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(71) Applicant: **Mlynarczyk, Adam**
61-680 Poznan (PL)

(72) Inventor: **Mlynarczyk, Adam**
61-680 Poznan (PL)

(74) Representative: **Urbanska-Luczak, Barbara**
Kancelaria Patentowa TAX - PAT
B. Urbanska-Luczak, J.Luczak
ul. Kosciuszki 103/1
61-717 Poznan (PL)

(54) MOBILE BATHING SITE

(57) The object of the invention is a mobile bathing site with curtains and a floating platform, separating the bathing area from the other part of a lake or watercourse. 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. The use of mobile curtains for floating platforms makes it possible to apply a method of water treatment to the bathing site. A mobile bathing site with curtains and a floating platform can be used as a water playground.

The bathing site is characterized in that a segmented curtain 8 is attached to a floating platform 3 having barriers 8' for separating the bathing site 1 from the other part of the lake or watercourse, the curtain 8 comprising segments 4 in an amount selected according to the overall length of the floating platform 3 and its height, while the segments 4 of the curtain 8 are connected to each other in a known manner advantageously either by rope through fittings or by means of Velcro, while in the lower zone the segment 4 of the curtain 8 advantageously comprises a ballast element 5, wherein the curtain 8 is advantageously made of coated synthetic plastic fabric or steel, or transmission belt, or rubber.

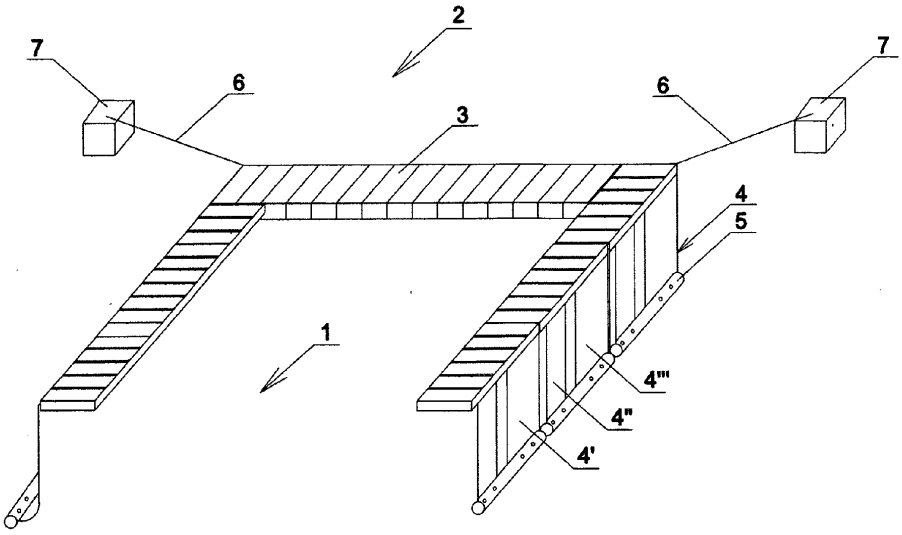

Fig. 1

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Description

[0001] The object of the invention is a mobile bathing site with curtains and a floating platform, separating the bathing area from the other parts of a lake or watercourse. 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. The use of mobile curtains for floating platforms makes it possible to apply a method of water treatment to the bathing site. A mobile bathing site with curtains and a floating platform can be used as a water playground.

[0002] The mobile bathing site with curtains and a floating platform 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 lake water quality tests published by provincial environmental inspectorates indicate the poor quality of inland waters in Poland. Excessive eutrophication of water and algae and cyanobacteria blooms occurring in the summer prevent recreational use of many lakes, dam reservoirs, and rivers for recreational purposes, and existing bathing areas 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 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 segments of the curtain separating the bathing area from the lake's other part, it is possible to use 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 of a fixed structure characterized in that a segmented curtain is attached to the floating platform for separating the bathing establishment from the other part of the lake or watercourse, whereby the curtain consists of segments in an amount selected according to the overall length of the floating platform 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, while in the lower zone the curtain segment advantageously contains a ballast element, wherein the curtain is advantageously made of coated synthetic plastic fabric or steel, or transmission tape, or rubber.

[0010] it is advantageous if the barriers are made up of segments placed advantageously on at least two suspension cables located on the side of the watercourse, whereby the barrier has lashings with weights, besides which the barrier segment is a prism with a trapezoid-shaped base, the shorter side of the base of which is located on the side of the bathing area and has four chambers, of which the upper chamber is a displacement chamber and has an inspection valve, while the air and water chamber, located below the chamber, has a valve for filling and emptying the air and water chamber, in addition, below the air and water chamber is located a ballast chamber with a valve for filling the ballast chamber and with a valve for emptying the ballast chamber.

[0011] Moreover, it is advantageous if the segment is a pneumatic-hydraulic segment for separating the bathing area from the lake's other part and is anchored by supporting cables made of flexible material and consists of three chambers, of which the upper pneumatic chamber partially submerged in water, has a valve for filling with air and a emptying valve, is seated on a hydraulic chamber having a valve for filling with liquid and a emptying valve, and this one is seated on a ballast chamber having a valve for filling with ballast and a valve for emptying the ballast, with each of the segments connected in a known manner to form a bathing site.

[0012] 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 possibility of transport to the destination on transport vehicles, such as in a container arrangement,
- the construction of the bathing site ensures its safe use,

[0013] A feature of the mobile bathing site with curtains and a floating platform of familiar design is the use of lightweight, easily assembled elements that form, when connected, the separation of the bathing area from the other part of a lake or watercourse. These elements are made so that they can be transported easily by wheeled transport. Water play parks of known construction can be used as floating platforms. The self-supporting nature of the structure does not require interference with the ground and foundation of the structure in the bottom, and thus does not interfere with the sediment and does not pose a risk of turbidity of the water in the reservoir. The assembly of the object of the invention is quick and technically simple, which minimizes the cost of its construction. After the end of the bathing season, the mobile curtains attached to the floating platforms, as well as the entire structure of the bathing site, can be dismantled, and the materials used can be reused without posing a threat to the natural environment. The use of mobile curtains to separate the bathing site minimizes interference with the water body, allowing water exchange between the bathing site and the lake or watercourse, and the treated water in the bathing site contributes to improving water quality in the lake or watercourse. Depending on environmental and construction conditions, a known method of protection against wave-induced water pressure should be chosen, for example, by making emergency flaps in mobile curtains that allow water to flow. The mobile curtain adjusts to the level of water in the reservoir or watercourse, so this type of structure is resistant to fluctuations in the water table.

[0014] The invention in an exemplary but non-limiting implementation is visualized in the drawings, where fig. 1 shows a diagram of a bathing site separated by a floating platform with segments of mobile curtains, in fig. 2 a

detailed schematic of a mobile curtain segment consisting of a base element and a ballast element, on fig. 3 height-adjustable curtain segments, on fig. 4 a schematic of additional reinforcement of the curtain, on fig. 5 a schematic of the vertical and oblique stiffening chamber, on fig. 6 a schematic of the ballast chamber, fig. 7 shows a schematic of the ballast chamber with the curtain attached in its central part, fig. 8 a schematic of a cuboid-shaped ballast element performing the additional function of an aerated seat, while fig. 9 a curtain attached in the axis of the modular system. Fig. 10 shows a general schematic of a rope structure with barrier segments, fig. 11 shows a detailed diagram of a single barrier segment, fig. 12 shows the initial segment of the barrier, fig. 13. shows a general scheme of a rope structure with barrier segments composed of two rope segments, fig. 14. a diagram of the barrier assembly, fig. 15 shows a general diagram of the bathing site , and fig.16 shows a segment of the bathing area.

[0015] Fig. 1 shows a structure for separating a bathing site 1 from the other part of a lake or watercourse 2 using a floating platform 3 of known design and attached to it segments 4 of curtain 8 with ballast elements 5. Using this type of construction, the buoyancy element is a floating platform 3 that holds the segments 4 of the curtain 8. This type of platform is anchored to the bottom by means of a lashing 6 attached, for example, to concrete weight 7. The number of segments 4 of the curtain 8 is selected according to the length of the total perimeter of the bathing site 1. Fig. 2 shows segment 4 of curtain 8, attached to floating platform 3. Segment 4 of curtain 8 is connected to ballast element 5. The curtain 8 is attached to the floating platform 3 in a known manner, e.g. by eyelets and hooks. The curtain 8 is advantageously made of flexible material, e.g. synthetic fabric, transmission belt, or metal. Depending on the peculiarities of the lake or watercourse in which the bathing site 1 is separated, segments 4 of the curtain 8 of adjustable height shown in fig. 3. The height of the individual segments 4 of the curtain 8 is selected according to the other part of the bathing site 1 by assembling these segments 4 with the ballast element 5 and the corresponding number of parts of the horizontal segments 11 of segment 4 of the curtain 8. The parts of the horizontal segments 11 are elements with heights and shapes adapted to the depth and slope of the bottom at the place of their attachment to the floating platform 3. The individual segments 4 of the curtain 8 are connected to each other permanently detachably in a known manner advantageously by a Velcro connection, since the elements may overlap in different ways due to angular differences of the parts of the horizontal segments 11. Depending on environmental and construction conditions, a known method of protection against wave-induced water pressure is selected, for example, by making emergency shutters 15 to allow excess water to flow through. The emergency shutters 15 are opened manually or automatically on both sides of the segment 4 of the curtain 8 during high pressure differences. Fig. 4. shows additional reinforcements of segment 4 of curtain 8. Advantageously, a driven element 13 made of a rigid material, e.g. metal, wood, fiberglass, is used on the side of the lake or watercourse 2, which allows additional reinforcement of the segment 4 of the curtain 8. The driven element 13 is attached to the segment 4 of the curtain 8 in a known manner, e.g. laced, threaded. In order to use the driven element 13, a vertical through hole 14 is provided in the ballast element 5, through which the driven element 13 passes. Fig. 5 shows segment 4 of the curtain 8, which achieves rigidity by injecting a mixture of sand and water into the vertical stabilizing element 9. Filling of the vertical stabilizing element 9 is carried out with a filling valve 16' and an emptying valve 16". During filling, a hose, not shown in the figure, is connected to the filling valve 16' valve to inject the mixture, and the emptying valve 16' is opened. When the vertical stabilizing element 9 is sufficiently rigid, the filling valve 16' and the emptying valve 16' are closed. Emptying of the vertical stabilizing element 9 is advantageously carried out by unfastening the emptying shutter 17 located in the wall of the vertical stabilizing element 9. The emptying shutter 17 is unfastened in a known way, such as by Velcro. In addition, the structure of the segment 4 of the curtain 8 is strengthened by adding an oblique stabilizing element 10, which is filled and emptied in the same way as the vertical stabilizing element 9 with a filling valve 16' and an emptying valve 16'. In another variation, the vertical stabilizing element 9 and the oblique stabilizing element 10 are made of a material of suitable rigidity and are attached in a known manner to the segment 4 of the curtain 8, for example, by means of Velcro. The size of the vertical stabilizing element 9 and the size of the oblique stabilizing element 10 are selected according to the dimensions of the segment 4 of the curtain 8 and are applied according to the hydrological conditions occurring in the lake or watercourse 2.

[0016] The lower part of the segment 4 of the curtain 8 advantageously has a ballast element 5 of any shape, such as a horizontal cylinder. Fig. 6 shows the ballast element 5, in which the ballast filling valve 18' and the ballast emptying valve 18" are located. A mixture of sand and water is injected through the ballast filling valve 18', acting as a load and stabilizing the curtain segment 4 of curtain 8. During filling, the ballast emptying valve 18" is opened to allow water to flow out of the ballast element 5, resulting in compaction of the ballast. Emptying of the ballast element 5 from the sand/water mixture is advantageously accomplished by opening it in a known manner, such as by undoing the Velcro fasteners provided in the ballast element 5. It is possible to apply any load to the ballast element 5, for example, by using a steel chain. Ballast elements 5 are advantageously connected to each other in a known way, for example, by Velcro. Depending on the hydrological conditions and the cohesiveness of the sediments present in the lake or watercourse 2, the optimal shape of the ballast element 5 and its weight are selected. Another variation uses a ballast el-

ement 5 with the shape shown in fig. 7. The segment 4 of the curtain 8 is attached to the middle part of the ballast element 5 in a known way, which increases the stability of the bathing site 1 and its resistance to waving. In addition, the ballast element 5 provides a seat 19 for users as illustrated in fig 8. The size of the seat 19 is selected to allow safe and comfortable use. The seat 19 is filled advantageously by injecting a mixture of sand and water through the seat filling valve 20' and the seat emptying valve 20". A mixture of sand and water is injected through the seat filling valve 20' as a load and to stabilize the segment 4 of curtain 8. During the filling process, the seat emptying valve 20" is opened to allow water to flow out of the seat 19, resulting in a thickening of the sand mixture in the seat 19. Emptying of the seat 19 from the sand/water mixture is advantageously accomplished by opening it in a known manner, such as by unfastening the Velcro shutter 20" located in the seat 19. It is advantageous to attach Velcro to open seat 19 on its side, thus reducing the likelihood of users opening it. In another variation, shown in fig. 8, the ballast element 5, which is seat 19, includes an air chamber 21 located in its upper part that performs the function of aerating the bathing site 1 and provides a form of jacuzzi for users. The diameter and number of nozzles 22 for aeration are selected according to the parameters of the bathing area 1 and the size of the seat 19.

[0017] In bodies of water where there is a risk of strong waves, it is advantageous to fix the curtain centrally in the axis of the floating platform 3, which prevents it from tilting as shown in fig. 9. Each of the segments 4 of the curtain 8 is advantageously connected to a buoyancy element which is a floating platform 3 filled with a material with a density lower than that of water or air, which is connected via a lashing 6 to a weight 7 for better stabilization of the floating platform 3.

[0018] Figure 10 shows a general schematic of a rope structure with barrier segments 4', 4", 4", ... The barrier segments 4', 4", ‴, ..., are advantageously placed on two support ropes 23 running on the ton side of the lake or watercourse 2. It is advantageous to stabilize the cable structure with barrier segments 4', 4", 4", ... by using lashings 25 with weights 24, advantageously of concrete.

[0019] The barrier segment 4', 4", 4‴, ..., is advantageously in the shape of a prism with a trapezoidal base 26, the shorter base of which runs on the side of the bathing site 1 and the longer base on the side of the lake or watercourse 2. This shape of the barrier segment 4', 4", 4‴, ..., results in the formation of an arc after connecting all the barrier segments 4', 4", 4‴, ..., and stretching the support rope 23. The lengths of the individual sides are selected according to the target shape of the barrier 8', which is to be formed after tensioning the support cables 23. The barrier segments 4', 4", 4", ..., are advantageously made of plastic. A detailed diagram of barrier segment 4', 4", 4‴, ..., is shown in fig. 11. The barrier segment 4', 4", 4", ... has four chambers. The upper buoyancy chamber 27, which is advantageously filled with air or material with a density less than that of water, serves as a buoyancy chamber. The buoyancy chamber 27 has an inspection valve 28, which is used for filling or emptying with materials having a density less than that of water, but also for inspecting and possibly pumping out water from the buoyancy chamber 27 that may occur in the event of a leak. Air and water chamber 29, second from the top, for the installation of barrier segment 4', 4", 4", ..., is advantageously filled with air. The air and water chamber 29 has a valve 30 for filling and emptying with air or water. The volume of the buoyancy chamber 27 and the air and water chamber 29 is selected so as to achieve buoyancy of the barrier segment 4', 4", 4", ... In order to plant the barrier segment 4', 4", 4‴, 4‴, ..., on the bottom in the designated place, the valve 30 is opened, resulting in the release of air from the air and water chamber 29 and its replacement by water. As a result, the barrier segment 4', 4", 4", ..., loses buoyancy and settles to the bottom of the reservoir. The third ballast chamber 31 is filled with a material having a density greater than that of water. The ballast chamber 31 has a filling valve 32 of the ballast chamber 31 and an emptying valve 33 of the ballast chamber 31. The ballast chamber 31 is advantageously filled before installation with sand or recycled materials, e.g. granules, rubber elements with a density greater than that of water. The anchor chamber 34 is located fourth from the top and is open from the bottom and has an opening 35 at the top, which allows the anchor chamber 34 to be filled with water and/or material from the bottom of the reservoir. The anchor chamber 34, which is open from underneath, makes it possible to adjust the height of the barrier segment 4', 4", 4", ..., precisely to the of the lake or watercourse at the installation site by pushing it into the bottom.

[0020] The barrier segment 4', 4", 4", ..., has an outlet 36 on one side and an inlet 37 on the other side, which serve to initially connect the barrier segments 4', 4", 4", ... to each other. The barrier segment 4', 4", 4", ..., advantageously has an emergency flap 38, advantageously spring-loaded, which opens due to excessive water pressure on the barrier 8', protecting the barrier 8' structure from damage. The stiffness of the spring, not shown in the figure, in the emergency flap 38 is selected according to the hydrological conditions present in the lake or watercourse.

[0021] Individual barrier segments 4', 4", 4", ..., are put on the support ropes 23, which, when stretched, stabilize the bathing site 1. The support ropes 23 are placed in the recess of the barrier segment 4', 4", 4‴, ..., the diameter of which is advantageously 10% larger than the diameter of the support rope 23. The length of the support ropes 23 is selected according to the overall length of the barrier 8' and the diameter of the support ropes 23 is selected according to the weight of the barrier 8' and the forces acting on it. Another variant uses support ropes 23 composed of two parts. Such a solution reduces the weight of a single section of support rope 23. The two sections of the support rope 23 are then attached in the

middle of the barrier 8' to the starting segment of the barrier 8' and locked inside the initial segment 39' of the barrier 8' by means of a blocker 39 of known design. The stretching of the sections of the support rope 23 is done on the shore at the first and last barrier segments 4', 4", 4", 4", ..., which are the starting segments of the barrier 8'.

[0022] The construction of the bathing site 1 is started by unwinding from a single drum 40 two support ropes 23, at the ends of which is a initial segment 39' of the barrier 8' made advantageously of metal. Barrier segment 4', 4", 4", 4", ..., with a height selected according to the of the bathing area 1 in the place of its installation, is put on the support ropes 23. Then two more barrier segments 4', 4", 4‴, ... are connected by joining the outlet 36 with the inlet 37. Assembling the next barrier segments 4', 4", 4‴, ..., the barrier 8' is moved deep into the bathing site 1 to the assumed shape. The last segment of the barrier 4', 4", 4‴, ..., is made in the same manner as the initial segment of the barrier 8' advantageously of metal, and at the end thereof there is a winch 41, advantageously electric, which tightens the support ropes 23 in order to slide all the segments of the barrier 4', 4", 4‴, ..., together and jam them. The jamming of the barrier segments 4', 4", 4‴, ..., is made possible by the trapezoidal-shaped trapezoidal base 26.

[0023] Disassembly of the 8' barrier is carried out by reducing the tension of the support cables 23 and removing the individual barrier segments 4', 4", 4", ..., in the reverse order of assembly. It is advantageous to lift the barrier segment 4', 4", 4", 4‴, ..., before disengaging from the support cables 23, in order to empty the anchor chamber 34.

[0024] A general schematic of the bathing site is illustrated in fig. 15. It consists of barrier segments 4', 4",4 ‴ , ... separating bathing site 1 from the of the lake or watercourse. The number of barrier segments 4', 4", 4" and their lengths are selected according to the length of bathing site 1 and the hydrological conditions prevailing in the lake or watercourse, and the height of the individual barrier segments 4', 4", 4", ... is greater by 30-50 cm than the of the lake or watercourse at the site of installation. The width of the barrier segment 4', 4", 4",... is advantageously equal to its height. barrier segments 4', 4", 4", ... are permanently disconnected from each other in a known way, such as strings. barrier segments 4', 4", 4", ... are advantageously stabilized by lashings 48 attached to anchors 49, advantageously made as concrete blocks. A diagram of a single barrier segment 4' is presented in fig. 16. The barrier segment 4' is advantageously made of flexible plastic and consists of three chambers. The pneumatic chamber 50 is filled with air. The upper half of the pneumatic chamber 50 is above the surface of the water, and the other half is below it. The pneumatic chamber 50 is a buoyancy element that maintains the shape of the barrier segment 4', 4", 4", ... The hydraulic chamber 51 is located below the pneumatic chamber 50 and is filled with water, advantageously lake water. The pressure in the hydraulic chamber 51 is advantageously maintained greater than the pressure of the water pushing in from the lake or watercourse 2 by forcing air into the hydraulic chamber 51 This ensures that the proper shape of the entire barrier segment 4', 4", 4'", ... Ballast chamber 52 is located at the bottom and is filled with a mixture of sand and water, acting as a load on the entire barrier segment 4', 4", 4", ... The ballast chamber 52 prevents the barrier segment 4', 4", 4‴, ... during its use and maintains the shape of the entire barrier segment 4', 4", 4", ... All three chambers constitute barrier segment 4', 4", 4", ..., which, filled in the right way, has the right rigidity and ensures its safe use.

[0025] Assembly begins by transporting the barrier segment 4' to the installation site and filling the pneumatic chamber 50 with air by means of the air filling valve 42 with the air emptying valve 43 closed. This process allows the barrier segment 4' to be kept above the water and easily and precisely placed in its intended location. The air filling valve 42 and air emptying valve 43 provide the ability to inflate the pneumatic chamber 50 with air, as well as the ability to pump continuously through the air filling valve 42 with the air emptying valve 43 open. he next step is to connect a hose with water at the appropriate pressure to the water filling valve 44 of the hydraulic chamber 51, which, with the water emptying valve 45 closed, fills the hydraulic chamber 51. Once this is done, barrier segment 4' must be placed precisely in place, and pumping the sand/water mixture into the ballast chamber 52 through the ballast emptying valve 46, with the ballast filling valve 47 open is to be started. With both valves open, the ballast chamber 31 can be filled with the sand-water mixture through the ballast emptying valve 46, and the water flows out through the ballast filling valve 47, causing the ballast to compact. When the ballast chamber 52 is completely filled, both valves are closed and the barrier segment 4' is fully unfolded.

[0026] The above steps are repeated with subsequent modules 4", 4"', ... , connecting them to each other in a known way permanently disconnectedly, e.g. by strings.

[0027] Disassembly should begin by disconnecting the barrier segment 4' from the barrier segment(s) 4", 4‴, located next to it. Next, the ballast chamber 52 is emptied of ballast. For this purpose, a hose with pressurized water is connected to the ballast filling valve 47, causing the sand-water mixture to flow out through the ballast emptying valve 46. After it is completely drained, the water emptying valve 45 and the water filling valve 44 of the hydraulic chamber 51 are opened. After this is done, the entire barrier segment 4' is transported to the shore. Air filling valve 42 and air emptying valve 43 open and empty the pneumatic chamber 50. The flexibility of the material of the barrier segment 4', 4", 4‴, ..., makes it possible to fold it and obtain many times smaller volume of the barrier segment 4', 4", 4‴, ... during transportation.

Labels

[0028]

1 - bathing site
2 - lake or watercourse
3 - floating platform
4 - segment
5 - ballast element
6 - lashing
7 - weight
8 - curtain
8' - barrier
9 - vertical stabilizing element
10 - oblique stabilizing element
11- horizontal segment
12 - Velcro connection
13 - driven element
14 - through-hole
15 - emergency shutter
16' - filling valve
16" - emptying valve
17 - emptying shutter
18' - ballast filling valve
18" - ballast emptying valve
19 - seat
20' - seat filling valve
20" - seat emptying valve
20‴ - Velcro shutter
21 - air chamber
22 - nozzle
23- support rope
24 - weight
25 - lashing
4', 4", 4‴ - barrier segment
26 - trapeze
27 - buoyancy chamber
28 - inspection valve
29 - air and water chamber
30 - valve
31 - ballast chamber
32 - filling valve
33 - emptying valve
34 - anchor chamber
35 - opening
36 - outlet
37 - inlet
38 - emergency flap
39- blocker
39' - initial segment
40 - drum
41 - winch
42 - air filling valve
43 - air emptying valve
44 - water filling valve
45 - water emptying valve
46 - ballast emptying valve
47 - ballast filling valve
48 lashings
49 - anchor
50 - pneumatic chamber
51 - hydraulic chamber
52 - ballast chamber

Claims

1. The bathing site is **characterized in that** a segmented curtain 8 is attached to the floating platform 3 for separating the bathing site 1 from the lake or watercourse 2, the curtain 8 comprising segments 4 in an amount selected according to the overall length of the floating platform 3 and its height, while the segments 4 of the curtain 8 are connected to each other in a known manner advantageously either by rope through fittings or by means of Velcro, while in the lower zone the segment 4 of the curtain 8 advantageously comprises a ballast element 5, wherein the curtain 8 is advantageously made of coated synthetic plastic fabric or steel, or transmission tape, or rubber.

2. The bathing site is, according to claim 1, **characterized in that** the curtain 8 is attached to the floating platform 3 in its longitudinal center line.

3. The bathing site is, according to claim 1, **characterized in that** the curtain 8 in its surface has an emergency shutter 15.

4. The bathing site is, according to claim 1, **characterized in that** the segments 4 of the curtain 8 either have a fixed height or consist of a corresponding number of horizontal segments 11 of adjustable height adapted to the of the lake or watercourse 2.

5. The bathing site is, according to claim 1, **characterized in that** each of the segments 4 of the curtain 8 is connected to a buoyancy element which is a floating platform 3 filled with a material with a density lower than that of water or air, which is advantageously connected via a lashing 6 to weight 7 and also advantageously to a vertical stabilizing element 9, with the segment 4 of the curtain 8 advantageously additionally accommodating an emergency shutter 15.

6. The bathing site is, according to claim 1, **characterized in that** each of the segments 4 of the curtain 8 has advantageously vertical stabilizing elements 9, whereby advantageously successive vertical stabilizing elements 9 are connected to each other by oblique stabilizing elements 10.

7. The bathing site is, according to claim 1, **characterized in that** each of the segments 4 of the curtain 8 advantageously has a ballast element 5 of a flexible material advantageously of polyethylene or of metal, the ballast element 5 having a ballast filling valve 18' and a ballast emptying valve 18" for filling and emptying with solid materials having a density greater

than water, while the curtain 8 consists of segments 4 or horizontal segments 11, the segments 4 of the curtain 8 being connected to each other in a known manner advantageously by string connections, either by Velcro, or by a zipper, or by a string connection with fittings.

8. The bathing site is, according to claim 1, **characterized in that** the vertical stabilizing element 9 and the oblique stabilizing element 10 are connected to the segment 4 of the curtain 8 advantageously either by Velcro or by strings, the height of the individual segments 4 of the curtain 8 being approximately equal to the of the bathing site in the specified zone, and the individual segments 4 of the curtain 8 having a height and shape adapted to the depth and slope of the bottom at the point where they are connected are permanently disconnected in a known manner advantageously by Velcro.

9. The bathing site is, according to claim 1, **characterized in that** there are attached to the segments 4 of the curtain 8 on the side of the lake or watercourse 2 advantageously driven elements 13 of rigid material, advantageously of metal, or wood, or plastic, which pass through the vertical through-hole 14 of the ballast element 5, the driven elements 13 being attached to the curtain 8 in a known manner advantageously corded with fittings or threaded.

10. The bathing site is, according to claim 1, **characterized in that** the segment 4 of curtian 8 is connected to a vertical stabilizing element 9, which is approximately cylindrical in shape and has a filling valve 16' and an emptying valve 16" of ballast element 5, and has an emptying shutter 17 located in the wall of the vertical stabilizing element 9, while the oblique stabilizing element 10 has a filling valve 16' and an emptying valve 16' of ballast material, and has an emptying shutter 17 for draining ballast material, located in the wall of the oblique stabilizing element 10 .

11. The bathing site is, according to claim 1, **characterized in that** the segment 4 of the curtain 8 advantageously comprises a ballast element 5, the ballast element 5 advantageously having the shape of a horizontal cylinder and having a ballast filling valve 18' and a ballast emptying valve 18', the individual ballast elements 5 advantageously being connected to each other in a known manner.

12. The bathing site is, according to claim 1, **characterized in that** the lower part of the curtain 8 is attached to a ballast element 5 advantageously in the shape of a cuboid in its longitudinal center line, the ballast element 5 having a ballast filling valve 18' and a ballast emptying valve 18" and a vertical through-hole 14 for a driven element 13.

13. The bathing site is, according to claim 1 or 9, **characterized in that** the ballast element 5 constituting the seat 19 has an air chamber 21 with nozzles 22, as well as a seat filling valve 20' and a seat emptying valve 20" and a Velcro shutter 20" located in the front zone, the air chamber 21 being located in the upper zone of the seat 19.

14. The bathing site is, according to claim 1, **characterized in that** the barrier 8' is made up of segments 4', 4", 4", 4", advantageously placed on at least two supporting cables 23 located on the side of the lake or watercourse 2, the barrier 8' having lashings 25 with weights 24.

15. The bathing site is, according to claim 1, **characterized in that** the barrier segment 8' is a prism with a trapezoidal base 26, the shorter side of the base of which is located on the side of the bathing site 1 and has four chambers.

16. The bathing site is, according to claim 1, **characterized by** the fact that the upper chamber is a buoyancy chamber 27 and has an inspection valve 28.

17. The bathing site is, according to claim 1, **characterized in that** the air-water chamber air and water chamber 29, located below the buoyancy chamber 27, has a valve 30 for filling and emptying the air and water chamber 29.

18. The bathing site is, according to claim 1, **characterized in that** below the air and water chamber 29 is located a ballast chamber 31 with a filling valve 32 for filling the ballast chamber 31 and with an emptying valve 33 for emptying the ballast chamber 31

19. The bathing site is, according to claim 1, **characterized in that** in the lower zone of the barrier segment 2 there is located, open from below, an anchor chamber 34 having an opening 35.

20. The bathing site is, according to claim 1, **characterized in that** the barrier segment 8' has an outlet 36 on one side surface and an inlet 37 on the other side surface.

21. The bathing site is, according to claim 1, **characterized in that** in the front wall of the ballast chamber 31, an emergency cover flap 38 is located on a spring.

22. The bathing site is, according to claim 1, is **characterized by** the fact that the support ropes 23 along the entire length of the barrier are a single section.

23. The bathing site is, according to claim 1, **characterized in that** the support ropes 23 along the entire

length of the barrier are a permanently disconnected set of several sections.

24. The bathing site is, according to claim 1, **characterized in that** the segment 4 is a pneumatic-hydraulic segment for separating the bathing area from the lake's other part and is anchored by lashings 48 and anchors 49 on support ropes and is made of flexible material and consists of three chambers: pneumatic chamber 50, hydraulic chamber 51, and ballast chamber 52, of which the upper pneumatic chamber 50 partially submerged in water, has an air filling valve 42 and an air emptying valve 43, is seated on a hydraulic chamber 51 having a water filling valve 44 and a water emptying valve 45, and this one is seated on a ballast chamber 52 having a ballast filling valve 47 and a ballast emptying valve 46, with each of the segments 4 connected in a known manner to form bathing site 1.

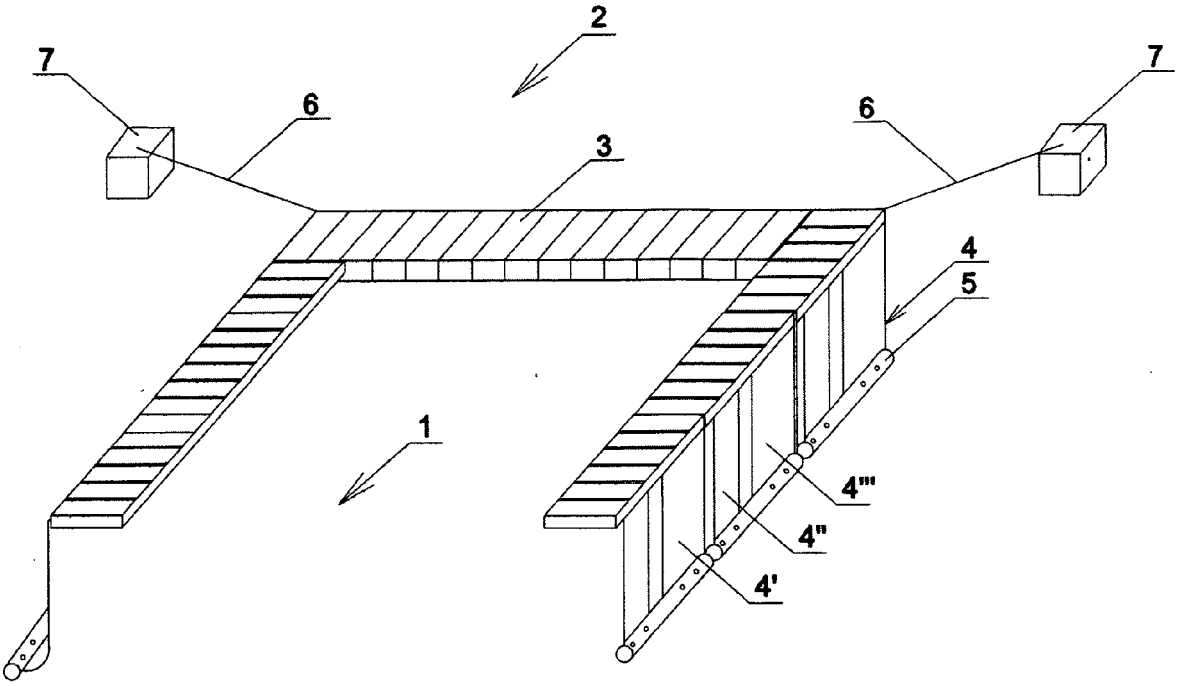


Fig. 1

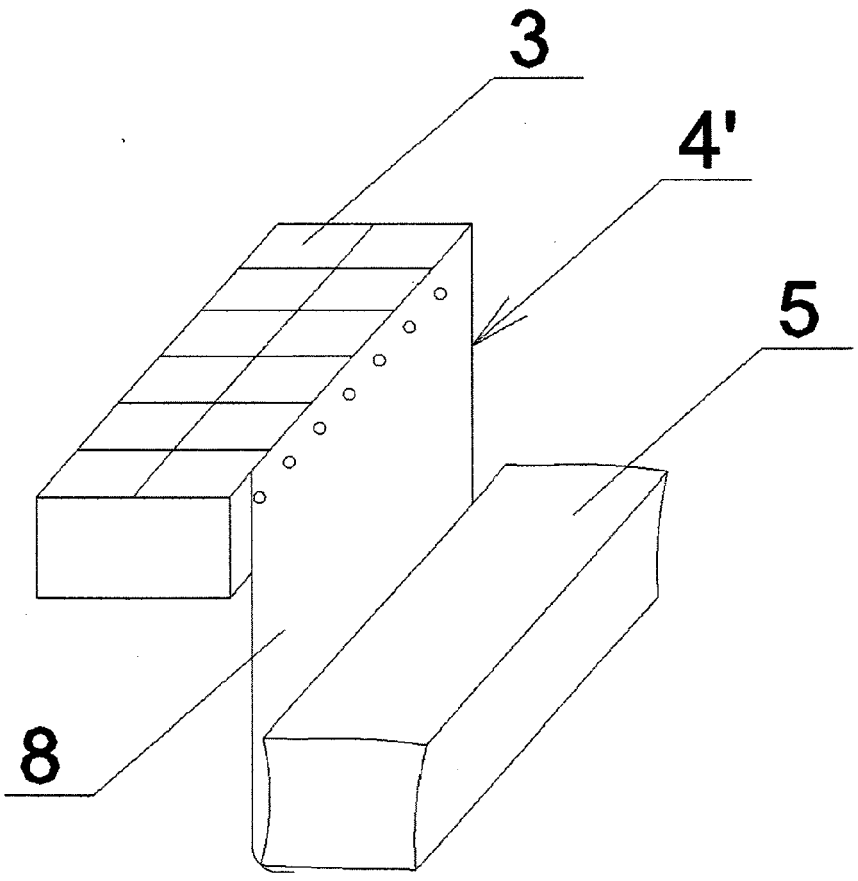


Fig. 2

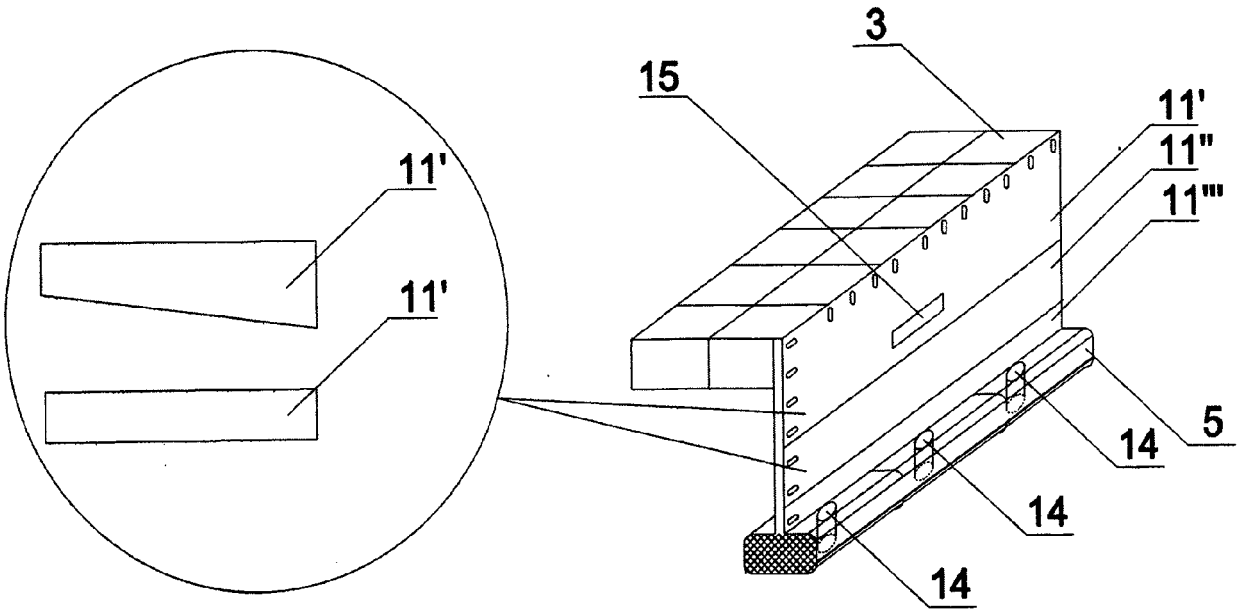


Fig. 3

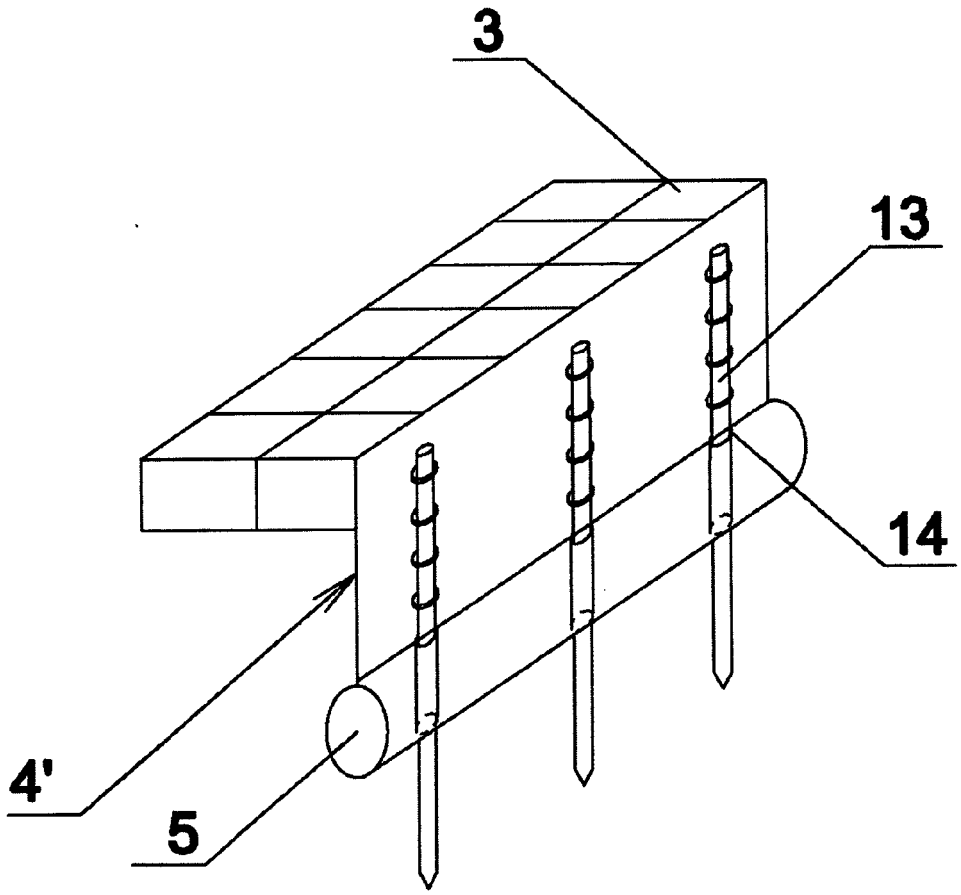


Fig. 4

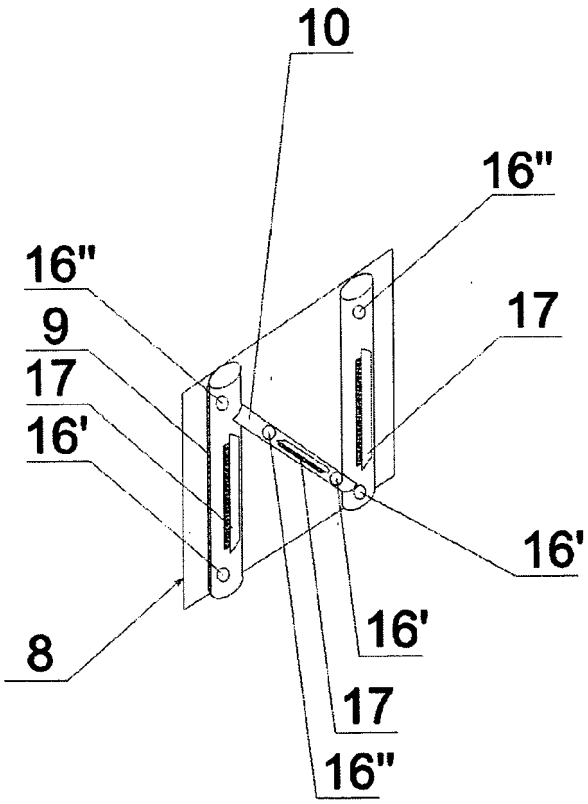


Fig. 5

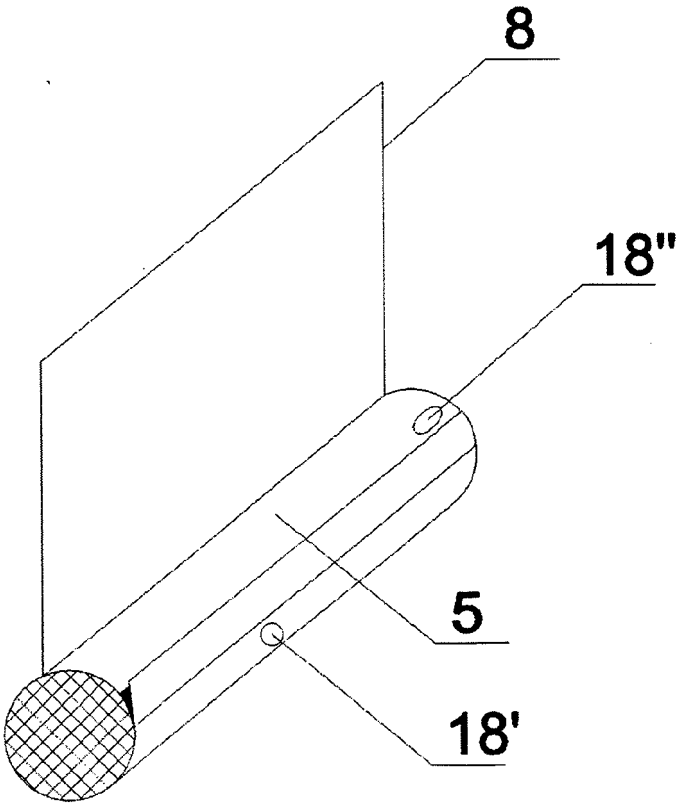
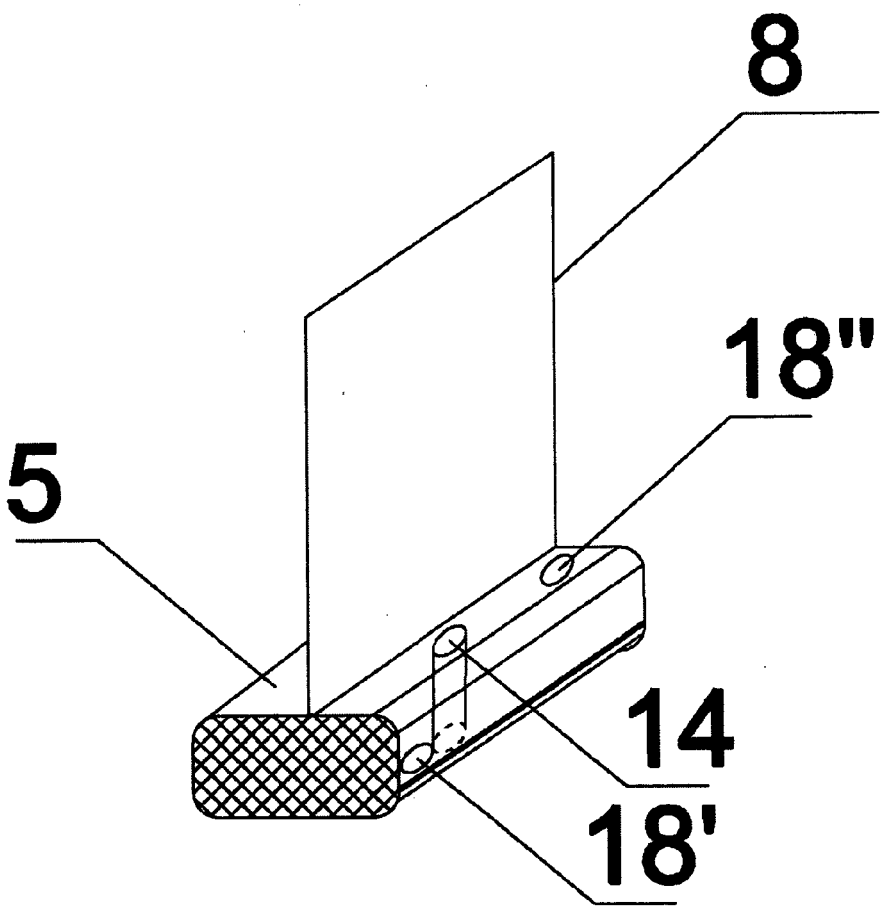


Fig. 6



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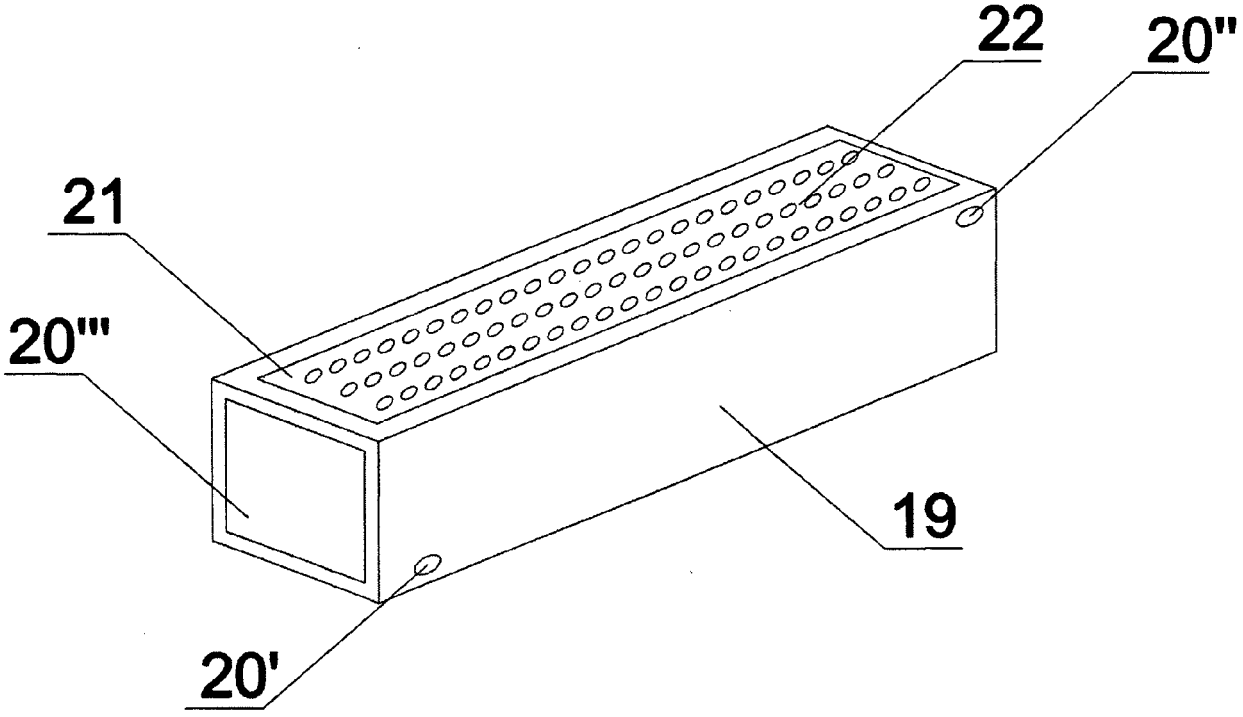

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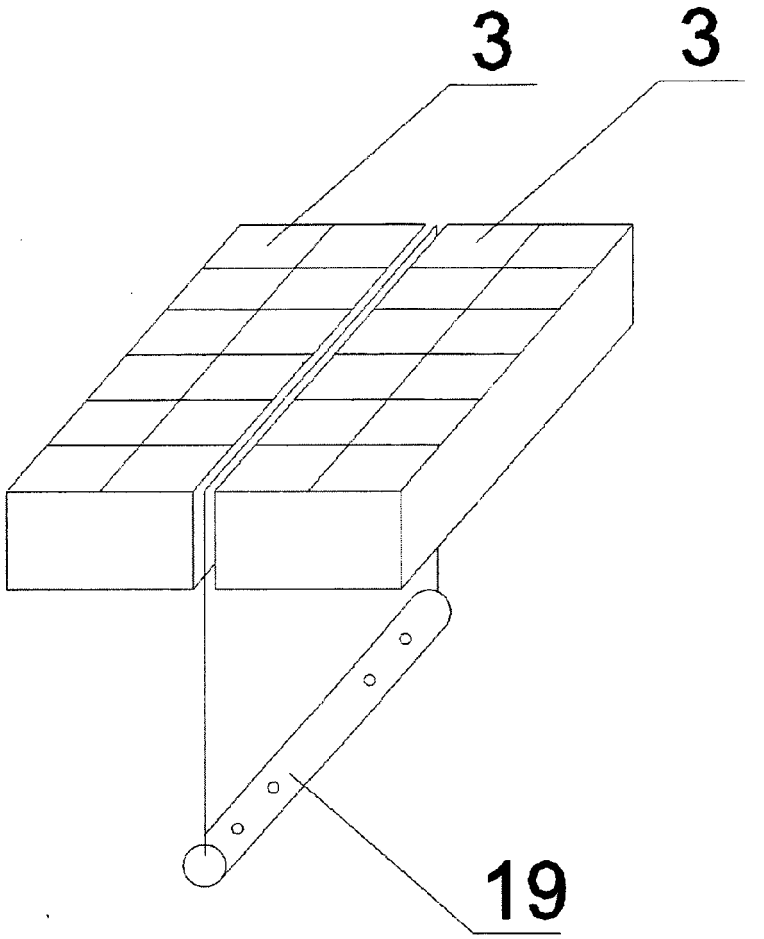

Fig. 9

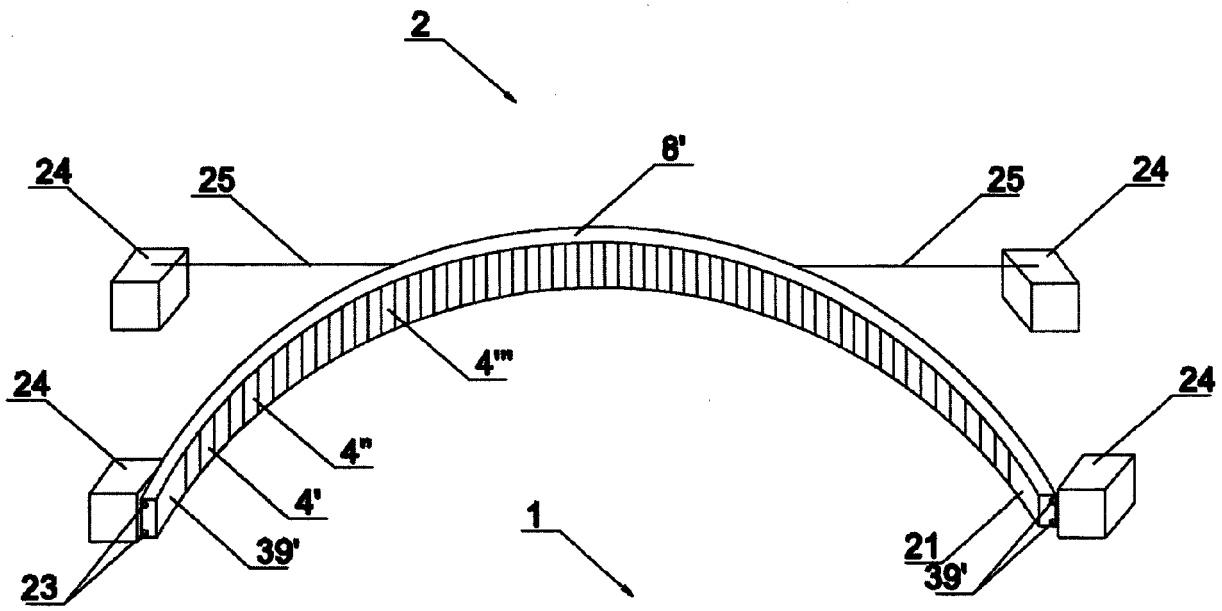

Fig. 10

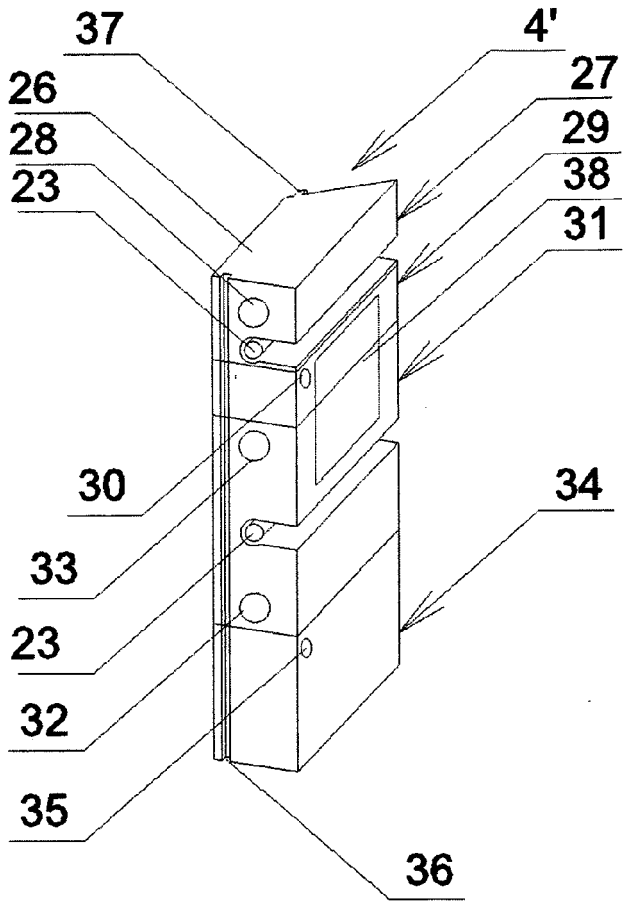

Fig. 11

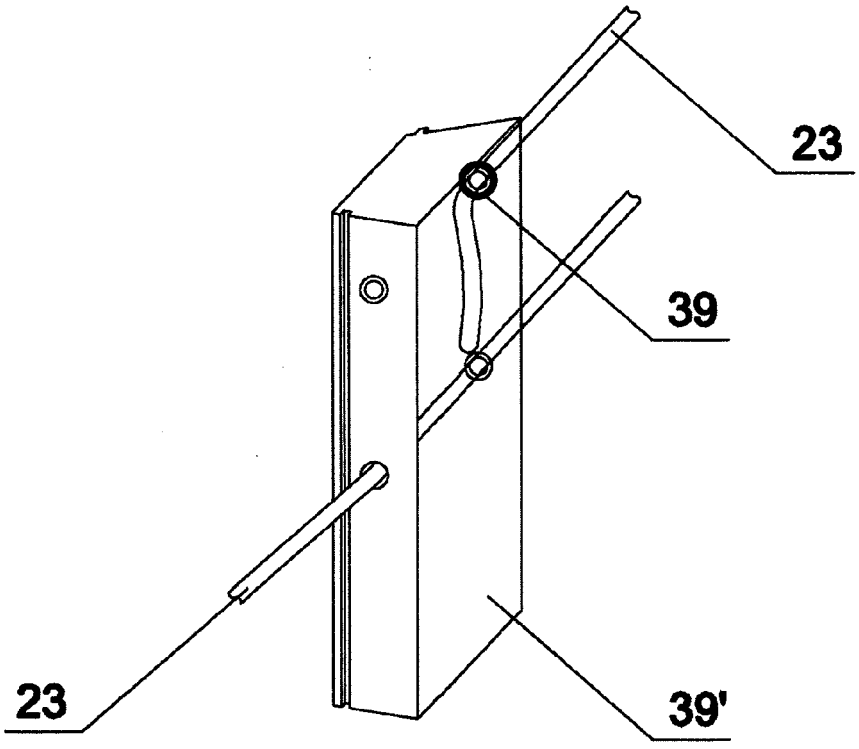

Fig. 12

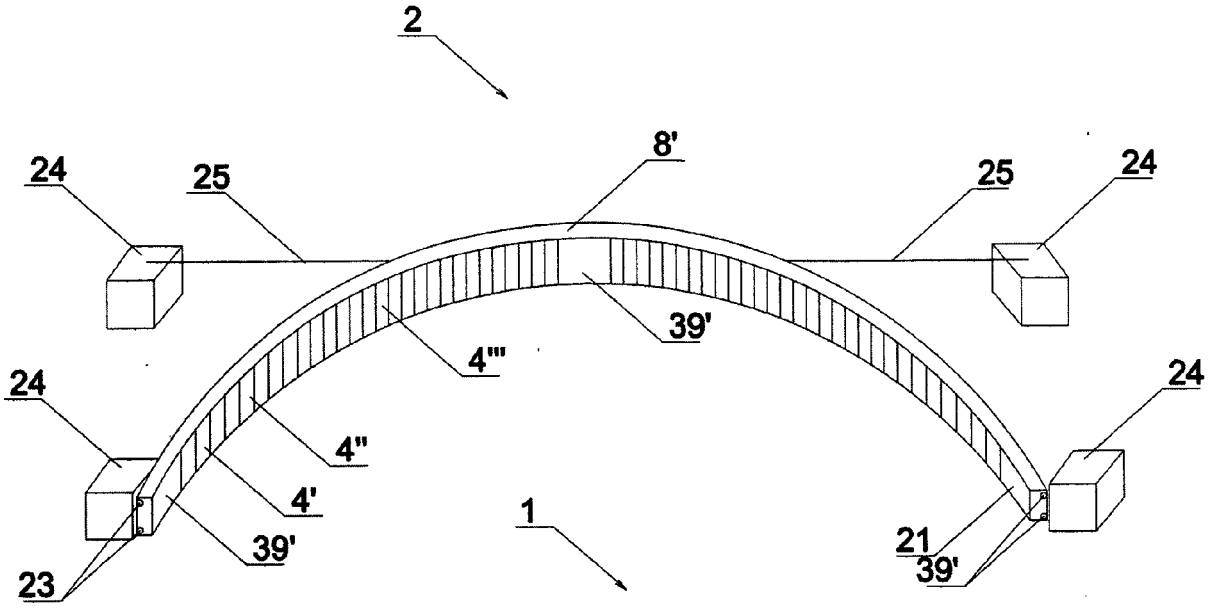

Fig. 13

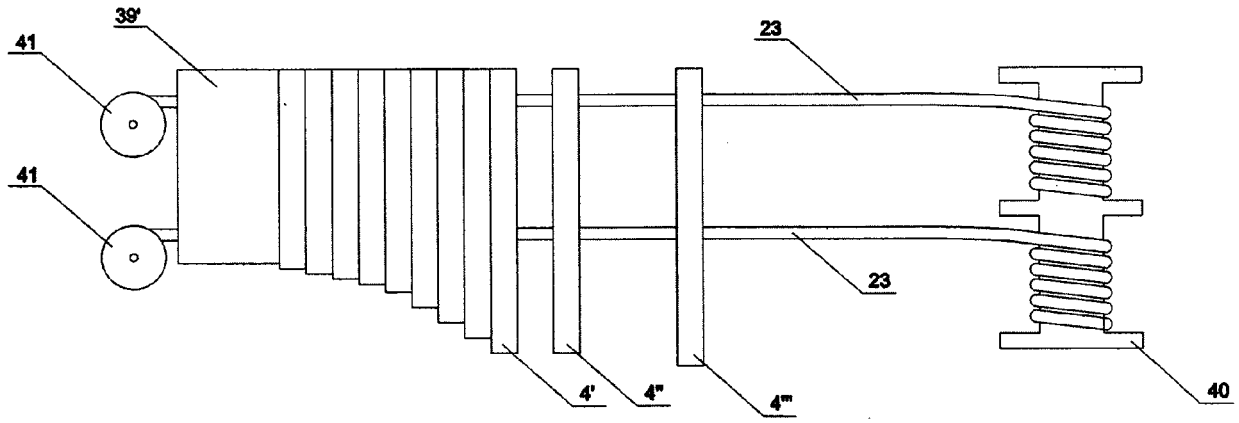

Fig. 14

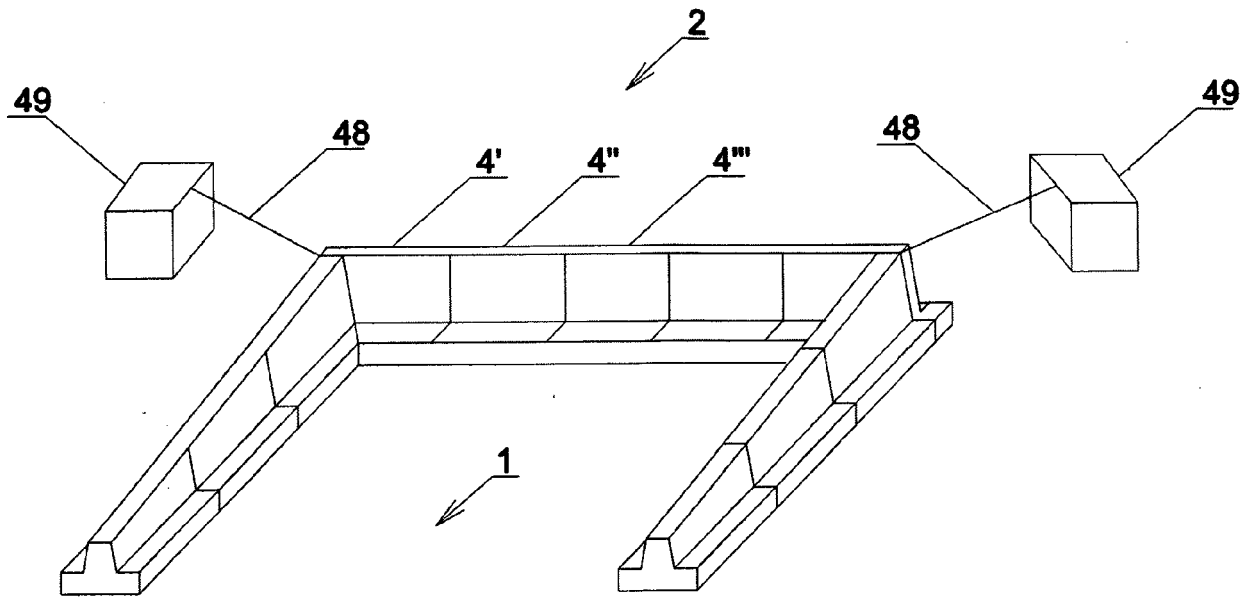

Fig 15

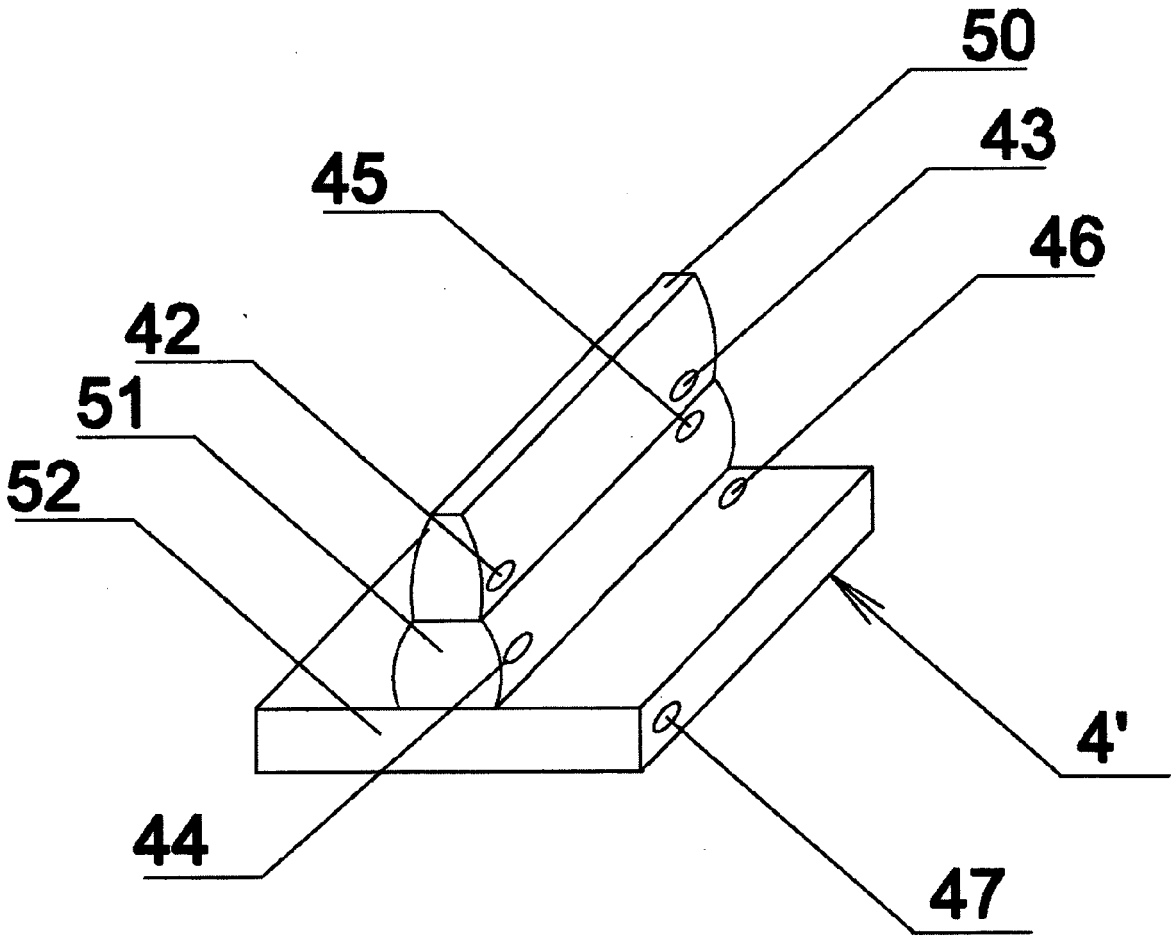

Fig. 16

REFERENCES CITED IN THE DESCRIPTION

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- PL 223969 **[0007]**
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Non-patent literature cited in the description

- Polish Water Law. *Law Gazette,* 2021 **[0002]**
- Polish Water Low. *Law Gazette,* 2021 **[0005]**