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(54) **MOBILE BATHING SITE**

(57) The object of the invention is a mobile bathing site separating a piece of surface water from the other part of a lake or watercourse, used by a large number of bathers, consisting of segments and curtains. This type of construction is used in places with bathing sites or places occasionally used for bathing, such as in cases of emergency pollution during the bathing season as well as in reservoirs without designated bathing sites. It also allows to use a bathing water purification method.

A mobile bathing site having barrier segments with a base and shielding elements, characterized by the fact that a shielded segmental curtain is attached to the brackets with one end, which with the other end is embedded in the bottom zone, the brackets being barriers 10 in an amount depending on the length of the bathing site 1, in pairs connected in the upper zone by a connector 13 attached to the barriers 10, and with the other end embedded in the thrust plates 6, which are plates embedded in the bottom of the reservoir.

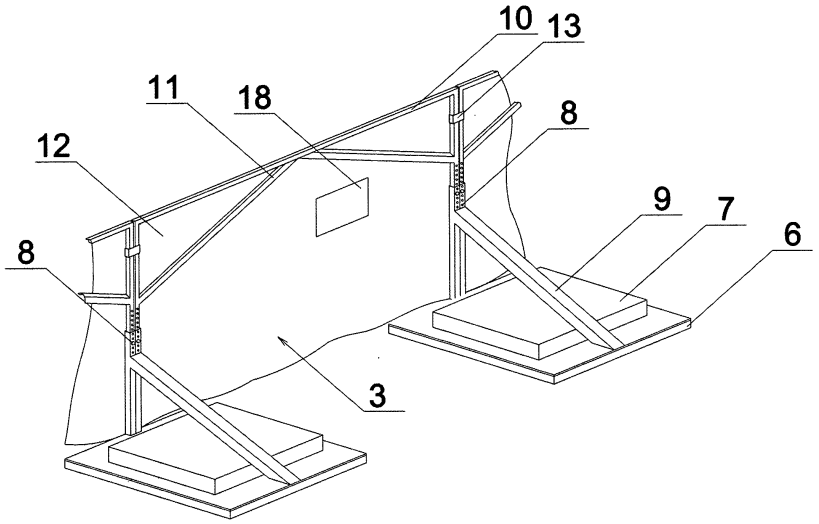

Fig. 2

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Description

[0001] The invention is a mobile bathing site, consisting of segments and curtains, separating a piece of surface water from the other part of a lake or watercourse, used by a large number of people. This type of construction is used in places with bathing sites or places occasionally used for bathing, such as in cases of emergency pollution during the bathing season as well as in reservoirs without designated bathing areas. It also allows to use a bathing water purification method.

[0002] A mobile bathing site separating a fragment of surface water from the other part of a lake or watercourse, consisting of segments and curtains, meets the requirements for bathing sites and places occasionally used for bathing contained in the Act of July 20, 2017 i.e. the Polish *Water Law* (Law Gazette 2021, Pos. 2233, 2368, 2022, Pos. 88, 258, 855). According to Article 47. 1. a bathing site may operate if its water quality is classified at least as sufficient in accordance with Article 344.1.2).

[0003] If the bathing water quality has been classified as inadequate in accordance with Article 344.1.2, the bathing site may operate provided that measures are taken to, among other things: improve water quality and prevent, reduce, or eliminate the causes of bathing water pollution.

[0004] The results of water quality tests in lakes published by the environmental protection inspectorates indicate poor quality of inland waters in Europe. Excessive eutrophication of the water and algal and cyanobacterial blooms occurring in the summer prevent recreational use of many lakes, reservoirs, and rivers for recreational purposes, and existing bathing site are temporarily closed due to the appearance of pollutants, mainly blue-green algae, which are dangerous to human health.

[0005] According to the statutory definition, a bathing site is understood as a separate and marked fragment of surface waters designated by the municipal council and used by a large number of bathing persons, provided that a permanent bathing prohibition has not been issued for this site; a bathing site is not: a swimming bath, a swimming pool or spa pool, a closed body of water subject to treatment or use for therapeutic purposes, an artificial, closed body of water, separated from surface water and groundwater (Act of July 20, 2017 i.e. the Polish *Water Low* (Law Gazette 2021, Pos. 2233, 2368, 2022, Pos. 88, 258, 855).

[0006] The separation of bathing sites is usually done by constructing permanent platforms anchored in the bottom of the reservoir with steel pipes or wooden piles. The load-bearing structure of such platforms remains in the reservoir throughout its useful life, and only the user-walked plating is dismantled. Another type of bathing site separation is the use of floating jetties, usually consisting of modules that function as floats, which float on the surface of the water and are anchored to the bottom or moored to fixed points on the waterfront. The water in this type of bathing site is not subject to treatment, and its cleanliness depends on the water quality of the entire body of water.

[0007] Water purification in the described invention can be performed in accordance with the technology contained in patent PL223969 entitled *Method of Adapting Fragments of Reservoirs and Watercourses for Recreational Purposes* and patent No. PL241043 entitled *Bathing in Cut off Fragments of Reservoirs and Watercourses for Recreational Purposes and a System for Supplying, Purifying and Heating Water.* Water treatment then takes place in a treatment system located in a mobile container on land near the bathing site. Water intake and treatment take place continuously throughout the bathing water's use for recreational purposes. Water intake may be via a pumping station of known design, located at the bathing site. Water is drawn through a piping system connected to pumps that draw water in and pump it to the treatment facilities. Water treatment is carried out in a system of purification equipment, which includes treatment in a geological bed or sand and gravel filter, aeration, ozonation, chemical treatment, UV irradiation, and possibly biological treatment. The first stage of treatment of water drawn from a separate bathing site includes treatment of water from sediment and solid contaminants. The type and sequence of individual devices in the purification battery can vary and depend on the degree and type of contaminants present in the water body. In an advantageous variant of the method, according to the invention, a monitoring station for contaminants in the abstracted water is located between the water intake point and the battery of treatment equipment, and the information obtained from such monitoring is transmitted to a control system that controls the operation of the treatment equipment in order to optimize the treatment process. Moreover, the purified water can be monitored in the second monitoring block from which information is directed to the control system. Thanks to the information about the water condition before treatment and the condition of the water after treatment, it is possible to optimally control the treatment process by switching individual treatment devices on or off. After cleaning, the water is drained back to the separate zone from which it was taken. The rate of water exchange is selected according to the characteristics of the bathing site.

[0008] A conveyor or transporter is a basic component of a belt conveyor equipment. Depending on the construction and type of working covers and the working environment of the belt, there are several categories of conveyor belts used in conveying equipment for granular and loose materials, in mining, in the chemical industry, when loading and unloading vehicles, and in mineral mines. Depending on the intended use, one can distinguish between fabric-rubber conveyor belts with polyamide-polyester fabric spacers or polyester conveyor belts with a steel cord core. Most often, these are conveyor belts with a multi-layered core design, usually two-, three-, or four-geared. On the core of the conveyor belt, rubber covers with appropriate useful parameters adapted to transport

the corresponding material group are applied in the production process. These belts are produced in different widths and thicknesses with different cores, such as polyamide-polyester fabric core conveyor belt, polyester fabric core conveyor belt, steel cord core conveyor belt, and others. In the case of creating curtain segments separating a bathing site from the other part of a lake or watercourse, the transmission belt can be used as a waste material, for example, from:

- mineral and aggregate mines,
- sand and gravel plants,
- cement and lime plants,
- construction industry and construction of transportation equipment,
- recycling and composting enterprises,
- wood processing enterprises and sawmills,
- agricultural plants.

[0009] The essence of the invention, which is a mobile bathing site, having barrier segments with a base and cover elements, is that to the supports with one end a cover segmental curtain is attached, which with the other end is embedded in the bottom zone, where the supports are barriers in an amount depending on the length of the bathing site, in pairs connected in the upper zone by a connector attached to the barriers, in turn, with the other end are embedded in thrust plates, which are plates embedded in the bottom of the reservoir. The barriers have telescopic length regulators, which are permanently embedded in the retaining plate, closed sections that are the vertical element of the barriers, with connecting holes for the blocker, in which the lower ends of the barriers with connecting holes for the blocker are located, with the diagonal elements of the barriers, located with one end on the retaining plate, and the other end are connected to the vertical element of the length regulator barrier. The barriers are connected in pairs by at least one connector, with the barrier having a reinforcing element. In addition, weights are embedded on the thrust plates, moreover, the thrust plate on the underside has stabilizing elements in the ground in the form of a perimeter outlet and/or vertical bars, and/or cones, and/or a driven element, which are located advantageously on the outside of the bathing site and/or the inside, and/or on both sides of the bathing site or inside the bathing site structure. Furthermore, the curtain consists of segments in a number selected according to the overall length of the bathing site and its height, while the curtain segments are connected to each other in a known manner: advantageously by rope through fittings, or by means of Velcro, and the curtain is made advantageously of coated synthetic plastic fabric or steel or rubber, with each curtain segment connected to a buoyancy element filled with a material with a density lower than that of water or air, and advantageously to a loading element, as well as advantageously to a vertical stabilizing element, with an emergency shutter located in the curtain segment, while successive vertical stabilizing elements are connected to each other by oblique stabilizing elements. The buoyancy element made of flexible material is made advantageously of polyethylene or fiberglass or metal and has a valve for air injection or a Velcro shutter for filling and emptying with solid materials with a density lower than water, or the buoyancy element is filled with a honeycomb material. In addition to this, a curtain segment is attached to the buoyancy element in a known manner, comprising segments or parts of the basic element, the parts of the basic element being connected to each other in a known manner advantageously by cord connections, either by Velcro, or by a zipper, or by a cord connection with fittings, additionally, the vertical stabilizing element and the diagonal stabilizing element are connected to the segment advantageously either by Velcro or by cords, the height of the individual segments of the curtain being approximately equal to the depth of the bathing site in the specified zone, and the individual segments of the curtain being permanently disconnectedly fixed in a known manner. In addition, driven elements of rigid material advantageously of metal or wood or fiberglass are attached to the curtain from the side of the lake or watercourse, which pass through the vertical through-hole of the loading element, the driven elements being attached advantageously to the curtain in a known corded manner with fittings or threaded, furthermore, the segment is connected to a vertical stabilizing element, which is approximately cylindrical in shape and has a valve for filling and a valve for draining the ballast material, and has an shutter for draining located in the wall of the vertical stabilizing element. The inclined stabilizing element has a valve for filling and a valve for emptying ballast material, as well as a shutter for emptying ballast material, located in the wall of the inclined stabilizing element, and is connected to the loading element, with the loading element advantageously having the shape of a horizontal cylinder and having a valve for filling ballast and a valve for emptying ballast, while the individual loading elements are connected to each other in a known manner. Besides, a part of the curtain has advantageously a loading element in the shape of a cuboid with a ballast filling valve and a ballast emptying valve and a vertical through hole for a driven element, in addition, the loading element constituting the seat has an air chamber with air nozzles as well as a valve for filling the seat and a valve for emptying the seat, and located in the frontal site an shutter advantageously with Velcro, whereby the air chamber is located in the upper zone of the seat, in addition, the bathing site is formed by double and oppositely located barriers, connected to each other advantageously by lattice elements on which the platform is mounted.

[0010] It is also advantageous if the curtain, which is a shielding element, is made up of transmission belt segments connected to each other, two of which in the lower zone are bent opposite to each other, and connected to each other by vertical walls, while the horizontal sections of each bent section are attached to the perpendicular

of the transmission strip, the bent curtain segments being connected to each other with a lateral offset advantageously up to 0.25 of the width of the curtain segment. The interconnection of all elements of the curtain segment is a bolted, glued, or vulcanized connection. In addition, an shutter is located in the vertical parts of the curtain segment, and a spatial loading element is located on the horizontal part of the curtain segment, besides, the horizontal parts of the transmission belt have a through hole for an anchoring element, and the curtain segment is connected to a buoyancy element, while the buoyancy element made of flexible material has a chamber for a filler with a density less than that of water with a valve for filling and emptying the buoyancy material, in addition, the loading element constituting the seat has an air chamber with air nozzles, as well as a valve for filling the seat and a valve for emptying the seat, and a Velcro shutter located in the front zone, with the air chamber located in the upper zone of the loading element.

[0011] Thanks to the solution according to the invention, the following technical and operational effects were obtained:

- the ability to quickly build a bathing site or to separate a place occasionally used for bathing in any watercourse or body of water,
- the ability to maintain the proper quality of bathing water during the bathing season,
- the ability to maintain the proper quality of water in a place occasionally used for bathing,
- the possibility of emergency treatment of water in the contaminated or occasional bathing site.
- the construction of the bathing site ensures its safe use,
- the possibility of using the elements of the bathing site structure as a recreational zone, such as a jacuzzi,
- the possibility of using waste transmission belt,
    - the possibility of a quick and cheap separation of the bathing site from the other part of a lake or watercourse,
    - possibility of transport to the destination on transport vehicles, e.g. in a container arrangement.

[0012] The object of the invention in an exemplary, but not limiting, execution is visualized in the schematics in the figure, where fig. 1 shows a general diagram of a bathing site enclosed by mobile barrier segments, fig. 2 a schematic of a single barrier segment, fig. 3 shows a diagram of the connection of a vertical element with a barrier, fig. 4 a schematic of a barrier segment with a curtain segment, fig. 5 a schematic of the buoyancy element, fig. 6 a schematic of the buoyancy element mounted on the barrier segment, fig. 7 shows an example of the installation of the curtain segments, fig. 8 shows curtain segments with adjustable height, fig. 9 a schematic of additional reinforcement of the curtain segment, fig. 10 a schematic of a vertical and oblique stabilizing element, fig. 11 a schematic of the loading element, fig. 12 shows the ballast chamber with the basic element attached in the center, fig. 13 shows a ballast chamber in the shape of a cuboid, fig. 14 shows a schematic of a single barrier with an additional loading element, fig. 15 shows the thrust plate in bottom view, fig. 16a shows a schematic of the installation of the transmission belt curtain, fig. 16b shows the method of securing the transmission belt from changing position, fig. 17 shows the transmission belt segment in the frame, fig. 17a shows the method of mounting the transmission belt in the frame to the bath structure, fig. 17b shows the frame and transmission belt, and fig. 18 shows a bathing site with curtain segments separating the bathing site from the lake's other part using double barrier segments.

[0013] A feature of a mobile bathing site of segmented construction separating a section of surface water from the other part of a lake or watercourse, consisting of segments and curtains, is the use of lightweight, easily assembled elements that, when connected, form a curtain separating the bathing site from the other part of a lake or watercourse. These elements are made so that they can be easily transported by wheel. A mobile bathing site is built using the existing jetties or other elements of the existing bathing equipment. The lightness of the structure does not require any interference with the ground or its foundation in the bottom, and thus does not interfere with sediments and does not pose a risk of turbidity of the water in the reservoir. The assembly of the subject of the invention is quick and technically simple, which allows to minimize the costs of its construction. At the end of the bathing season, the mobile bathing site can be dismantled and the materials used can be reused without endangering the natural environment. The construction of the bathing site allows for minimal interference with the water body, allowing water to be exchanged between the bathing site and the lake or watercourse, and bathing water to be treated at the site, thus contributing to the improvement of water quality in the lake or watercourse. Depending on environmental and construction conditions, it is necessary to choose a known way to protect against wave-induced water pressure advantageously by making emergency screens that allow water to flow through. The flexible curtain adjusts to the water level in the reservoir or watercourse, making this type of construction resistant to fluctuations in the water table. In the invention, it is advantageous to use a loading element, which increases the watertightness of the bathing site at the curtain-bottom interface; it also keeps the curtain vertical and prevents it from moving. Instead of a loading

element, any load such as a steel chain can be used.

[0014] Fig 1 shows a bathing site 1 with a segmented curtain 3 mounted on a platform of known construction. The curtain 3 separates the bathing site 1 from the other part of the lake or watercourse 2. The curtain 3 is constructed of coated fabric of synthetic materials, steel, rubber, etc., and consists of a suitable number of segments 12 stretched over vertical barrier element 8. The number of segments 12 is selected according to the overall length of the curtain 3 and its height. The segments 12 of the curtain 3 are connected to each other in a known way, for example, by stringing through the fittings and using Velcro. The curtain 3 is mounted in a known way to the supporting structure, e.g. with hooks, with Velcro, with a string connection. Depending on the hydrological conditions in the reservoir or watercourse, it is advantageous to stabilize the structure of the bathing site 1 with lashings 5 anchored to the bottom, e.g. by a concrete weight 4, placed on the downstream side of the lake or watercourse 2.

[0015] Fig. 2 shows a single barrier 10 segment 12 with a thrust plate 6 positioned at the bottom of the reservoir holding the bathing site structure 1 upright. A weight 7 is set on the thrust plate 6 to increase the friction between the thrust plate 6 and the bottom of the reservoir. Attached to the thrust plate 6 in a known manner, such as by welding, are a vertical barrier element 8 and sloping barrier element 9 that form the base structure of the thrust plate 6. A barrier 10 containing reinforcing elements 11 is inserted into the vertical barrier element 8. The number of reinforcing elements 11 and sloping barrier element 9 is selected according to the characteristics of the bathing site 1. Each barrier 10 slides into two vertical barrier elements 8. Two more barriers 10 are connected by vertical barrier elements 8. On the barrier 10 is placed a segment 12 of the curtain 3, which restricts the flow of water between the bathing site 1 and the lake or watercourse 2. The barriers 10 are additionally connected to each other by a connector 13 in a known way, such as a twisted connection. The height of the barriers 10 is selected according to the depth and shape of the bottom.

[0016] Fig. 3. shows in detail the connection of the vertical barrier element 8 with the barrier 10. In the thrust plate 6 and the barrier 10 there are connecting holes 14, which allow, with the help of the blocker 14', to precisely adjust the extension of the barrier 10. This is advantageous due to the varying depths at successive locations where the thrust plate 6 is placed on the bottom of the reservoir. The segments of the barrier 10 are permanently disconnectedly fixed in a known way by means of a connector 13, for example, by twisting. A segment 12 of the curtain 3 separating the bathing site 1 from the lake or watercourse 2 is attached to the barrier 10.

[0017] Fig. 4. shows a basic schematic of the barrier 10 with the segment 12 of curtain 3. It consists of segment 12 of the curtain 3, buoyancy element 15, loading element 16, vertical stabilizing element 17', and oblique stabilizing element 17". The necessary element for the operation of the bathing site 1 is curtain 3, and the others are optional and selected according to the type of bathing site 1 and the conditions of the reservoir or watercourse. Segment 12 of curtain 3 is mounted in a known way to the structure of bathing site 1, for example, with hooks, Velcro, lacing connection. In the segment 12 of the curtain 3, there is an emergency shutter 18 operating when the allowable water pressure on the bathing site 1 is exceeded and prevents its destruction. It is advantageous to include loading element 16, as it stabilizes the segments 12 of the curtain 3 and reduces water exchange at the curtain-bottom interface. The vertical stabilizing element 17' and the oblique stabilizing element 17" help maintain the shape of the segment 12 of curtain 3 by increasing its rigidity.

[0018] It is advantageous to use the buoyancy element 15, which keeps the segment 12 of curtain 3 vertical, increases the stability of the structure and enhances the safety of users' use of bathing site 1.

[0019] The buoyancy element 15 takes the form of a horizontal chamber of any shape, filled with a material with a density less than that of water or air.

[0020] Fig. 5. shows a schematic of the buoyancy element 15. By filling the chamber of the buoyancy element 15 with a material with a density lower than that of the water or air, the element floats on the surface of the water keeping the curtains 3 vertical and thus restricting the exchange of water between the bathing site 1 and the depth of the lake or watercourse 2. The buoyancy element 15 is made of an elastic material, e.g. polyethylene fabric. The buoyancy element 15 is filled and deflated in a known manner e.g. via a valve 19 for the injection of air or via a Velcro shutter 20 for filling and emptying with solids less dense than water. In another variation, a honeycomb material containing a lot of small air chambers that reduce the risk of sinking the structure in case of damage is used for filling. The volume of the chamber of the buoyancy element 15 is selected according to the weight of the segment 12 of the curtain 3 and the hydrological conditions present in the reservoir or watercourse. The buoyancy elements 15 increase the stability of the bathing site 1. In another variant, the buoyant element 15 is made of an elastic material, e.g. glass fiber or metal, which thus strengthens the structure of the segment 12 of the curtain 3. The buoyancy element 15 is attached in a known way, e.g. with Velcro, zipper to the top of the curtain 3.

[0021] A curtain 3 is required to separate the bathing site 1, as shown in fig. 6. Depending on the type of construction of bathing site 1, curtain 3 may be made up of segments 12 of curtain 3, or it may be combined in addition with a buoyancy element 15 and/or loading element 16. The curtain 3 is attached to the bathing site 1 permanently disconnectedly in a known manner shown in fig. 7. The individual segments 12 of the curtain 3 are connected to each other in a known way, such as with string connections 21', Velcro connections 21", zipper connections 21" or tarpaulin connections 21"". It is advantageous

to attach a buoyancy element 15 to the curtain 3 in order to reduce the load on the bathing site 1 and to prevent water from overflowing through it.

[0022] The number of segments 12 of the curtain 3 is selected according to the length of the perimeter of the bathing site 1.

[0023] Depending on the environmental and construction conditions, it is necessary to choose a known way to protect against wave-induced water pressure, for example, by making emergency shutters 18 that allow excess water to flow. The emergency shutters 18 can be opened manually or automatically during high pressure differences on both sides of the segment 12 of the curtain 3.

[0024] Depending on the peculiarities of the reservoir or watercourse in which the bathing site 1 is located, segments 12 of the curtain 3 with adjustable height, shown in fig. 8 are used. Segment 12 of the curtain 3 does not have a fixed vertical stabilizing element 17' and a oblique stabilizing element 17", but they can be pinned in a known way, such as with Velcro or string to form curtain 3 as separate modules. In another variation, the height of the individual segments 12 of the curtain 3 is selected according to the depth of the bathing site 1 by assembling these segments from a buoyancy element 15, a loading element 16, and an appropriate number of parts of the basic element 22, of which segment 12 of the curtain 3 is composed. The parts of the basic element 22 of segment 12 of the curtain 3 are elements with heights and shapes adapted to the depth and slope of the bottom at the point of their attachment to the bathing site 1. The individual segments 12 of the curtain 3 are permanently disconnectedly fixed in a known manner advantageously by means of Velcro connections 21", since the elements may overlap differently due to angular differences in the parts of the basic element 22 of the segment 12 of the curtain 3.

[0025] In fig. 9. the possibility of additional reinforcement of segment 12 of curtain 3 is shown. A driven element 23 of rigid material (e.g., metal, wood, fiberglass) was advantageously used on the side of the lake or watercourse 2, which allows additional reinforcement of segment 12 of curtain 3. The driven element 23 is attached to the segment 12 of the curtain 3 in a known manner, e.g. laced, threaded. For the use of such a driven element 23 in the loading element 16, a vertical through-hole 24 is provided through which the driven element 23 passes.

[0026] Fig. 10 shows another variation of stiffening the segment 12 of the curtain 3 by injecting a mixture of sand and water into the vertical stabilizing element 17'. Filling of the vertical stabilizing element 17' is carried out with a filling valve 25' and a emptying valve 25". During filling, a mixture injection hose, not shown in the figure, is connected to the filling valve 25', and the emptying valve 25" is open. When the vertical stabilizing element 17' is sufficiently rigid, the filling valve 25' and the emptying valve 25' are closed. The emptying of the vertical stabilizing member 17' is advantageously accomplished by unfastening the emptying shutter 26 located in the wall of the vertical stabilizing element 17'. The emptying shutter 26 unzips in a known way, such as through Velcro. In addition, the structure of the segment 12 of curtain 3 can be strengthened by adding an oblique stabilizing element 17', which is filled and emptied in the same manner as the vertical stabilizing element 17' with a filling valve 25' and an emptying valve 25". In another variation, the vertical stabilizing element 17' and the oblique stabilizing element 17" are made of a material of suitable rigidity and attached in a known way to the segment 12 of the curtain 3, for example, by means of Velcro. The size of the vertical stabilizing element 17' and the size of the oblique stabilizing element 17" are selected according to the dimensions of the curtain 3 and are applied according to the hydrological conditions of the reservoir or watercourse.

[0027] The lower part of the segment 12 of the curtain 3 advantageously has a loading element 16 of any shape, such as a horizontal cylinder. A detailed diagram of the loading element 16 is shown in fig 11, in which a ballast filling valve 27' and a ballast emptying valve 27" are provided. A mixture of sand and water is injected through the ballast filling valve 27', acting as a load and stabilizing the segment 12 of the curtain 3. During filling, the ballast emptying valve 27" is opened to allow water to flow out of the loading element 16, resulting in compaction of the ballast. Emptying of the loading element 16 from the sand-water mixture is advantageously accomplished by opening it in a known manner, e.g., by unfastening the Velcro fasteners placed in the loading element 16 (not shown in fig.). It is possible to apply any load to the loading element 16, for example, by filling it with a steel chain. The loading elements 16 can be connected to each other in a known way, e.g., by Velcro.

[0028] Depending on the hydrological conditions and the cohesiveness of the sediments present in the reservoir or watercourse, the optimum shape of the loading element 16 and its weight should be selected so as not to additionally load the bathing site 1. Another variation uses a loading element 16 in the shape presented in fig. 12. In this case, the segment 12 of the curtain 3 is fixed in the familiar way in the center axis of the loading element 16, which increases the stability of the structure and its resistance to waving. In addition, the loading element 16 can provide a seat 28 for bathers presented in fig 13. The size of the seat 28 is selected to allow safe and comfortable use. The seat 28 is filled advantageously by injecting a mixture of sand and water through the seat filling valve 29' and the seat emptying valve 29". A mixture of sand and water is injected through the seat filling valve 29', providing a load and stabilizing the segment 12 of the curtain 3. During filling, the seat emptying valve 29" is opened to allow water to flow out of the seat 28, resulting in the compaction of sand in the seat 28. Emptying the seat 28 of the sand-water mixture is advantageously accomplished by opening it in a known manner, such as by

unfastening the seat emptying valve 29" located in the seat 28. Advantageously, the eat emptying valve 29" is placed on the side of the seat 28, which will reduce the likelihood of its opening by users.

[0029] In another variation, shown in fig. 13, the loading element 16 includes an air chamber 30 located in the upper part acting as aeration for the bathing site 1 and providing a form of jacuzzi for users. The diameter and number of aeration nozzles 31 are selected according to the parameters of the bathing site 1 and the size of the seat 28.

[0030] Fig. 14. shows a diagram of the segment 12 of the curtain 3 in a variation with an additional loading element 32, located on the opposite side of the weight 7. Increasing the surface site of the thrust plate 6 and adding an additional loading element 32 increases the stability of the bathing site 1 and its resistance to water waves. It is advantageous to use a loading element 32 in the shape of a cuboid, which, in addition to additional loading, can act as a seat 28 with an air chamber 30. The loading element 32 improves the safety of the bathing site 1 for users by covering the thrust plate 6.

[0031] Fig. 15 shows a thrust plate 6, on the periphery of which is placed a circumferential outlet 33, which penetrates the bottom increasing the friction of the thrust plate 6 against the bottom of the reservoir and the watercourse. Other elements that are used to increase the stability of the thrust plate 6 are vertical bars 34, cones 35 or a driven element 23, the length of which is selected according to the type of sediment in the bathing site 1 and its degree of compaction.

[0032] In another variant, shown in fig. 16a, a transmission belt 36 was used to construct a segment 12 of the curtain 3 separating the bathing site 1 from the lake or watercourse 2. The profiles 37 holding the segments 12 of the curtain 3 are attached to the bathing site 1. A single segment 12 of the curtain 3 is constructed from a section of transmission belt 36 with a length appropriate to the depth of the reservoir or watercourse 2 at the installation site. It is advantageous that the length of the transmission belt 36 is greater than the depth of the bathing site 1 at the location of the segment 12 of the curtain 3, so that the segment of the transmission belt 36 can sink into the sediment reducing unwanted water flow at the interface between the bottom and the structure of the bathing site 1. The upper part of the transmission belt 36 segment is above the water table, restricting the flow of water between the bathing site 1 and the tone of the lake or watercourse 2. The segment 12 of the curtain 3 advantageously includes emergency shutters 18, which serve to protect against wave-induced water pressure and increase the safety of the bathing site 1. Profiles 37 are mounted to the bathing site 1 in a known way permanently disconnectedly, for example, with screws. The length of the profile 37 is selected according to the type and degree of compaction of the bottom sediment. It is advantageous to drive profile 37 into the bottom of the reservoir or watercourse to the greatest possible depth, which supports the construction of bathing site 1. It is advantageous to use a gantry profile 37' into which a section of transmission belt 36 is inserted from above. The section of transmission belt 36 has along its sides guides 38 attached to the transmission belt 36 in a known manner, e.g. twisted, glued, vulcanized. It is advantageous to make guides 38 from the transmission belt. The guides 38 serve to hold the transmission belt 36 in the gantry profile 37'. In order to prevent the transmission belt 36 from lowering and rising, a blocker 39, shown in fig. 16 b, which is mounted in a known manner, for example with a screw connection on top of the gantry profile 37', is advantageously used. The blocker 39 joins in a known manner with the gantry profile 37', transmission belt 36 and guide 38 (fig. 16b).

[0033] In another variation shown in fig. 17, the transmission belt 36 segment is housed in a frame 42 advantageously made of metal to provide rigidity to this element. The stiffened transmission belt 36 is inserted into a shaped profile of either the channel type profile 37" or the I-beam type, attached in a known manner to the bath site 1 structure shown in fig. 17a. In order to prevent the transmission belt 36 from lowering and rising, a blocker 39 is advantageously used, which is mounted in a known manner, for example, with a screw connection on top of the profile 37. The blocker 39 is twisted in a known manner with the channel type profile 37", the transmission belt 36 and the frame 42 shown in fig. 17b.

[0034] In another variant, a structure is used to separate the bathing site 1 from the other part of the lake or watercourse 2 in the form of segments 12 of the curtain 3, with double walls, shown in fig. 18. Such a solution increases the stability of the bathing site 1 structure and its resistance to hydrological conditions occurring in the reservoir, in addition to allowing the installation of a pier 43 for users. In order to limit the exchange of water between the bathing site 1 and the lake or watercourse 2, it is advantageous to install segments 12 of the curtain 3 on both sides of the barrier 10, which further increases the safety of use of the bathing site 1 by users. The barriers 10 are advantageously arranged alternately and connected to each other by lattice elements. In variant 2, it is possible to use all types of segments 12 of curtain 3 presented in variant 1.

[0035] The invention in a further variation of execution is visualized in the drawings, where fig. 19 shows a bathing site assembled from segments of a curtain made of transmission belt, fig. 20 a schematic of the construction of a single segment of the curtain, fig. 21 a loading element in the shape of a cuboid performing the additional function of a seat with aeration, and fig. 22 a curtain segment with a buoyancy element.

[0036] Fig. 19. shows segments 12 of a curtain 3 made of a transmission belt, e.g., a post-excavation belt, used for separating the bathing site 1 from the other part of a lake or watercourse. On the segments 12 of the curtain 3 it is advantageous to set loading elements 16, for example, in the form of a perpendicular. Depending on hy-

drological conditions, it is advantageous to place loading elements 16 on both sides of the segments 12 of the curtain 3. Such a solution increases the stability of the bathing site 1 and resistance to conditions in the reservoir or watercourse. In another variation, it is advantageous to anchor the segments 12 of the curtain 3 in the bottom by, for example, driving anchoring elements 47, e.g., pipes, passing through the through-hole 46. It is advantageous to attach to the segments 12 of the curtain 3 stabilizers 44 connected to loading element 45 on the side of the lake or watercourse 2.

[0037] Fig. 20. shows a schematic diagram of the construction of a single segment 12 of curtain 3 built from three pieces of transmission belt 54', 54", 54" of equal lengths. The height of the fragments of the transmission belt 54', 54", 54" is selected according to the depth of the bath 1 at the place of their installation. Fragments of the transmission belt 54', 54", 54‴ are advantageously fixed permanently disconnectedly by screws 53 passing through the through-hole 46. The length of the screws 53 is selected so as to enable them to be recessed into the sheathing of the transmission belt 36. The number of screws 53 is selected in accordance with the size of the fragments of transmission belt 54', 54", 54" In another variation, the fragments of transmission belt 54', 54", 54" are advantageously connected by gluing together or vulcanizing. The fragment of transmission belt 54" advantageously has a rectangular shape and forms a base to which the fragments of transmission belt 54' and 54‴ are attached to each other in a known manner. The shape and height of the fragments of transmission belt 54' and 54‴ are selected according to the depth of the bathing site 1 at the place of their installation. The segments 12 of the curtain 3 are connected overlappingly, advantageously in widths up to 0.25 of the width of the strip, and are screwed together with screws 53 just like the fragments of the-fragment of transmission belt 54', 54", 54". The thickness of the transmission belt is selected so that when all the parts of the fragment of transmission belt 54', 54", 54" transmission belt are connected, the segment 12 of curtain 3 maintains the correct shape and resists the forces caused by wave action. When the forces acting on segment 12 of curtain 3 are exceeded, its elasticity makes it bend under the pressure of water and allows excess water to overflow without leading to its destruction. In another variation, an emergency shutter 18 is used in segment 12 of curtain 3, which opens automatically when the water pressure on segment 12 of curtain 3 is exceeded.

[0038] Fig. 21. shows a diagram of the loading element 16. The loading element 16 is advantageously constructed of elastic material and is filled with a mixture of sand and water, which ensures its high weight. The loading element 16 advantageously affects the segments 12 of the curtain 3 by increasing their friction against the bottom, which prevents the bathing structure 1 from moving under the influence of wave action. The loading element 16 is advantageously made in the shape of a cuboid, which can provide a seat 48 for users.

[0039] The filling of the loading element 16 is carried out through a ballast filling valve 51', through which a mixture of sand and water is injected, constituting the load of the loading element 16. During the filling of the loading element 16, the ballast emptying valve 51" is opened to allow water to flow out, resulting in a thickening of the mixture. Emptying of the loading element 16 from the sand-water mixture is advantageously accomplished by opening it in a known manner, such as by opening a Velcro shutter 49 located on the loading element 16 advantageously on its side, which reduces the likelihood of its opening by users. In another variation, the loading element 16 includes an air chamber 50 located at the top thereof, which performs the function of aerating the bathing site 1 and provides a form of jacuzzi for users. The diameter and number of aeration nozzles 52 are selected according to the parameters of the bathing site1 and the size of the seat 48. Compressed air is supplied to the air chamber 50 in a known manner, and the air pressure is selected according to the parameters of the bathing site 1.

[0040] Fig. 22 shows a buoyancy element 15 attached to the segment 12 of the curtain 3 in the form of a horizontal chamber of any shape with an air chamber 50.

Labels

[0041]

1 - bathing site
2 - lake or watercourse
3 - curtain
4 - concrete weight
5 - lashing
6 - thrust plate
7 - weight
8 - vertical barrier element
9 - sloping barrier element
10 - barrier
11 - reinforcing element
12 - segment
13 - connector
14 - connecting holes
14' - blocker
15 - buoyancy element
16 - loading element
17' - vertical stabilizing element
17" - oblique stabilizing element
18 - emergency shutter
19 - valve
20 - Velcro shutter
21' - string connection
21" - Velcro connection
21‴ - zipper connection
21"" - tarpaulin connection
22 - parts of the basic element
23 - driven element

24 - through-hole
25' - filling valve
25" - emptying valve
26 - emptying shutter
27' - ballast filling valve
27" - ballast emptying valve
28 - seat
29' - seat filling valve
29" - seat emptying valve
29‴ - shutter
30- air chamber
31- aeration nozzle
32- loading element
33 - circumferential outlet
34 - vertical bars
35 - cones
36- transmission belt
37- profile
37' - gantry profile
37" - channel type profile
38- guide
39- blocker
40- guider
41- roller guide
42- frame
43 - pier
44 - stabilizer
45 - loading element
46 - through-hole
47 - anchoring element
48 - seat
49 - Velcro shutter
50 - air chamber
51' - ballast filling valve
51" - ballast emptying valve
52 - aeration nozzle
53 - screw
54' - fragment of transmission belt
54" - fragment of transmission belt
54‴ - fragment of transmission belt

Claims

1. A mobile bathing site having barrier segments with a base and shielding elements, characterizedin that a shielding segmental curtain 3 is attached to the supports with one end, which with the other end is embedded in the bottom zone, the supports being barriers 10 in an amount depending on the length of the bathing site 1, in pairs connected in the upper zone by a connector 13 attached to the barriers 10, while with the other end they are embedded in thrust plates 6, which are plates embedded in the bottom of the reservoir.

2. The bathing site is, according to claim 1, **characterized in that** the barriers 10 have telescopic length adjusters, which are permanently embedded in the thrust plate 6, closed sections being the vertical barrier element 8, with connecting holes 14 for the blocker 14', in which the lower ends of the barriers 10 with connecting holes 14 for the blocker 14' are located.

3. The bathing site is, according to claim 1, **characterized in that** the sloping barrier element 9, located with one end on the thrust plate 6 and with the other end are connected to the vertical barrier element 8 of the length adjuster.

4. The bathing site is, according to claim 1, **characterized in that** the barriers 10 are connected to each other in pairs by at least one connector 13.

5. The bathing site is, according to claim 1, **characterized in that** the barrier 10 has a reinforcing element 11.

6. The bathing site is, according to claim 1, **characterized in that** weights 7 are mounted on the thrust plates 6.

7. The bathing site is, according to claim 1, **characterized in that** the thrust plate 6 on the underside has stabilizing elements in the ground in the form of a circumferential outlet 33 and/or vertical bars 34, and/or cones 35, and/or a driven element 23.

8. The bathing site is, according to claim 1, **characterized in that** the thrust plates 6 are advantageously located on the outer side of the bathing site 1 and/or on the inner side, and/or on both sides of the bathing site 1.

9. The bathing site is, according to claim 1, **characterized in that** the thrust plates 6 are situated inside the structure of the bathing site 1.

10. The bathing site is, according to claim 1, **characterized in that** the curtain 3 consists of segments 12 in a number selected according to the total length of the perimeter of the bathing site 1 and its depth, while the segments 12 of the curtain 3, are connected to each other in a known manner: advantageously by rope through fittings, or by means of Velcro, while the curtain 3 is made advantageously of coated synthetic fabric or steel or rubber.

11. The bathing site is, according to claim 1, **characterized in that** each of the segments 12 of the curtain 3 is advantageously connected to a buoyancy element 15 filled with a material having a density lower than that of water or air and advantageously to a loading element 16, and advantageously to a vertical stabilizing element 17', with an emergency shutter 18 located in the segment 12 of the curtain 3.

12. The bathing site is, according to claim 1, **characterized in that** the successive vertical stabilizing elements 17' are advantageously connected to each other by oblique stabilizing elements 17".

13. The bathing site is, according to claim 1, **characterized in that** the buoyancy element 15 of a flexible material advantageously made of polyethylene or fiberglass or metal has a valve 19 for injecting air or a Velcro shutter 20 for filling and emptying with solid materials having a density less than water or the buoyancy element 15 is filled with a honeycomb material, besides, to the buoyancy element 15 is attached in a known manner a segment 12 of the curtain 3, comprising segments 12 or parts of the basic element 22, the parts of the basic element 22 being connected to each other in a known manner advantageously by string connections 21', or by Velcro connection 21", or by a zipper connection 21", or by a tarpaulin connection 21"".

14. The bathing site is, according to claim 1, **characterized in that** the vertical stabilizing element 17' and the oblique stabilizing element 17" are connected to the segment 12 of the curtain 3 advantageously either by Velcro or by rope, the height of the individual segments 12 of the curtain 3 being approximately equal to the depth of the bathing site 1 in a certain zone, and the individual segments 12 of the curtain 3 being permanently disconnectedly fixed in a known manner.

15. The bathing site is, according to claim 1, **characterized in that** there are attached to the curtain 3 on the side of the lake or watercourse 2 driven elements 23 of rigid material advantageously made of metal or wood or fiberglass, which pass through the vertical through-hole 24 of the loading element 16, the driven elements 23 being attached to the curtain 3 in a known manner advantageously corded with fittings or threaded.

16. The bathing site is, according to claim 1, **characterized in that** the segment 12 of the curtain 3 is connected to the vertical stabilizing element 17', which is approximately cylindrical in shape and has a filling valve 25' and a emptying valve 25" of ballast material, and also has a emptying shutter 26 located in the wall of the vertical stabilizing element 17', while the oblique stabilizing element 17" has a filling valve 25' and a emptying valve 25" of ballast material, as well as a emptying shutter 26 of ballast material, located in the wall of the oblique stabilizing element 17".

17. The bathing site is, according to claim 1, **characterized in that** the segment 12 of the curtain 3 is connected to the loading element 16, the loading element 16 advantageously having a horizontal cylindrical shape and having a ballast filling valve 27' and a ballast emptying valve 27", while the individual loading elements 16 are connected to each other in a known manner.

18. The bathing site is, according to claim 1, **characterized in that** the lower part of the curtain 3 has a loading element 16 advantageously in the shape of a cuboid with a ballast filling valve 27' and a ballast emptying valve 27" and a vertical through-hole 24 for the driven element 23.

19. The bathing site is, according to claim 1, **characterized in that** the loading element 16 constituting the seat 28 has an air chamber 30 with aeration nozzles 31 as well as a seat filling valve 29' and a seat emptying valve 29" and a located in the frontal zone of the shutter 29‴ advantageously with Velcro, the air chamber 30 being located in the upper zone of the seat 28.

20. The bathing site is, according to claim 1, **characterized in that** the bathing site 1 is constituted by double and oppositely located barriers 10, advantageously connected to each other by lattice elements on which a pier 43 is mounted.

21. The bathing site is, according to claim 1, **characterized in that** the curtain, which is a shielding element, is formed by interconnected fragments of transmission belt 54', 54", 54‴ of which two 54', 54" in the lower zone are bent opposite to each other, and connected to each other by vertical walls, while the horizontal fragments of each bent fragment of transmission belt 54' and 54‴ are attached to a perpendicular of transmission belt 54".

22. The bathing site is, according to claim 1 or 21, **characterized in that** the curved segments 12 of the curtain 3 are connected to each other with a lateral offset advantageously up to 0.25 of the width of the segment 12 of the curtain 3.

23. The bathing site is, according to claim 1 or 21, **characterized in that** the interconnection of all elements of the segment 12 of the curtain 3 is a screw connection.

24. The bathing site is, according to claim 1 or 21, **characterized in that** the interconnection of all elements of the segment 12 of the curtain 3 is a glued connection.

25. The bathing site is, according to claim 1 or 21, **characterized in that** the interconnection of all elements of the segment 12 of the curtain 3 is a vulcanized connection.

26. The bathing site is, according to claim 1 or 21, **characterized in that** the emergency shutter 18 is arranged in the vertical elements of the segment 12 of the curtain 3.

27. The bathing site is, according to claim 1 or 21, **characterized in that** a spatial loading element 16 is located on a horizontal segment 12 of the curtain 3.

28. The bathing site is, according to claim 1 or 21, **characterized in that** the horizontal portions of the transmission belt 51' and/or 51" and 51‴ have a throughhole 46 for an anchoring element 47.

29. The bathing site is, according to claim 1 or 21, **characterized in that** the segment 12 of the curtain 3 is connected to the buoyancy element 15.

30. The bathing site is, according to claim 1 or 21, **characterized in that** the buoyancy element 15 of flexible material has a chamber for a filler having a density less than that of water.

31. The bathing site is, according to claim 1 or 21, **characterized in that** the loading element 16 constituting the seat 48 has an air chamber 50 with aeration nozzles 52, as well as a ballast filling valve 51' in the seat 48 and a ballast emptying valve 51" from the seat 48 and a Velcro shutter 49 located in the front zone, the air chamber 50 being located in the upper zone of the loading element 16.

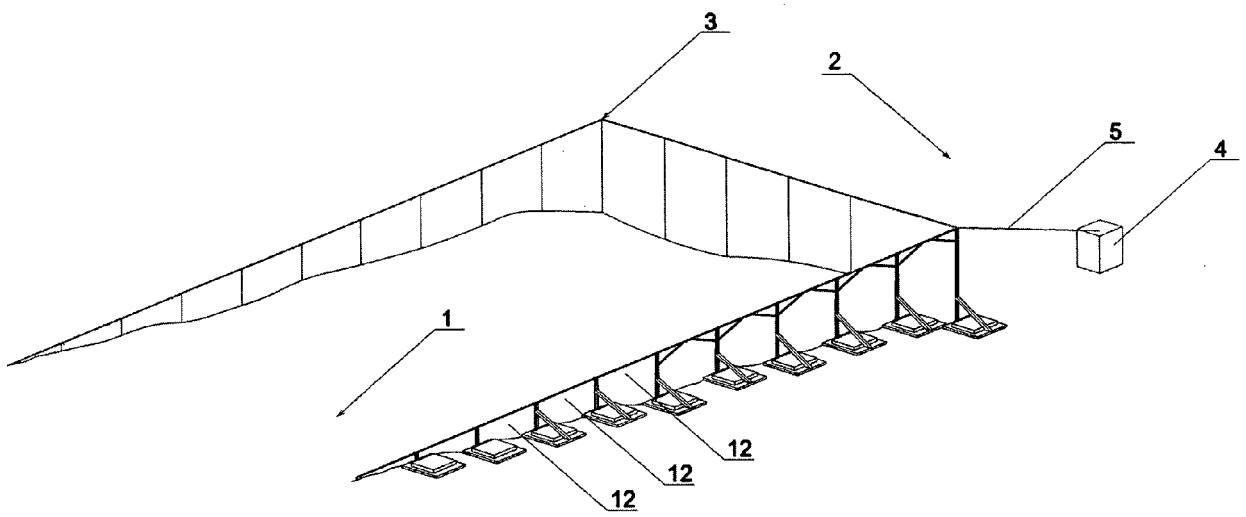

Fig. 1

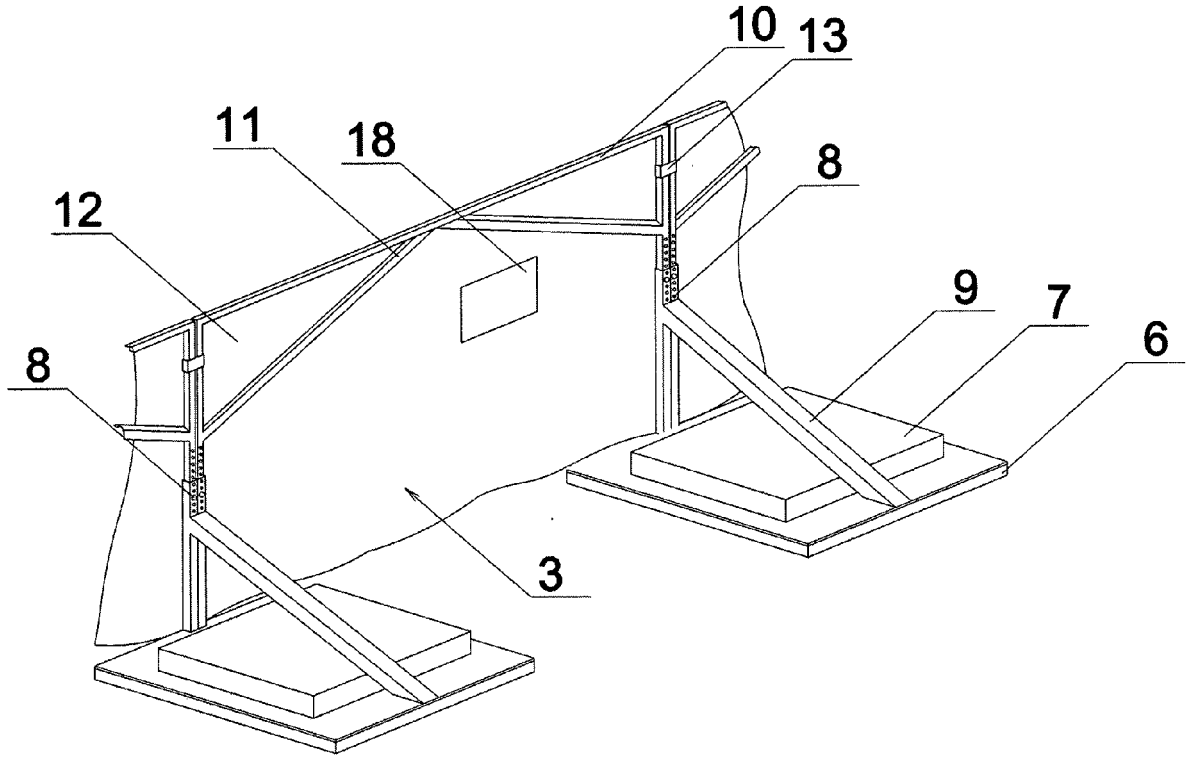

Fig. 2

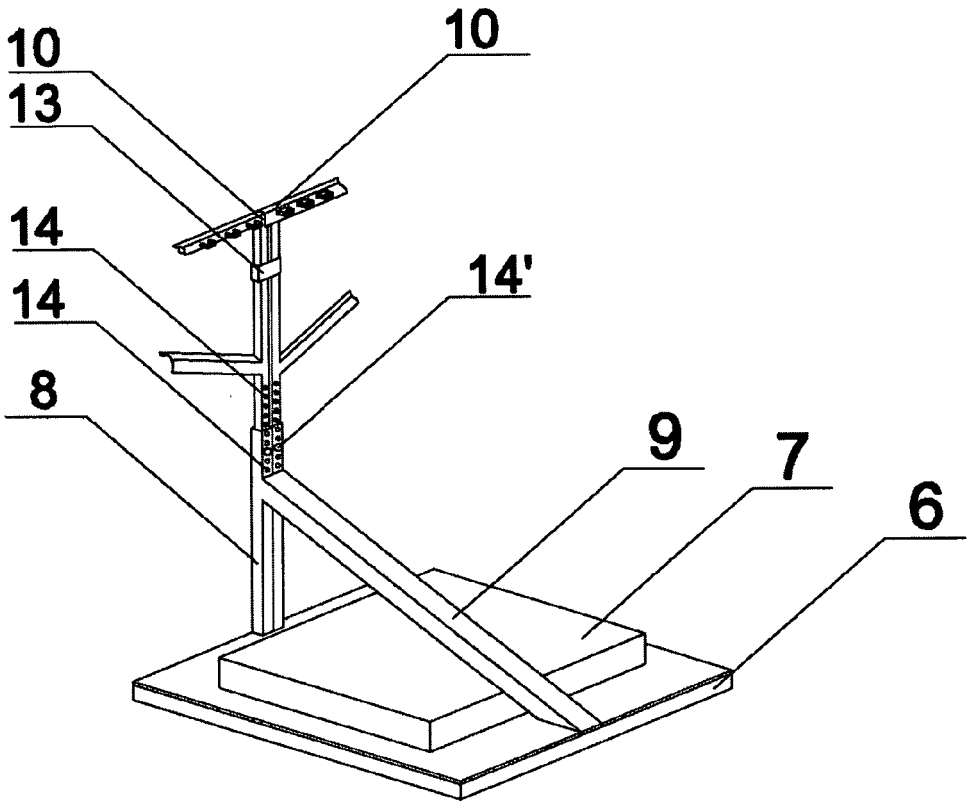

Fig. 3

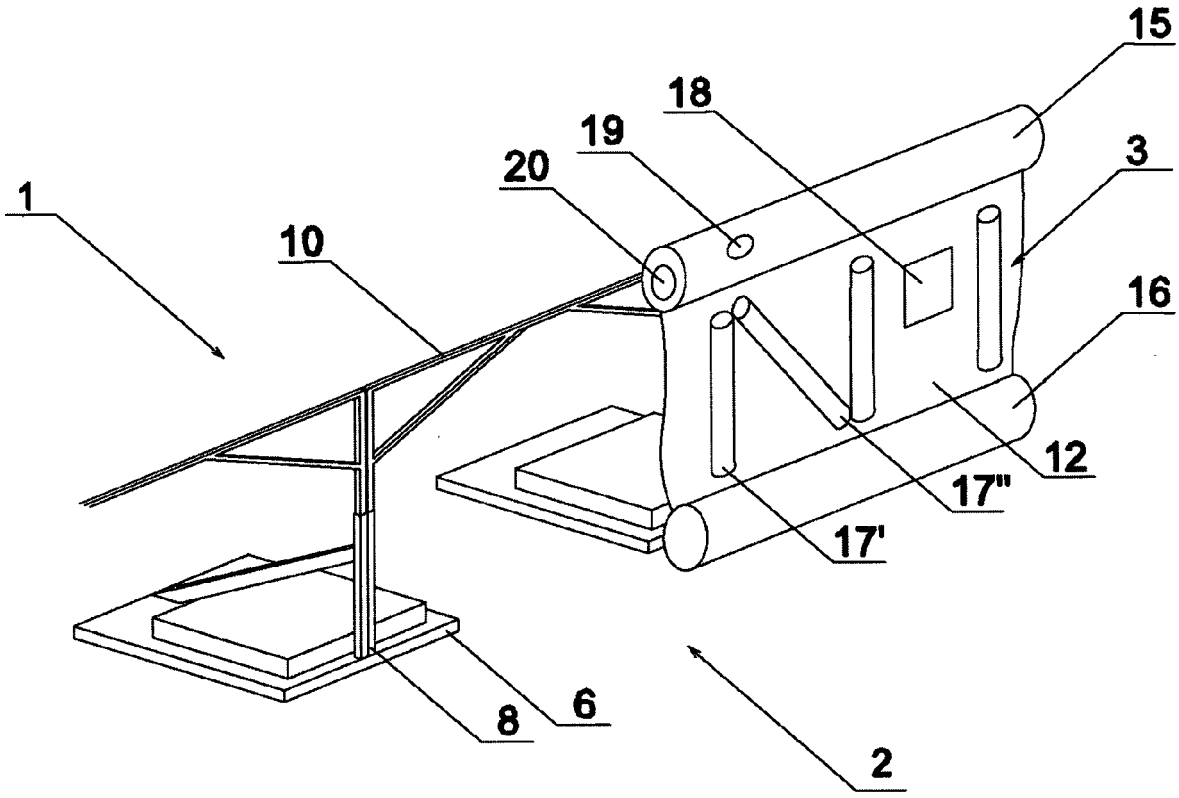

Fig. 4

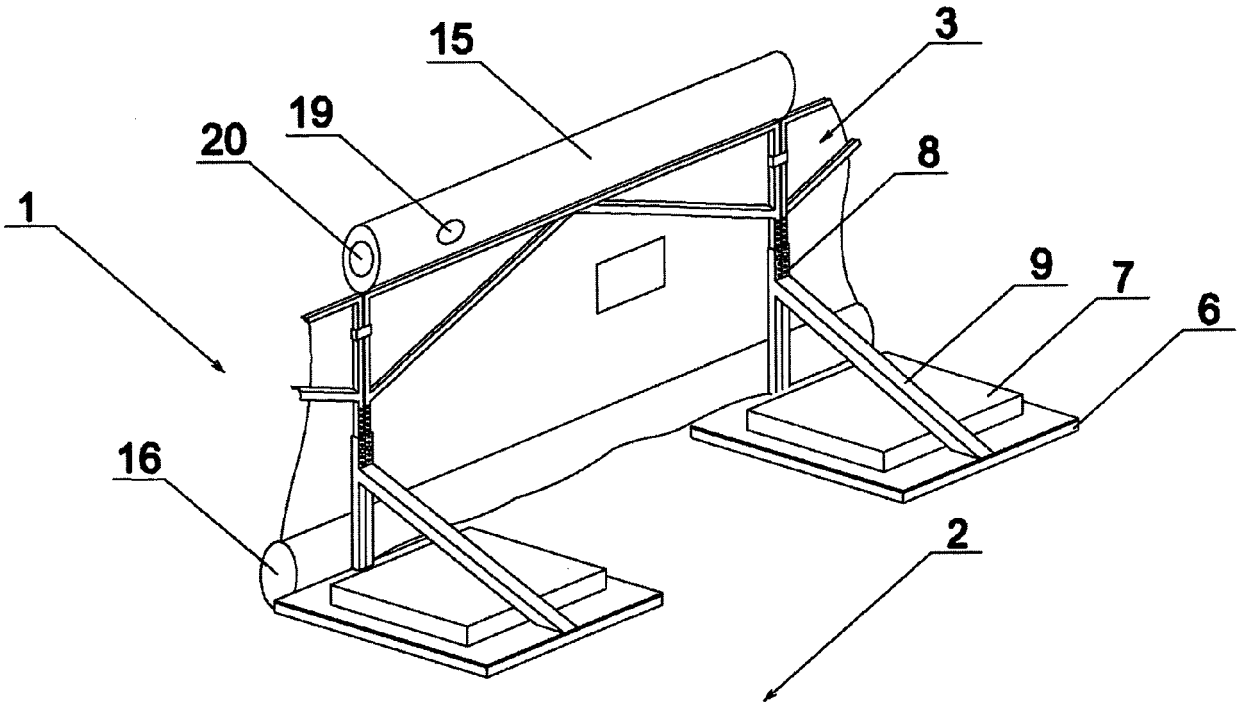

Fig. 5

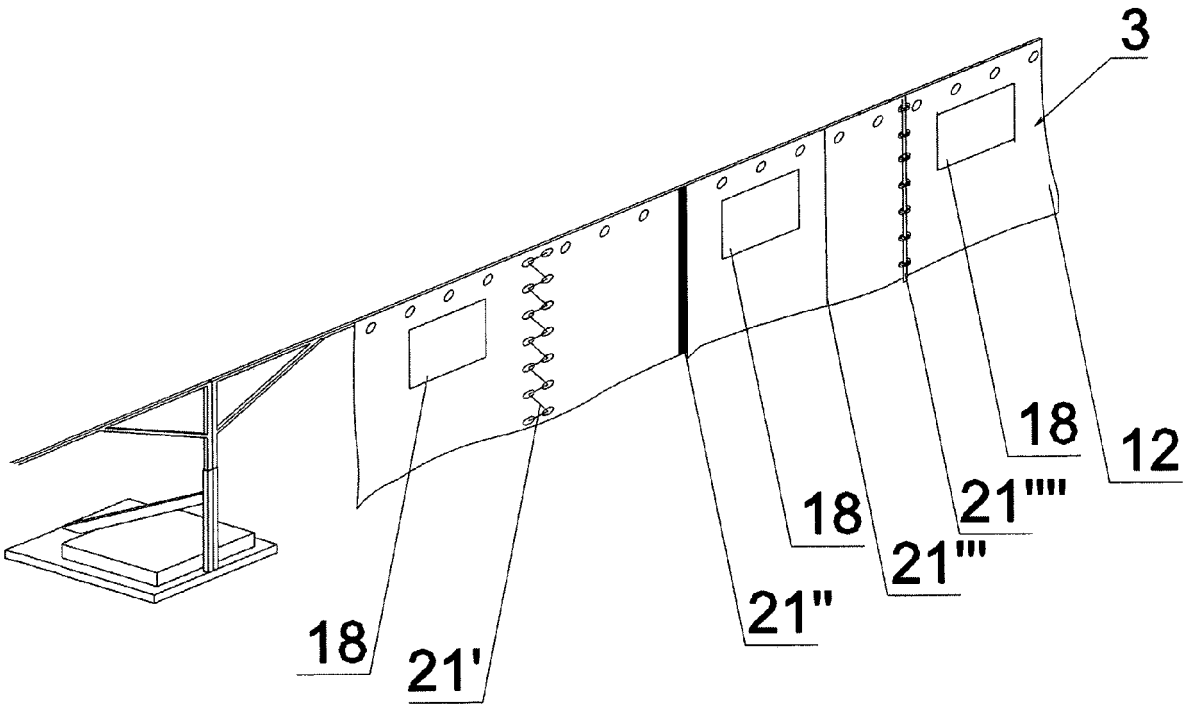

Fig. 6

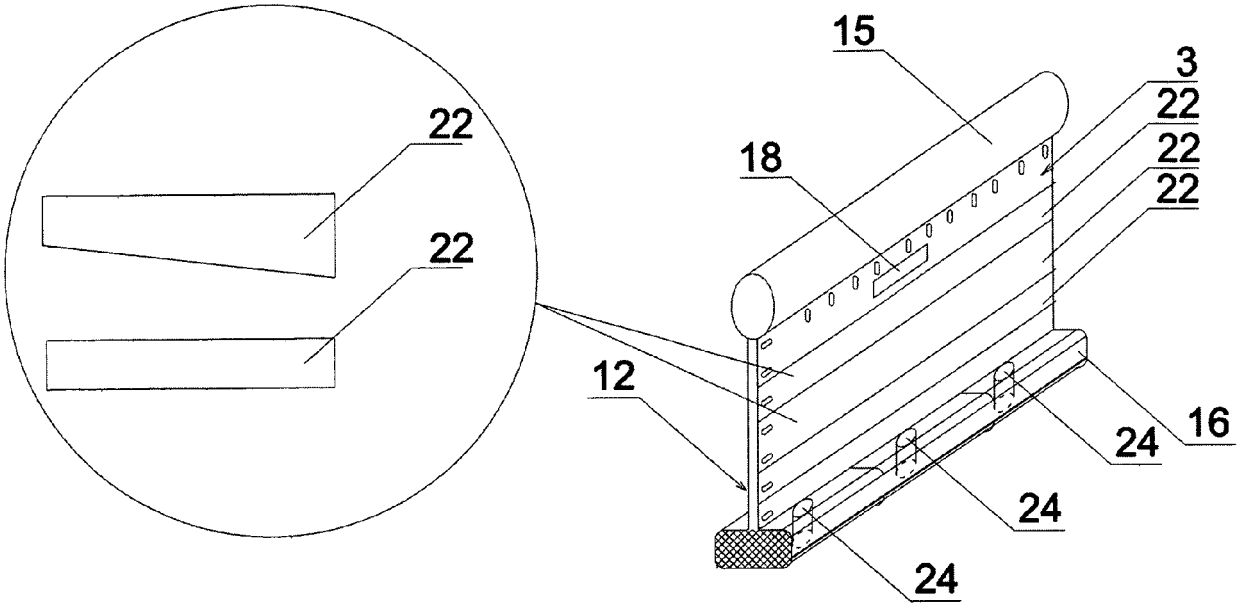

Fig. 7

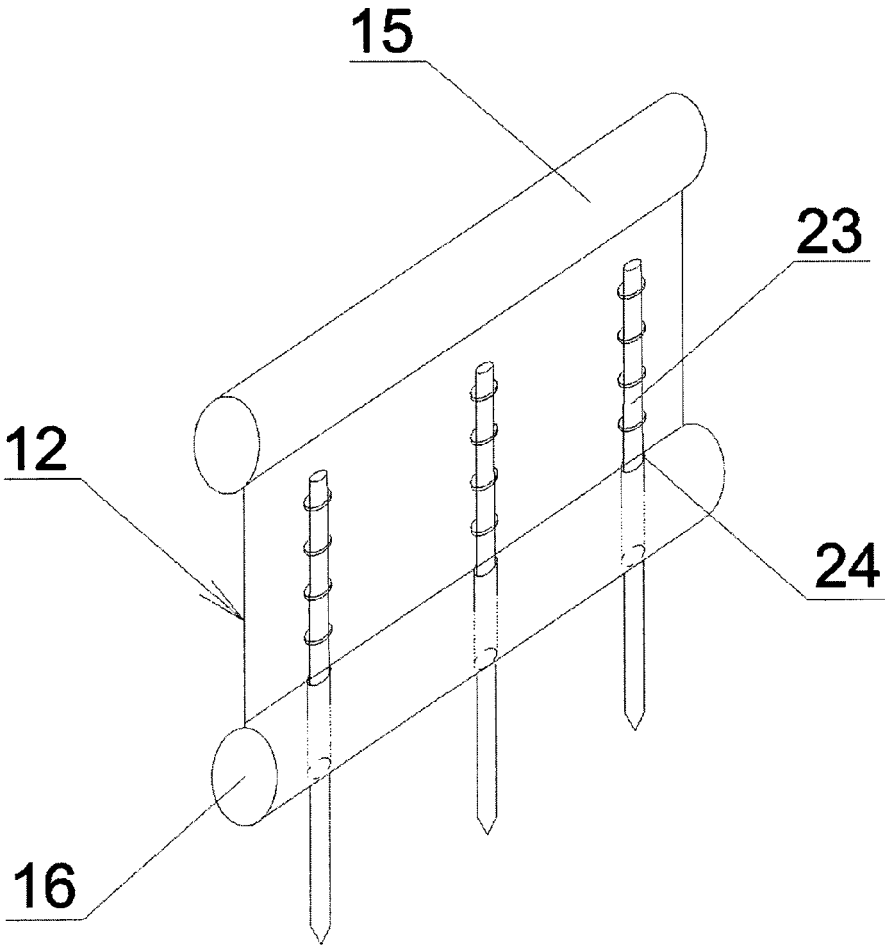

Fig. 8

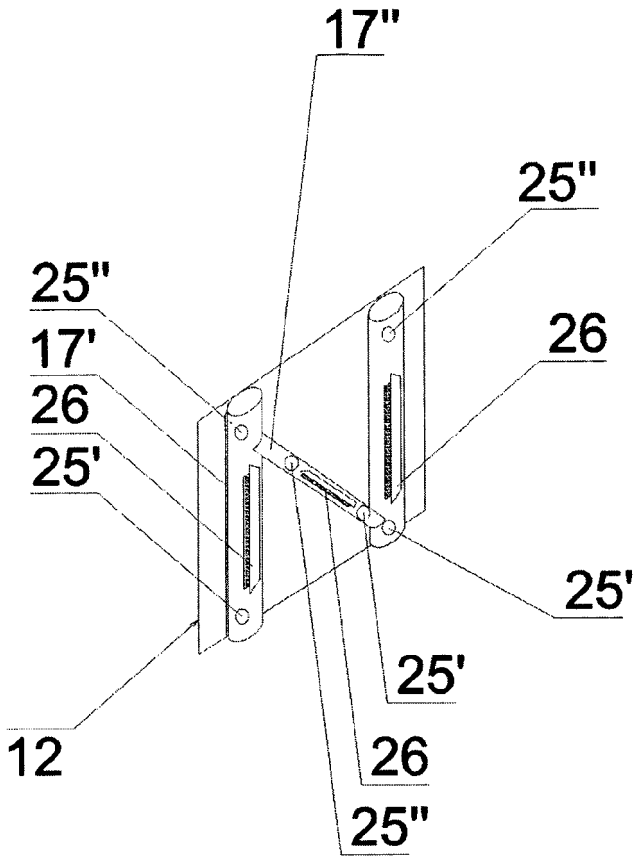

Fig. 9

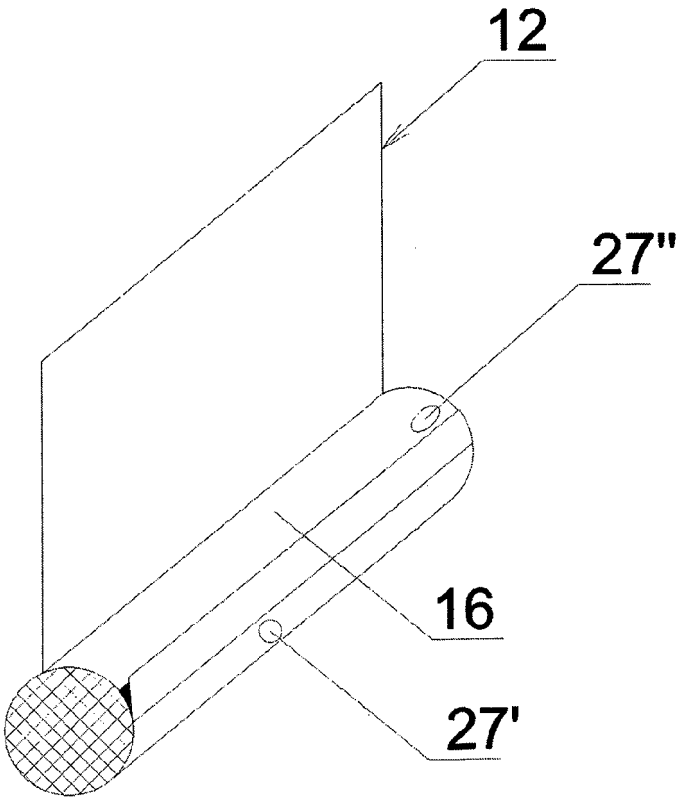

Fig. 10

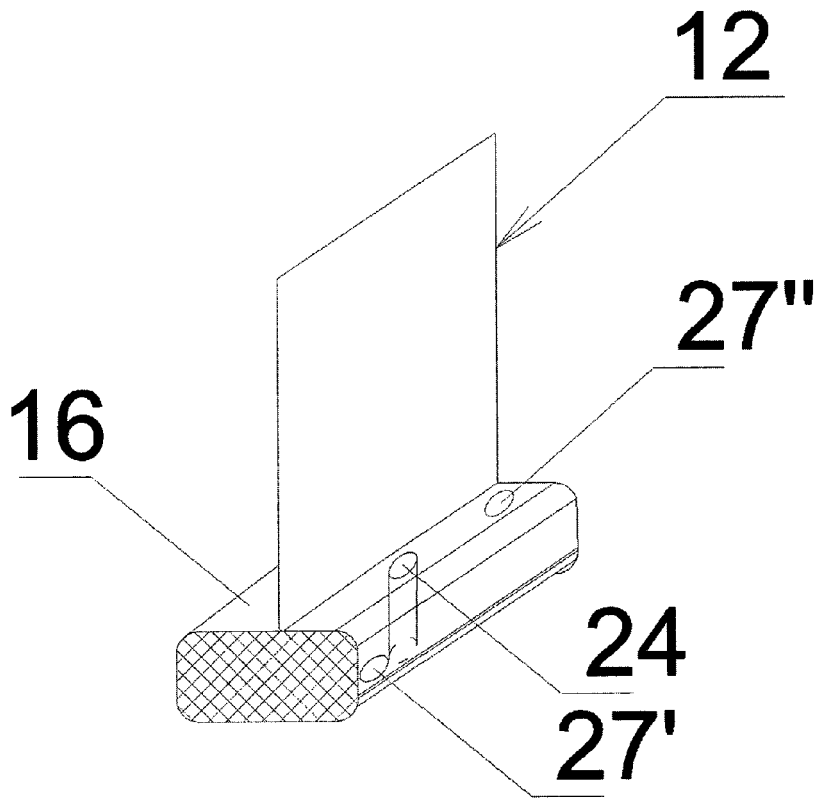

Fig. 11

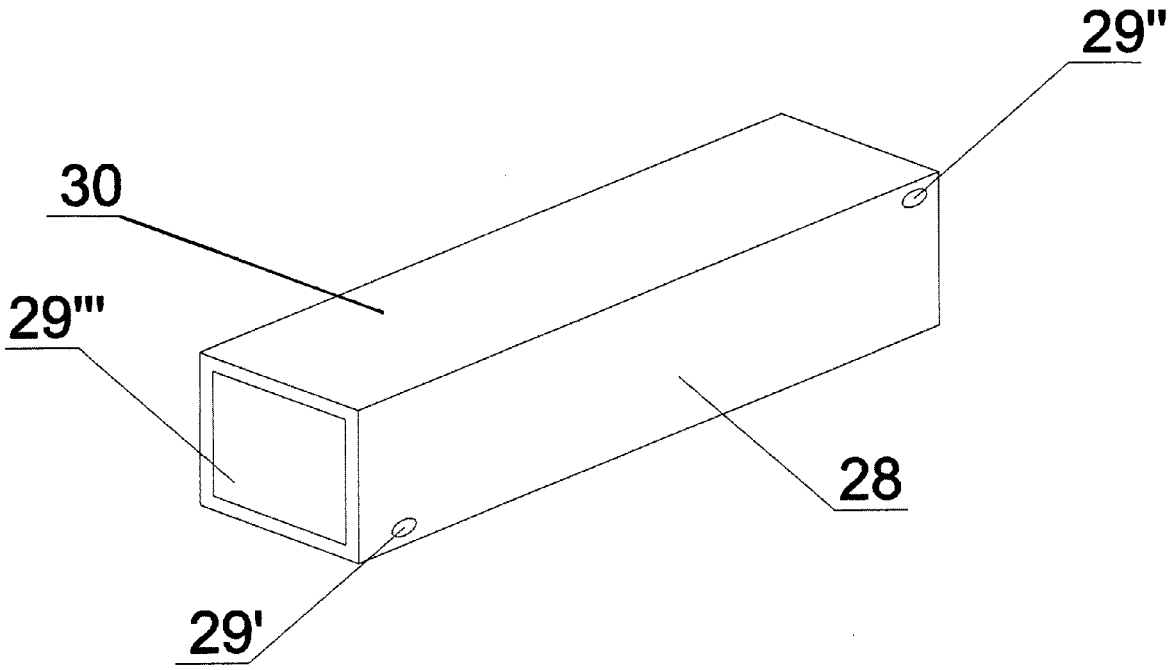

Fig. 12

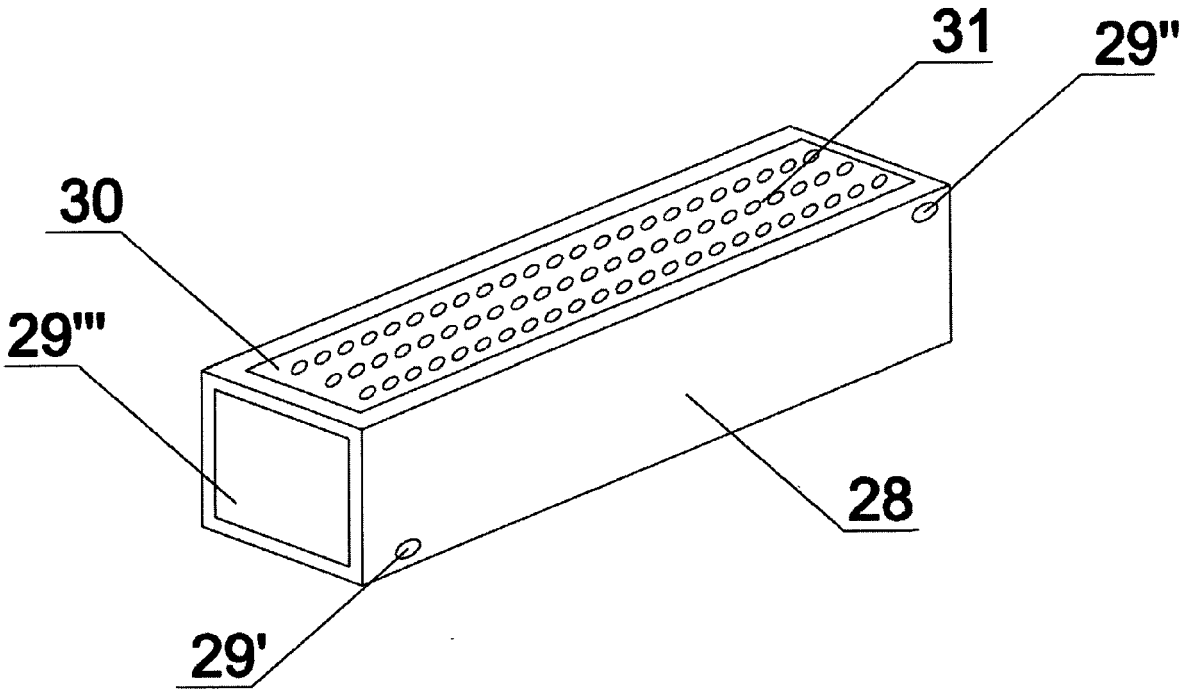

Fig. 13

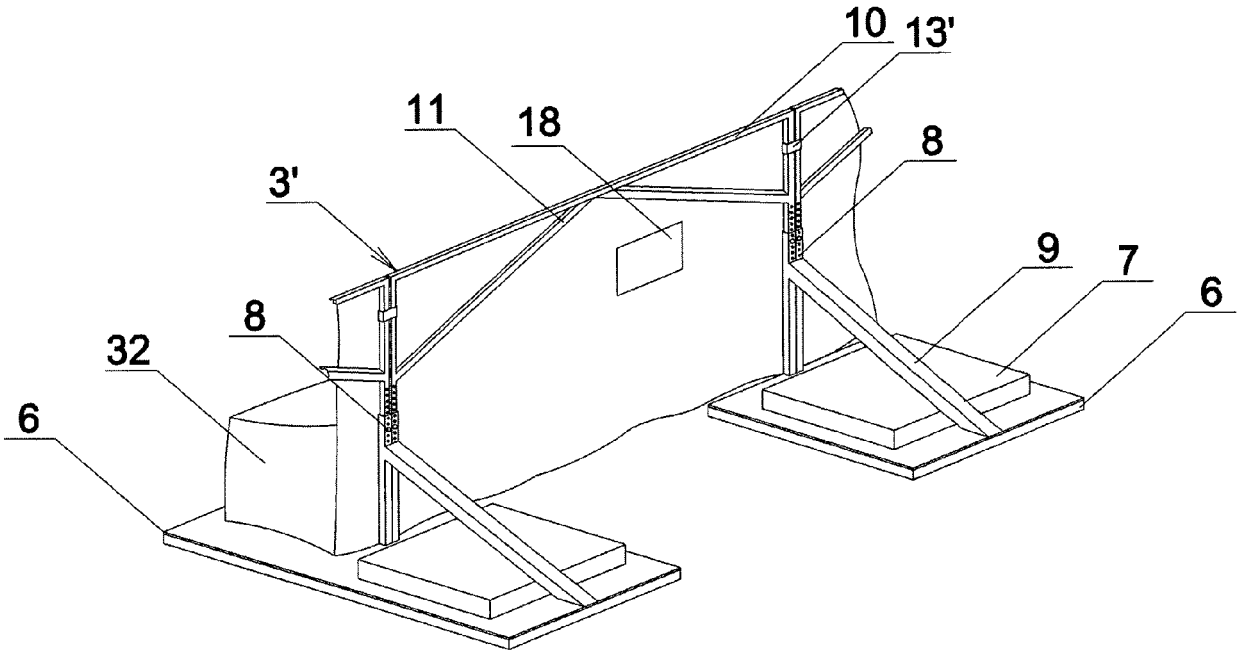

Fig. 14

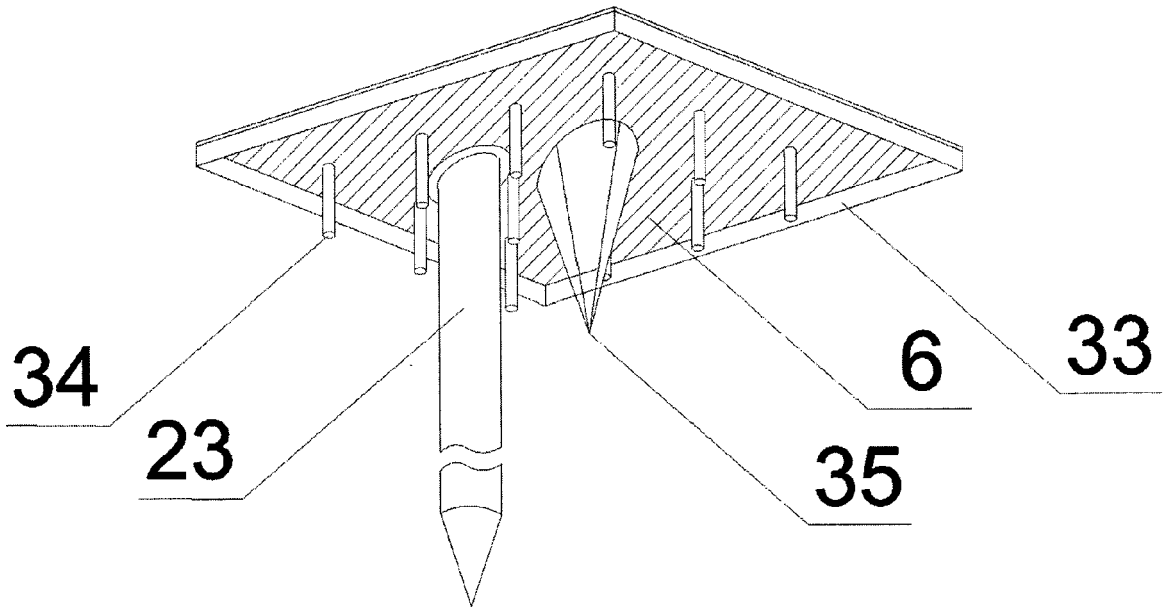

Fig. 15

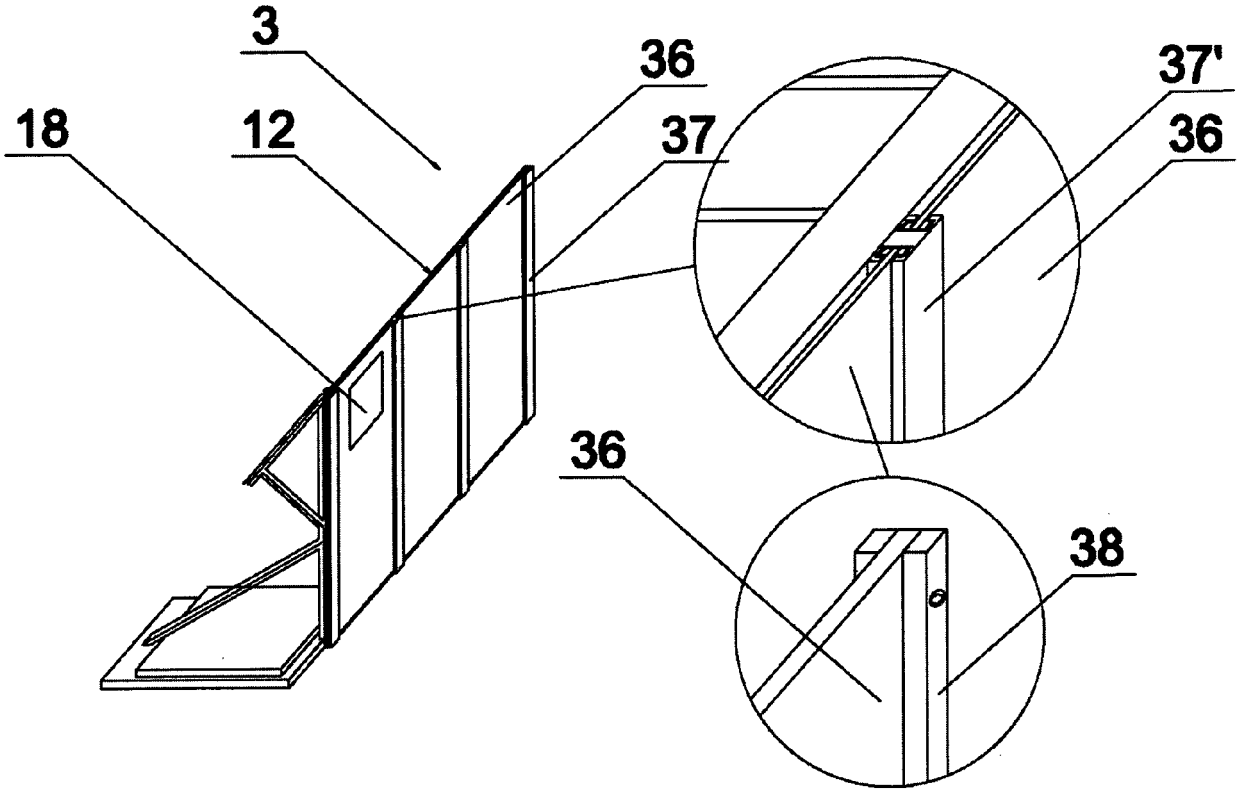

Fig. 16a

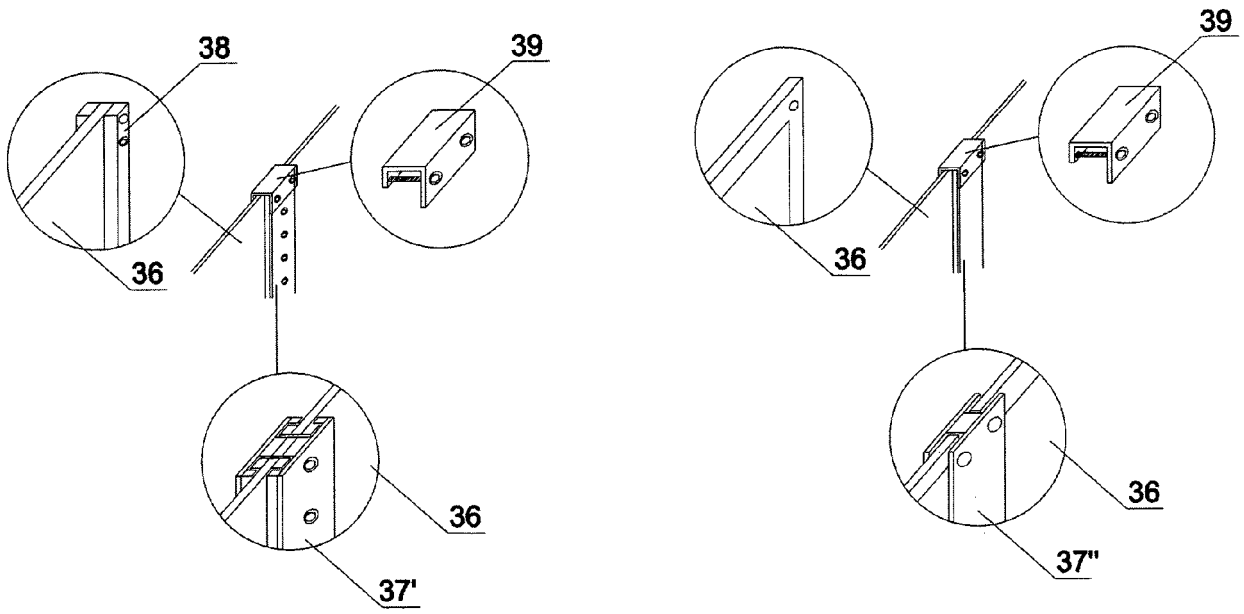

Fig. 16b

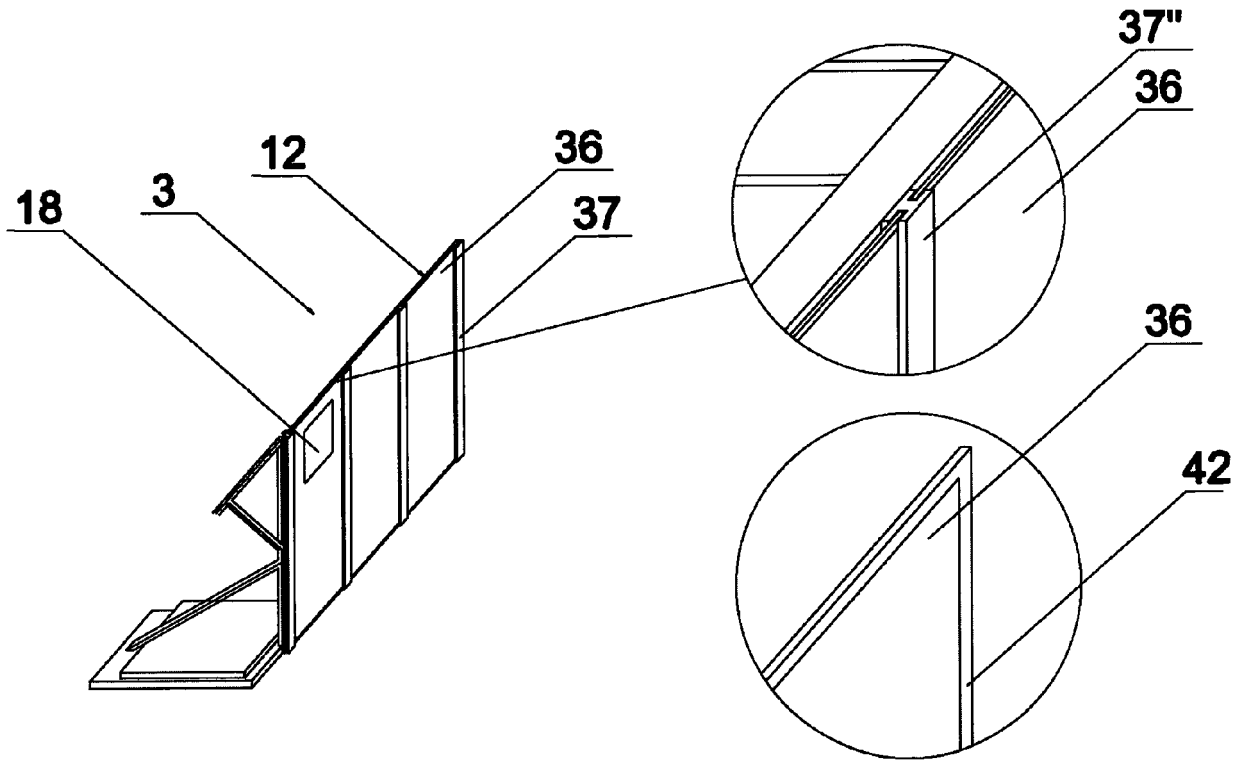

Fig. 17

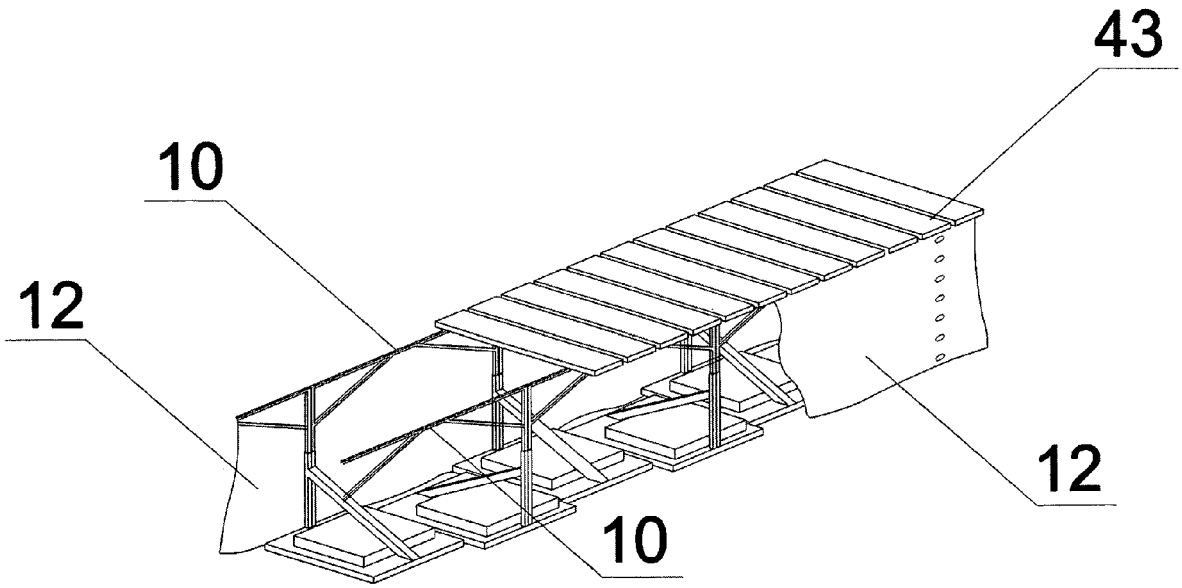

Fig. 18

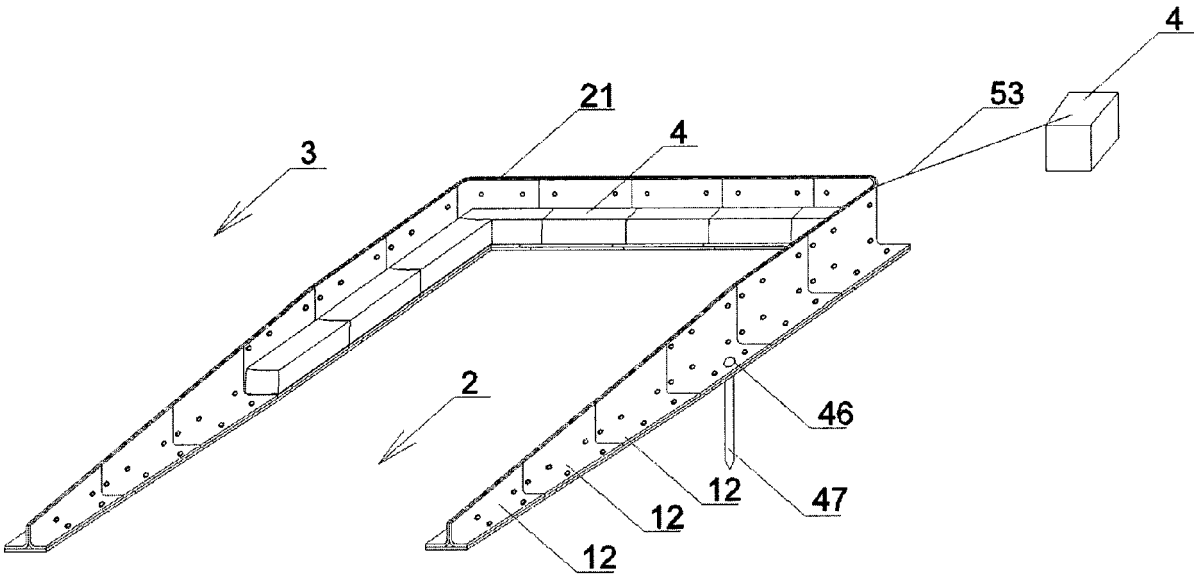

Fig. 19

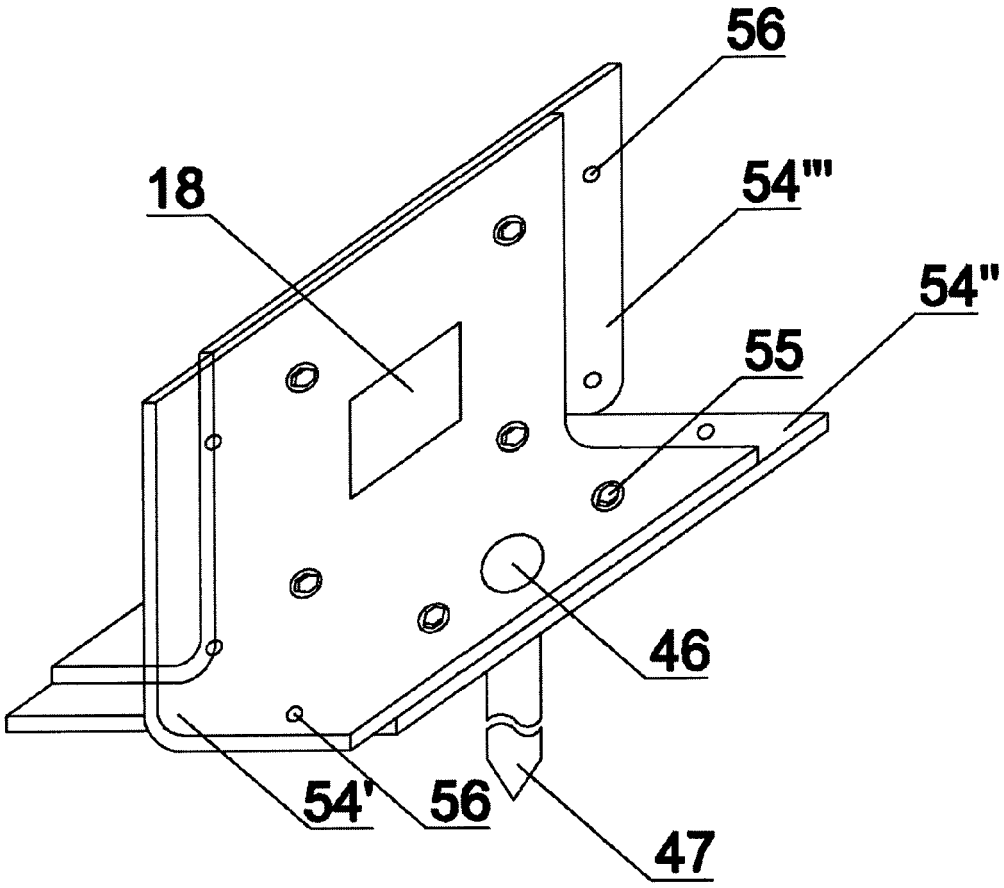

Fig. 20

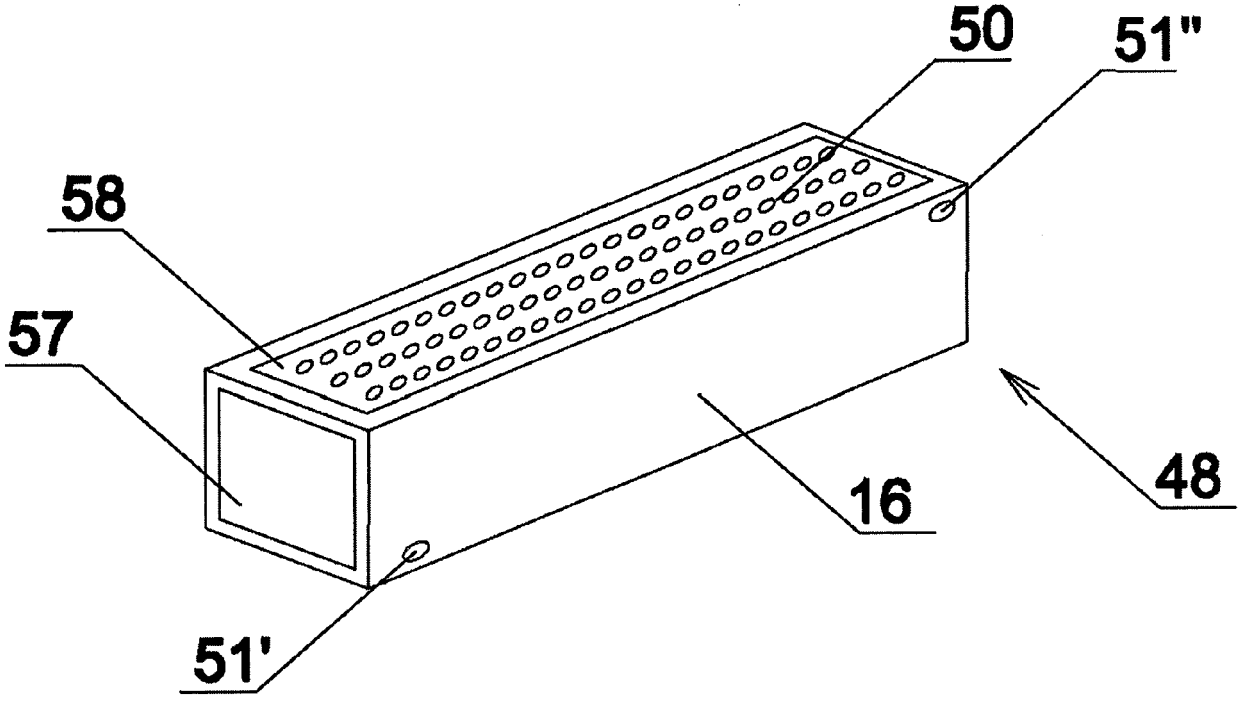

Fig. 21

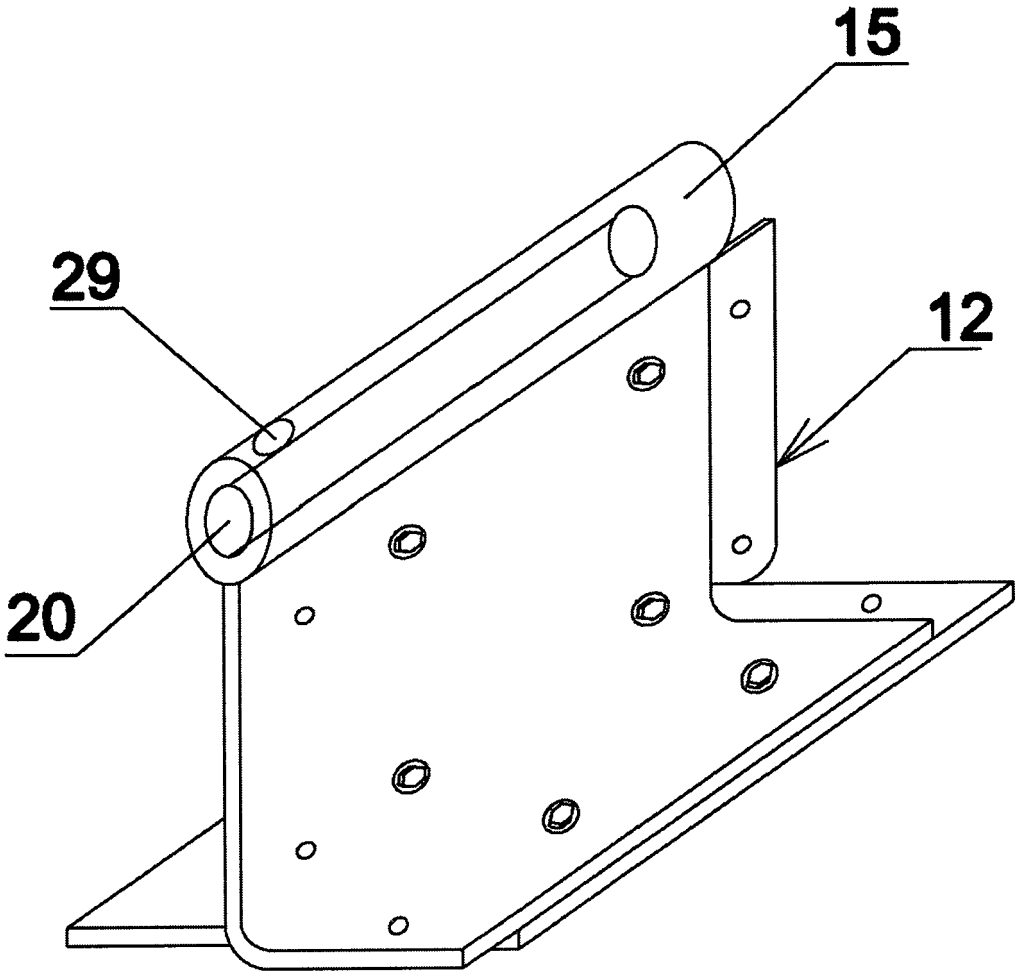

Fig. 22

REFERENCES CITED IN THE DESCRIPTION

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- PL 223969 **[0007]**
- PL 241043 **[0007]**