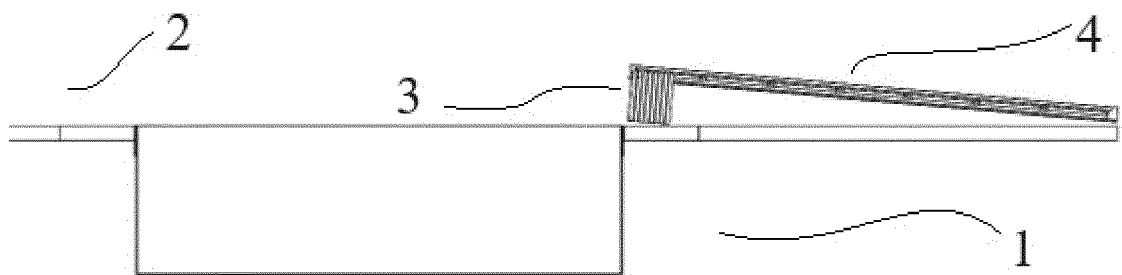


Fig. 3A

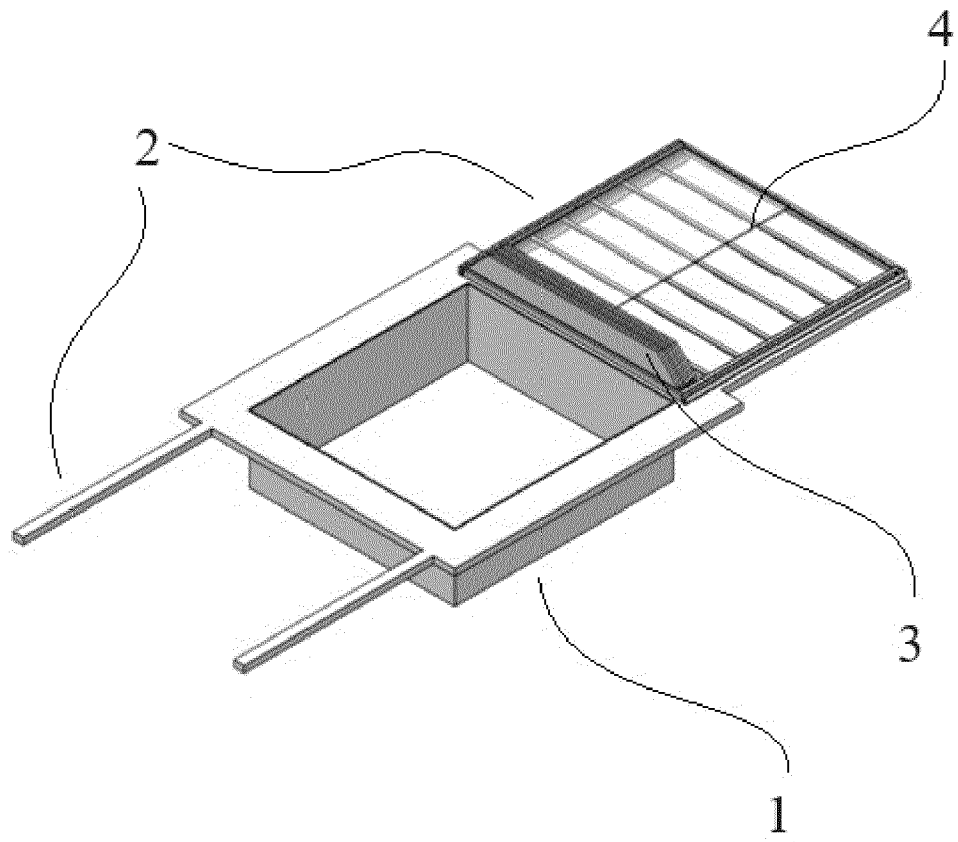


Fig. 4

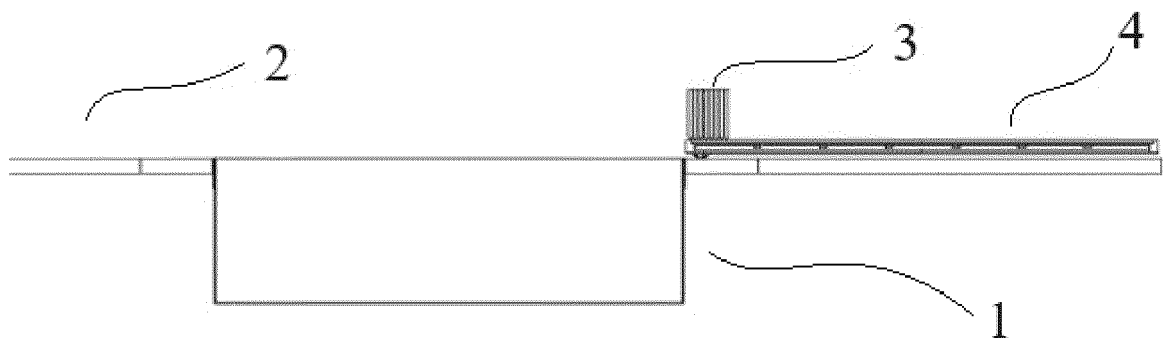


Fig. 4A

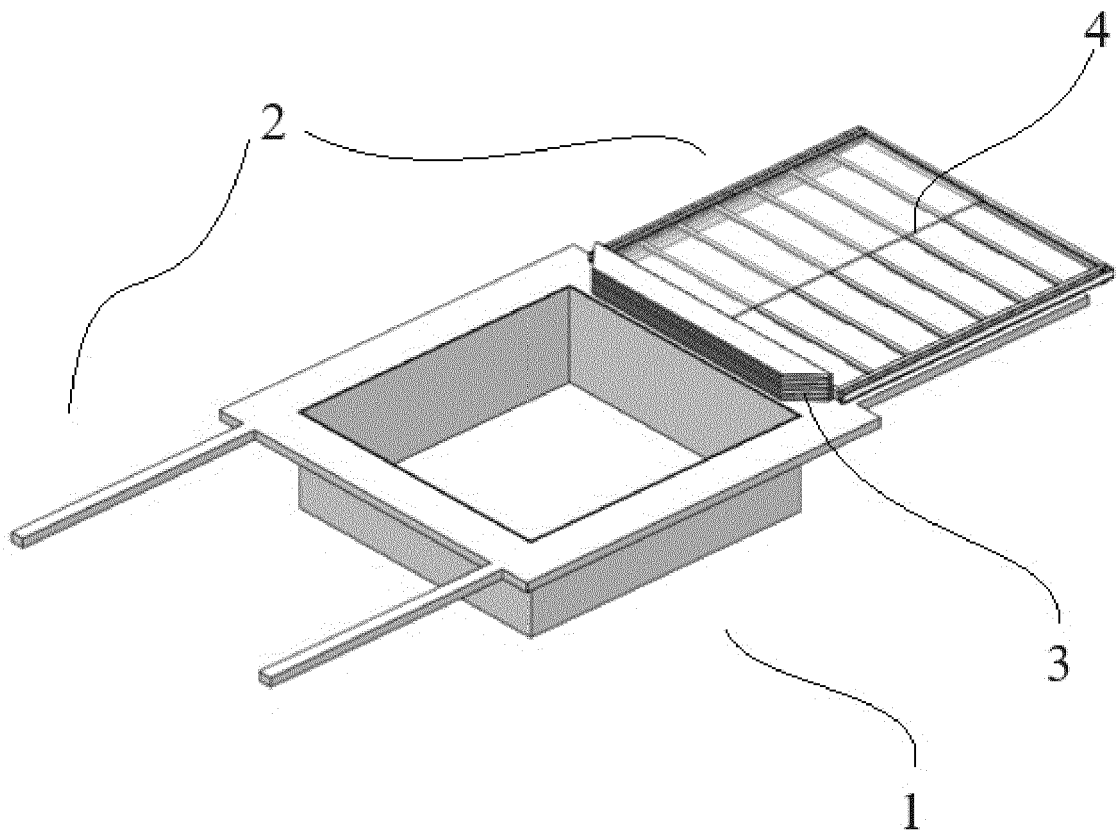


Fig. 5

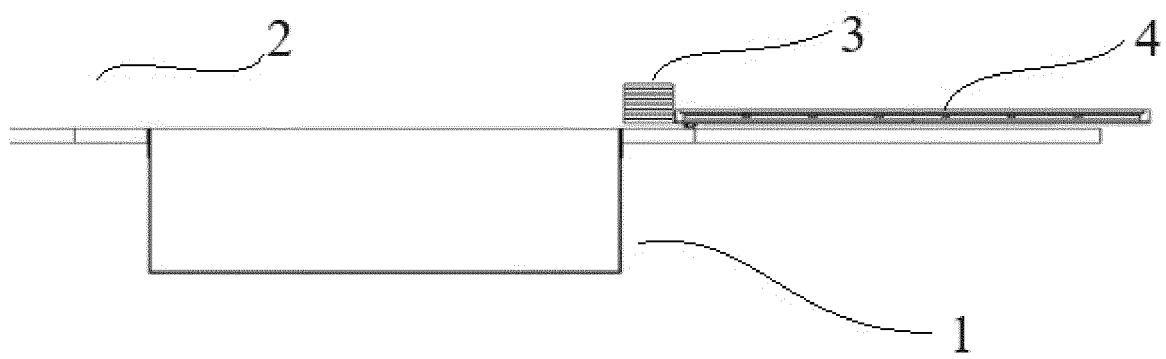


Fig. 5A

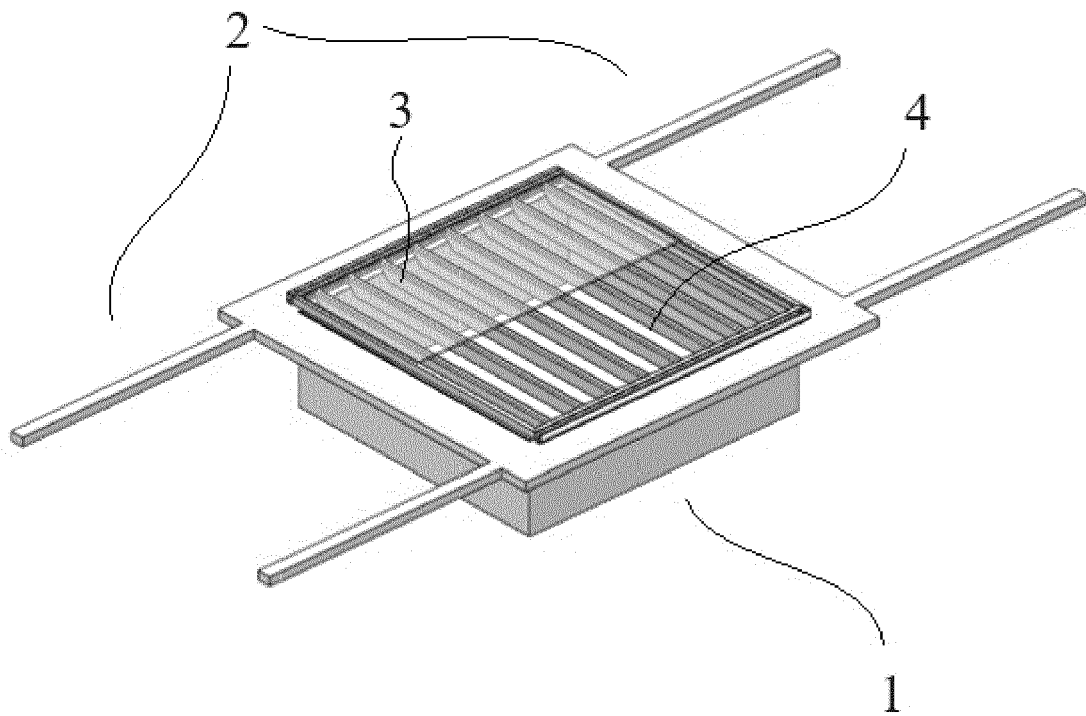


Fig. 6

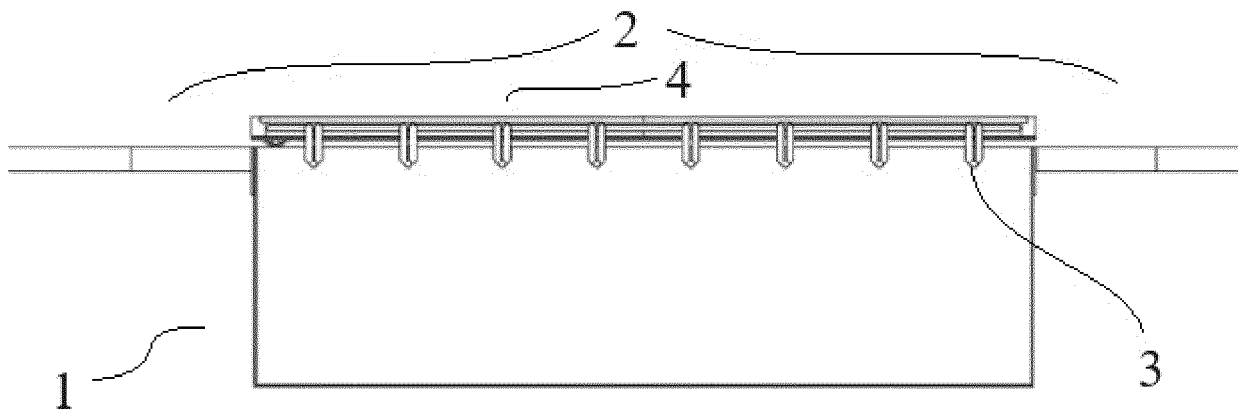


Fig. 6A

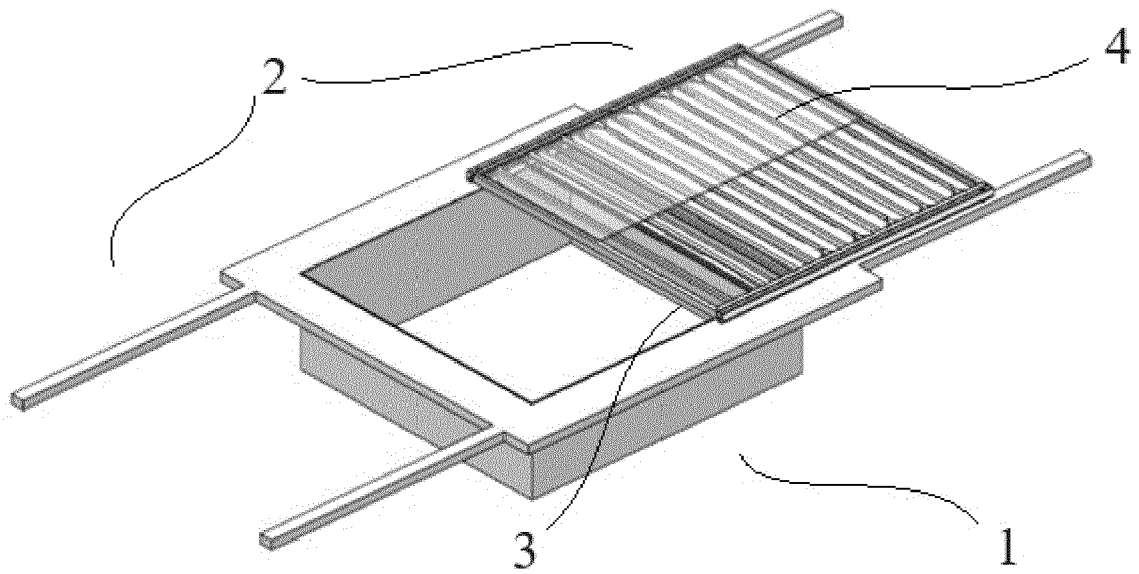


Fig. 7

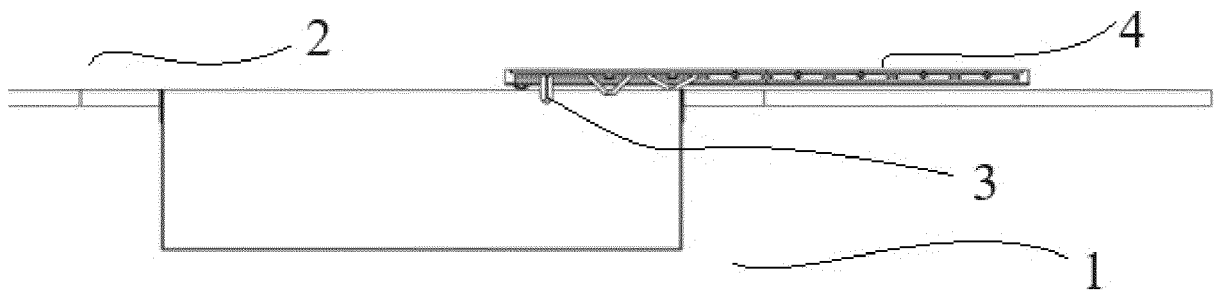


Fig. 7A

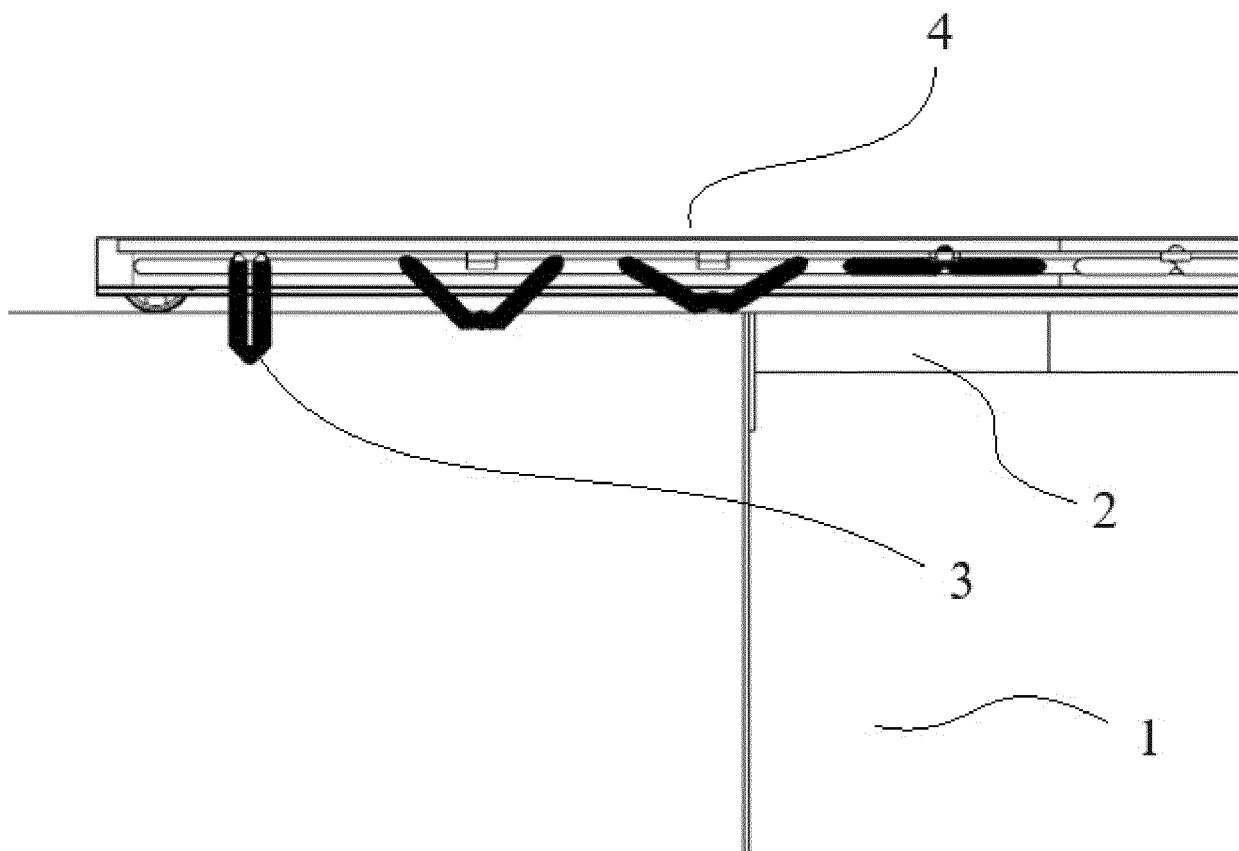


Fig. 7B

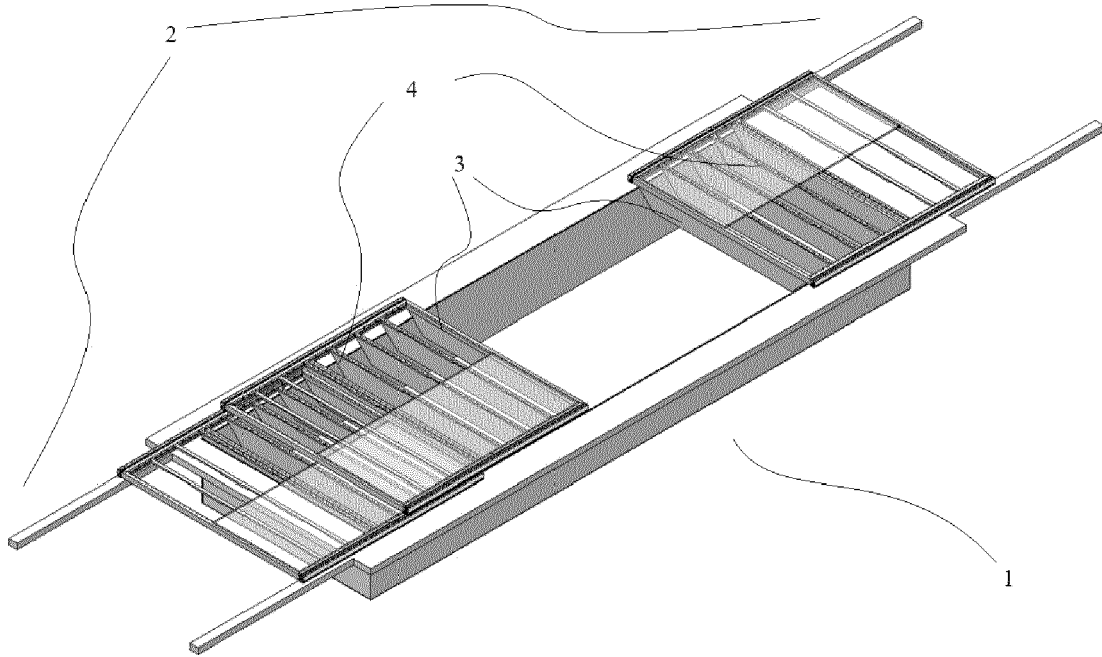


Fig. 8

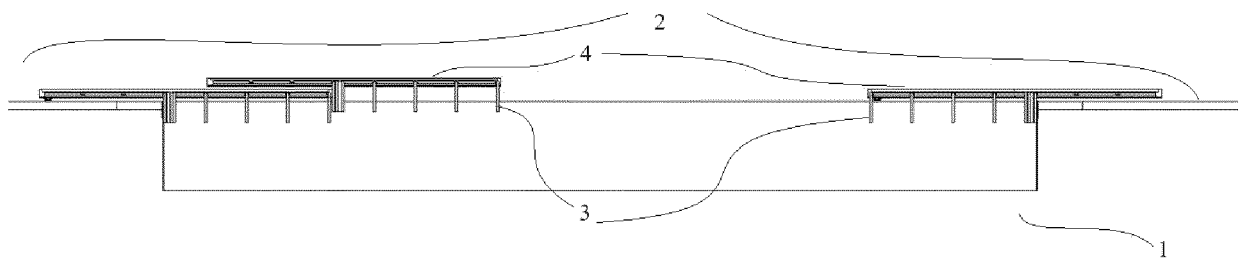


Fig. 8A

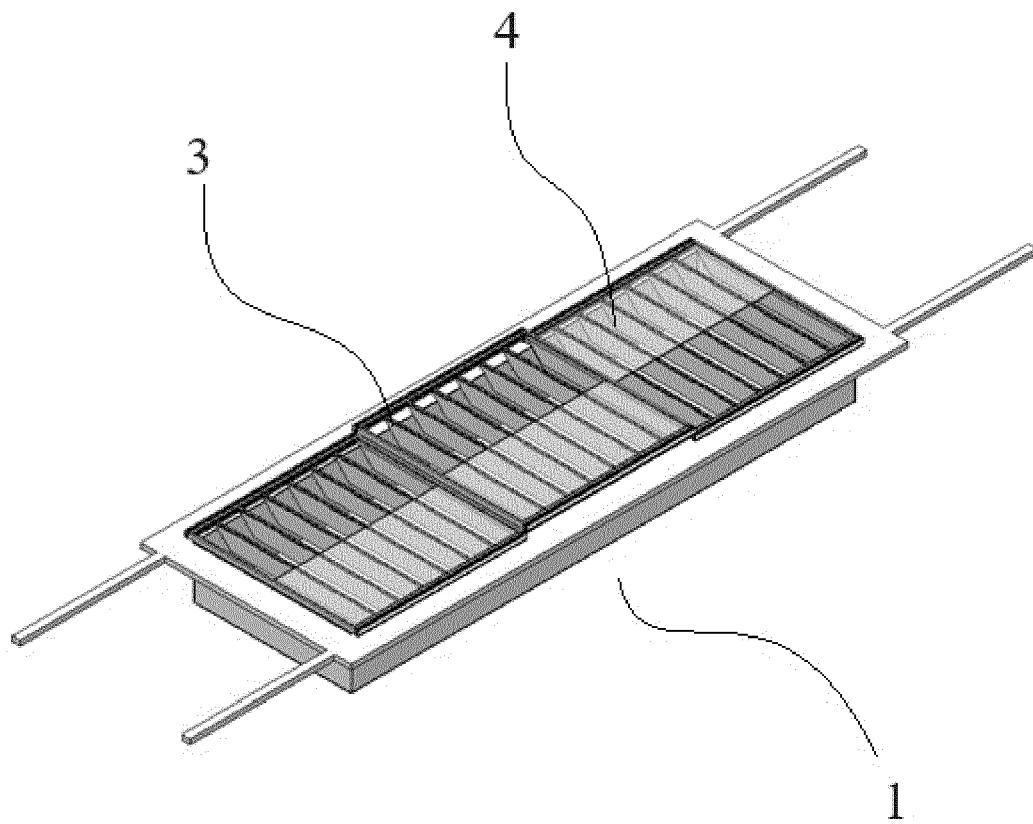


Fig. 9

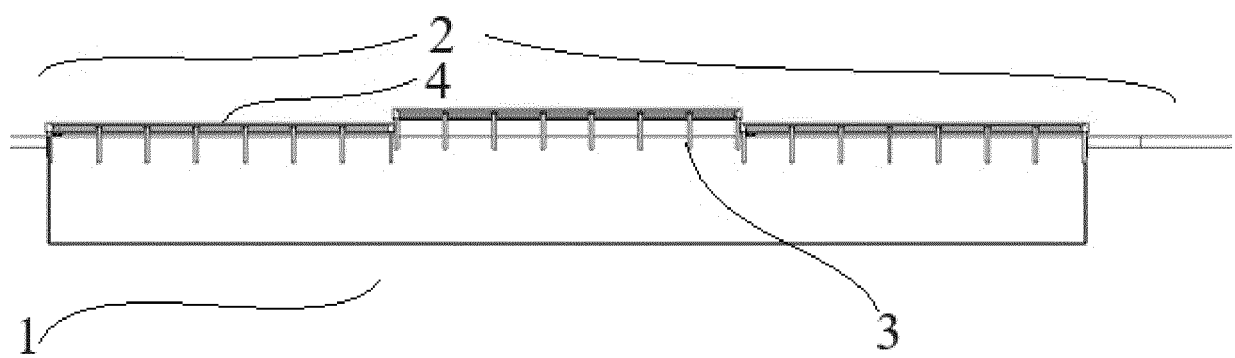


Fig. 9A



EUROPEAN SEARCH REPORT

Application Number

EP 24 16 8340

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	FR 2 859 313 A1 (LAMBEY JACQUES [FR]) 4 March 2005 (2005-03-04) * page 1, line 1 - page 4, line 26; figures 1-6 *	1-9	
A	EP 2 644 806 A1 (NEO PROTEC [FR]) 2 October 2013 (2013-10-02) * abstract; figures 1-7 *	1,4,8	
			TECHNICAL FIELDS SEARCHED (IPC)
			E04H E04F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 September 2024	Examiner Stefanescu, Radu
CATEGORY OF CITED DOCUMENTS			
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 24 16 8340

5 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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18-09-2024

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