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(54) **Modular shower**

(57) The present innovation relates to a modular shower cabin comprising a modular structure with at least one lower base (2), walls (3, 4a, 4b, 5) and at least one upper cover (9), said modular structure being configured in such a manner that said walls (3, 4a, 4b, 5) can be coupled in a removable manner to one another, to the lower base (2) and to the upper cover (9) through interlocking means (10) adapted to join at least two components of said modular structure, characterized in that said interlocking means (10) comprise a first housing (11) produced in a first component of the modular structure, a second housing (12) produced in a second component of said modular structure and a joining element (13) inserted partly in said first and said second housing and coupled with force therewith to maintain the two components joined.

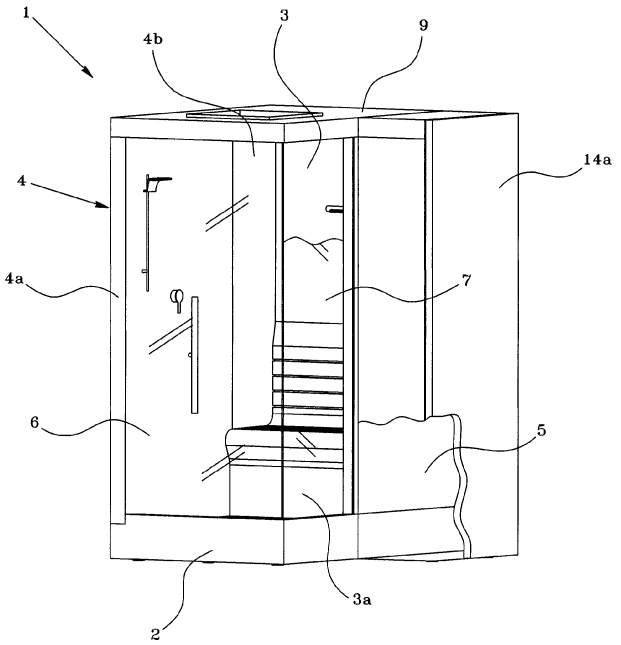

Fig. 1

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Description

[0001] The present innovation relates to a modular shower cabin. More in detail, it relates to a multi-function shower cabin configured to allow rapid and simple installation and also simple removal from the space in which it is positioned.

[0002] The use of shower cabins, and in particular multi-function shower cabins, is currently increasingly widespread in domestic environments, but above all in professional environments, such as wellness centers, gyms and the like.

[0003] These places are generally equipped to provide their clients with a given series of therapeutic activities, such as chromotherapy, aromatherapy, thalassotherapy, aqua therapy, music therapy, and the like, using saunas, Turkish baths, Roman baths, or appropriately equipped cabins.

[0004] The need to obtain a larger number of therapies in increasingly small spaces has led to the production of multi-function cabins, capable of providing the client with a greater number of therapies, even simultaneously.

[0005] Therefore, complex multi-function shower cabins are configured, which must be assembled by highly skilled operators. In fact, cabins of this type are produced on site with the action of various operators, not only with plumbing or electronic skills for operation of the various systems related to the different therapies, but also with masonry skills to produce the supporting structure, the walls and the internal and external covering.

[0006] Therefore, the production of these cabins according to prior art requires in some cases even several days and implies considerable production costs.

[0007] When wishing to install a new cabin, the center or gym is therefore obliged to interrupt its activity, at least in the place of assembly, to enable the aforesaid operations.

[0008] Moreover, cabins of this type also comprising ad hoc masonry portions are difficult, if not impossible, to disassemble, for example for rearrangement of the internal layout of the center or for repositioning in a new wellness center.

[0009] In fact, multi-function shower cabins capable of providing one or more of the aforesaid therapies or treatments are also increasingly in demand in domestic environments.

[0010] In the same way, in this case, if wishing to install a shower cabin with high quality and aesthetic standards, the cabin must be produced on site with the action of masonry, plumbing and electrical workers, with the resulting costs.

[0011] Consequently, if the user wishes to move to new premises, he or she is obliged to leave the wellness shower cabin in its original location, resulting in loss of the investment made.

[0012] Another problem of prior art shower cabins, and in particular of multi-function shower cabins, concerns any maintenance operations required.

[0013] In fact, these cabins are generally provided with an equipment compartment, usually positioned behind one of the lateral walls, leading from which are the pipes, ducts and cables that supply water, steam or electricity to the various accessories, adapted to provide one or more of the aforesaid treatments the cabin can offer.

[0014] These pipes or ducts generally run behind the lateral walls from said equipment compartment to the point in which the accessory is positioned.

[0015] In general, assembly of these pipes takes place by joining several elements, performed on site by the plumber or fitter.

[0016] In the case of leaks or malfunctioning of these elements, to make the repairs it is therefore necessary to remove one or more lateral walls or other parts of the cabin.

[0017] Given that the various parts of these cabins are generally assembled in a permanent manner (also with masonry works), any maintenance operations, besides requiring skilled operators, can be carried out only with damage to some components during removal, which must then be substituted.

[0018] In this context, the object of the present innovation is to propose a modular shower cabin, and more in particular a multi-function shower cabin, which overcomes the drawbacks of prior art.

[0019] In detail, the object of the innovation is to propose a modular shower cabin, which can be installed in a rapid and simple manner without requiring highly skilled operators.

[0020] More in detail, the object of the present innovation is to propose a modular shower cabin configured to be disassembled and subsequently re-assembled in another place in a rapid manner, without damaging it and without requiring to substitute any components.

[0021] Another object of the present innovation is to propose a modular shower cabin, and in particular a multi-function shower cabin, which enables maintenance operations to be carried out without requiring to disassemble the cabin and without damage to any parts.

[0022] The aforesaid objects are substantially accomplished by a modular shower cabin comprising a modular structure with at least one lower base, lateral walls and at least one upper cover, said modular structure being configured in such a manner that said side walls can be coupled in a removable manner to one another, to the lower base and to the upper cover through interlocking means adapted to join at least two components of said modular structure, **characterized in that** said interlocking means comprising a first housing produced in a first component of the modular structure, a second housing produced in a second component of said modular structure and a joining element inserted partly in said first and said second housing and coupled with force therewith to maintain the two components joined.

[0023] In detail, said joining element is constituted by a bar having a quadrilateral section, and said housings are constituted by grooves produced along an edge or

on a face of said components of the modular structure and also have a quadrilateral section of complementary shape to that of said bar.

[0024] According to the innovation the lower base of the modular shower cabin is provided with a pedestal, interposed between it and the floor, configured to vary the inclination of the base so that it is always perfectly flat.

[0025] Preferably, said pedestal comprises a board provided with a plurality of feet connected thereto through a screw housed in appropriate threaded through holes produced in the board; therefore, by acting on the feet it is possible to vary the distance of the board from the floor and therefore the inclination of the base.

[0026] The shower cabin also comprises a hydraulic circuit, adapted to supply a plurality of accessories, with a plurality of pipes to connect said accessories to an equipment compartment of the cabin. According to the innovation, said pipes are provided with connectors positioned only above the upper cover of the cabin, and therefore easily accessible in case of maintenance.

[0027] Further characteristics and advantages will be more apparent from the indicative, and therefore non-limiting, description of an example of a preferred but not exclusive embodiment of the innovation, as illustrated in the accompanying figures, wherein:

- Fig. 1 is a perspective view of a modular shower cabin according to the innovation;
- Figs. 2a and 2b are two sectional views of the interlocking means adapted to join the components of the modular structure of the shower cabin of Fig. 1;
- Fig. 3 is a top view of the base of the shower cabin of Fig. 1;
- Fig. 4 is a sectional view of the base of the shower cabin of Fig. 1;
- Fig. 5 is a perspective view of the base of the shower cabin of Fig. 1;
- Figs. 6 to 16 are perspective views illustrating the shower cabin of Fig. 1 during the assembly steps;
- Fig. 17 is a top view of the shower cabin of Fig. 1;

[0028] With reference to the accompanying figures, the modular shower cabin, indicated as a whole with 1, comprises a modular structure with at least one lower base, side walls and an upper cover mutually joined to form a closed compartment adapted to accommodate at least one person to receive one or more treatments. In detail, said structure comprises a lower base, indicated as a whole with 2, a back wall 3, a left lateral wall 4, a right lateral wall 5, a front wall 6 and a door 7 hinged to said right lateral wall 5 to allow access to the compartment 8 of the shower cabin.

[0029] Resting on the aforesaid walls is an upper cover 9 which closes said compartment 8.

[0030] Preferably, the left lateral wall 4 comprises two contiguous adjacent portions 4a and 4b, so as to reduce its weight and facilitate assembly and transport operations.

[0031] For the same reason, said walls are produced with an inner layer in expanded polyester, and are then coated with epoxy resin to make them totally watertight. Preferably, one or more of said walls can be made of glass, or other transparent materials, to allow light to pass to the inside the compartment 8, and to give the cabin a more aesthetically pleasing appearance.

[0032] In the embodiment illustrated, the front wall 6 and the door 7 are made of glass. To enable the person to receive the treatment in conditions of greater comfort, a seat 3a is provided inside the compartment 8. Said seat is placed against the back wall 3 and is preferably produced in one piece therewith.

[0033] According to the innovation, said modular structure is configured in such a manner that the aforesaid components (walls, lower base and said upper cover) are can be coupled to one another other in a removable manner through interlocking means illustrated in Fig. 2.

[0034] Said interlocking means are designed to join at least two adjacent components of the modular structure, such as two contiguous lateral walls, one lateral wall with the lower base or one lateral wall with the upper cover.

[0035] In the preferred embodiment of the innovation, the walls can be coupled to one another, to the base and to the cover by means of said interlocking means.

[0036] With reference to Fig. 2a, said interlocking means indicated as a whole with 10 comprise a first housing 11 produced in a first component C1 of the modular structure, a second housing 12 produced in a second component C2 of said modular structure and a joining element 13 coupled with force with said first and said second housing to maintain them joined.

[0037] In detail, said housings 11 and 12 are constituted by grooves produced along a perimeter edge or on a face of one of the components of the modular structure (walls, lower base, upper cover).

[0038] The joining element 13 is constituted by a bar having a section of complementary shape to that of said housings and is housed partly inside each housing with forced coupling that allows the two components to be maintained in position, giving solidity to the structure.

[0039] Said joining element preferably has a section of quadrilateral polygonal shape and even more preferably rectangular.

[0040] The grooves 11 and 12 of the respective components of the structure also have a quadrilateral section of complementary shape to that of the bar 13.

[0041] More in detail, the area of the section of each groove is substantially half with respect to the area of the section of the bar 13.

[0042] In this way, when the joining element 13 is inserted completely inside the grooves 11 and 12, the two components C1 and C2 of the modular structure abut against each other (Fig. 2b).

[0043] Said joining element 13 is preferably made of wood or the like, which simultaneously offers good mechanical strength and slight deformability to adhere better to the internal walls of the grooves 11 and 12.

[0044] The forced coupling between the joining element and the grooves is capable of ensuring both a solid union of the components (and therefore good stability of the modular structure), and watertightness of the compartment 8 of the cabin.

[0045] If necessary, the union between the various components of the modular structure can be aided by glues spread on the contact surfaces.

[0046] Alternatively, the joining element 13 can be made of metal, for example aluminum, or in a plastic material, such as PVC or the like. In this case the section of the bar can be hollow if necessary, in such a manner as not to make the structure too heavy.

[0047] The dimension of the section of the grooves relative to that of the joining element is calculated in such a manner as to allow insertion thereof in the housings through manual pressure or, in any case, without specific tools.

[0048] In this way, assembly of the modular structure of the cabin is simple and rapid and can always be carried out even by unskilled operators.

[0049] Likewise, the structure can be disassembled in the same rapid and fast manner without the risk of damaging any of the components.

[0050] In the embodiment illustrated the interlocking means 10 are provided between:

- the portions 4a and 4b of the left lateral wall 4;
- the portion of left lateral wall 4b and the back wall 3;
- the back wall 3 and the right lateral wall 5;

and between each of the aforesaid walls with:

- the lower base 2; and
- the upper cover 6.

[0051] Against the right lateral wall 5 there is provided an equipment compartment 14 inside which there can be installed all the devices that supply one or more accessories (described better below) adapted to provide a specific treatment for the person accessing the cabin.

[0052] Said equipment compartment 14 comprises a box-shaped element 14a secured integrally to the right lateral wall 5.

[0053] With reference to Figs. 3 to 5 there is illustrated the lower base 2 on which the rest of the modular structure of the cabin is assembled.

[0054] Advantageously, said lower base 2 is provided with a pedestal 15, interposed between it and the floor, which enables variation of its inclination to ensure that the base is always perfectly flat.

[0055] In detail, said pedestal 15 comprises a board 15a provided with a plurality of feet 15b connected thereto through a screw housed in specific threaded through holes 15c.

[0056] By acting on the screw, screwing it into the board 15 to a greater or lesser degree, it is possible to vary the height of the feet 15b and therefore the distance of the board from the floor.

[0057] By suitably adjusting the feet 15b, it is thus possible to take the board 15a, and consequently also the lower base 2 resting thereon, to a perfectly flat position. Advantageously, the screws of the feet are accessible from the upper surface of the board 15a via the through holes 15c in such a manner as to be able to vary the height of the feet without removing the board.

[0058] In this way, it is possible to install the shower cabin in an optimal manner without having to take any action on the pre-existing floor and without damaging it. Preferably, in the lower part of the base 2 there is produced a housing 17 adapted to house said pedestal 15, in such a manner that the lower edge of the base remains substantially at the level of the floor to improve the aesthetic appearance. With reference to Figs. 6 to 16 there are illustrated the steps of the assembly process of the shower cabin, which takes place as follows.

[0059] Firstly, the pedestal 15 is placed on the ground, as illustrated in Fig. 6, and the feet 15b are adjusted, with the aid of a level or the like, so as to arrange the board 15a perfectly flat relative to the floor.

[0060] Subsequently, the lower base 2 is positioned on top of the pedestal 15 taking care that this latter is inserted correctly in the housing 17, as illustrated in Fig. 7.

[0061] After correct positioning of the base, as illustrated in Fig. 8, the portion 4b of the left lateral wall 4 is positioned on the base 2 and coupled thereto through the interlocking means 10.

[0062] As already described previously, the union between the wall 4b and the base 2 takes place by means of the joining element 13 which is inserted partly into the housings produced on the lower edge of said wall 4b and on the lower surface of the base 2.

[0063] In the same way, as illustrated in Fig. 9, the portion 4a of the lateral wall 4 is positioned, coupling it through said interlocking means 10 both to the contiguous portion 4b, and to the lower base 2.

[0064] Subsequently, the back wall 3 and the seat 3a (produced in one piece therewith) are positioned, coupling it through the interlocking means 10 both to the portion 4b of the wall 4 and to the base 2, as visible in Fig. 10.

[0065] Subsequently, as illustrated in Fig. 11, the right lateral wall 5 is positioned, coupling it by means of the interlocking means 10 to the back wall 3 and to the base 2.

[0066] Preferably, the right lateral wall 5 is already assembled with the box-shaped element 14a which encloses the equipment compartment 14.

[0067] As illustrated in Fig. 12, the upper cover 9 is then positioned, coupling it through the interlocking means 10 to the upper edge of the walls 3, 4a, 4b and 5.

[0068] At this point, the operator or operators who are assembling the cabin can proceed with positioning of the modular structure of the cabin before assembly of the accessories, visible in Fig. 13.

[0069] Then, as illustrated in Fig. 14, the front wall 6 made of glass is positioned and fixed by inserting it in

specific housings produced on the lower base 2 and on the upper cover 9. Preferably, a sealant is used to ensure watertightness between said front wall 6, the lower base 2, the upper cover 9 and the portion 4b of the left lateral wall 4.

[0070] Finally, as illustrated in Fig. 15, the door 7 made of glass 40 is positioned and fixed through appropriate hinges (not visible in the figure) arranged on the lower base 2 and on the upper cover 9.

[0071] Once the water and/or electrical connections to supply the various accessories with which the multi-function shower cabin is equipped have been made, the equipment compartment 14 can be closed as illustrated in Fig. 16.

[0072] As can be understood from the description above, the assembly operations of the modular shower cabin forming the subject matter of the present innovation are rapid and simple to perform, even by unskilled operators, and do not require any masonry works in the place in which it is installed.

[0073] As mentioned above, the modular shower cabin can be equipped with different accessories to provide the user with a plurality of treatments, such as aqua therapy, chromotherapy, aromatherapy, thalassotherapy, Turkish bath and/or steam bath, etc.

[0074] With reference to Fig. 13, in the embodiment illustrated the modular shower cabin comprises a shower head 20, controlled by a mixer 21, and mounted slidable on an appropriate support rod 22 fixed to the left lateral wall 4b.

[0075] On said lateral wall there is also provided a bar 23 from which water can flow in more or less nebulized form for lateral massage of the user of the cabin.

[0076] On the back wall 3, above the seat 3a, there is also fixed a tap 24 from which water can flow in cascade form, to massage the neck of the user.

[0077] On the lower surface of the cover 46, i.e. the one facing the inside of the compartment 8 of the cabin, there are present nozzles 25 through which water, water in nebulized form or water mixed with scented essences can flow Instead, on the right lateral wall, not visible in the figure, there is provided at least one nozzle for dispensing steam.

[0078] Preferably, the cabin is also provided with means for reproducing sounds and tunes for music therapy treatments and light emitting means for chromotherapy treatments.

[0079] The cabin also comprises a hydraulic circuit to which
the various water and steam emitting means are connected, and an electrical circuit to which the various devices are connected, so as to be able to supply and control them.

[0080] Also connected to the electrical circuit are networks of heating elements, not illustrated in the figures, arranged in the back wall, for example in the seat 3a and on the backrest to offer the user greater comfort during the treatments.

[0081] In detail, said hydraulic circuit comprises a plurality of pipes 26 which connect the equipment compartment 14 to the various accessories, to supply them with water or with steam, produced by a boiler positioned inside said compartment.

[0082] Advantageously, according to the innovation pipes rise vertically from the equipment compartment to the top part of the cabin and descend again vertically along the walls to the point in which the accessory to be supplied is positioned.

[0083] In this way, it is possible to position the joining connectors 27 (illustrated schematically in Fig. 17) only in the upper part of the cabin, i.e. above the upper cover 9.

[0084] In practice, said pipes 26 do not have breaks or joins in the back part of the walls.

[0085] In case of problems or of leaks in the hydraulic circuit, it is therefore possible to carry out repair and maintenance operations in a simple and rapid manner, directly accessing the equipment compartment or connectors positioned above the upper cover, without requiring to disassemble any component of the cabin.

[0086] The present innovation, as described and illustrated, is susceptible to numerous modifications and variants all included in the scope of the inventive concept; moreover, all details can be substituted by other technically equivalent elements.

Claims

1. A modular shower cabin comprising a modular structure with at least one lower base (2), walls (3, 4a, 4b, 5) and at least one upper cover (9), said modular structure being configured in such a manner that said walls (3, 4a, 4b, 5) can be coupled in a removable manner to one another, to the lower base (2) and to the upper cover (9) through interlocking means (10) adapted to join at least two components of said modular structure, **characterized in that** said interlocking means (10) comprise a first housing (11) produced in a first component of the modular structure, a second housing (12) produced in a second component of said modular structure and a joining element (13) inserted partly in said first and said second housing and coupled with force therewith to maintain the two components joined.

2. The modular shower cabin according to claim 1, **characterized in that** said joining element (13) is constituted by a bar having a quadrilateral section, and said housings (11, 12) are constituted by grooves produced along an edge or on a face of said components of the modular structure, said grooves having a quadrilateral section of complementary shape to that of said bar (13).

3. The modular shower cabin according to claim 2, **characterized in that** the area of the section of each

groove (11, 12) is substantially half relative to the area of the section of the bar (13).

4. The modular shower cabin according to claim 3, **characterized in that** said bar (13) is made of wood.

5. The modular shower cabin according to claim 3, **characterized in that** said bar (13) is made of metal or of a plastic material.

6. The modular shower cabin according to any one of the preceding claims, **characterized in that** said lower base (2) is provided with a pedestal (15), interposed between it and the floor, configured to vary the inclination of the base so that it is always perfectly flat.

7. The modular shower cabin according to claim 6, **characterized in that** said pedestal (15) comprises a board (15a) provided with a plurality of feet (15b) connected thereto via a screw housed in specific threaded through holes (15c) produced in the board (15a).

8. The modular shower cabin according to claim 6, **characterized in that** in the lower part of the lower base (2) there is produced a housing (17) adapted to house said pedestal (15) in such a manner that the lower edge of the base remains substantially at the level of the floor.

9. The modular shower cabin according to any one of the preceding claims, **characterized in that** it comprises a hydraulic circuit adapted to supply a plurality of accessories (20, 23, 24) with water or steam, said hydraulic circuit comprising a plurality of pipes (26) to connect said accessories to an equipment compartment (14) of the cabin, said pipes (26) being provided with connectors (26) positioned above the upper cover (9) of the cabin.

10. The modular shower cabin according to any one of the preceding claims, **characterized in that** it comprises water dispensing means (20, 23, 24), steam dispensing means, aroma dispensing means, light emitting means and means for reproducing sounds or tunes.

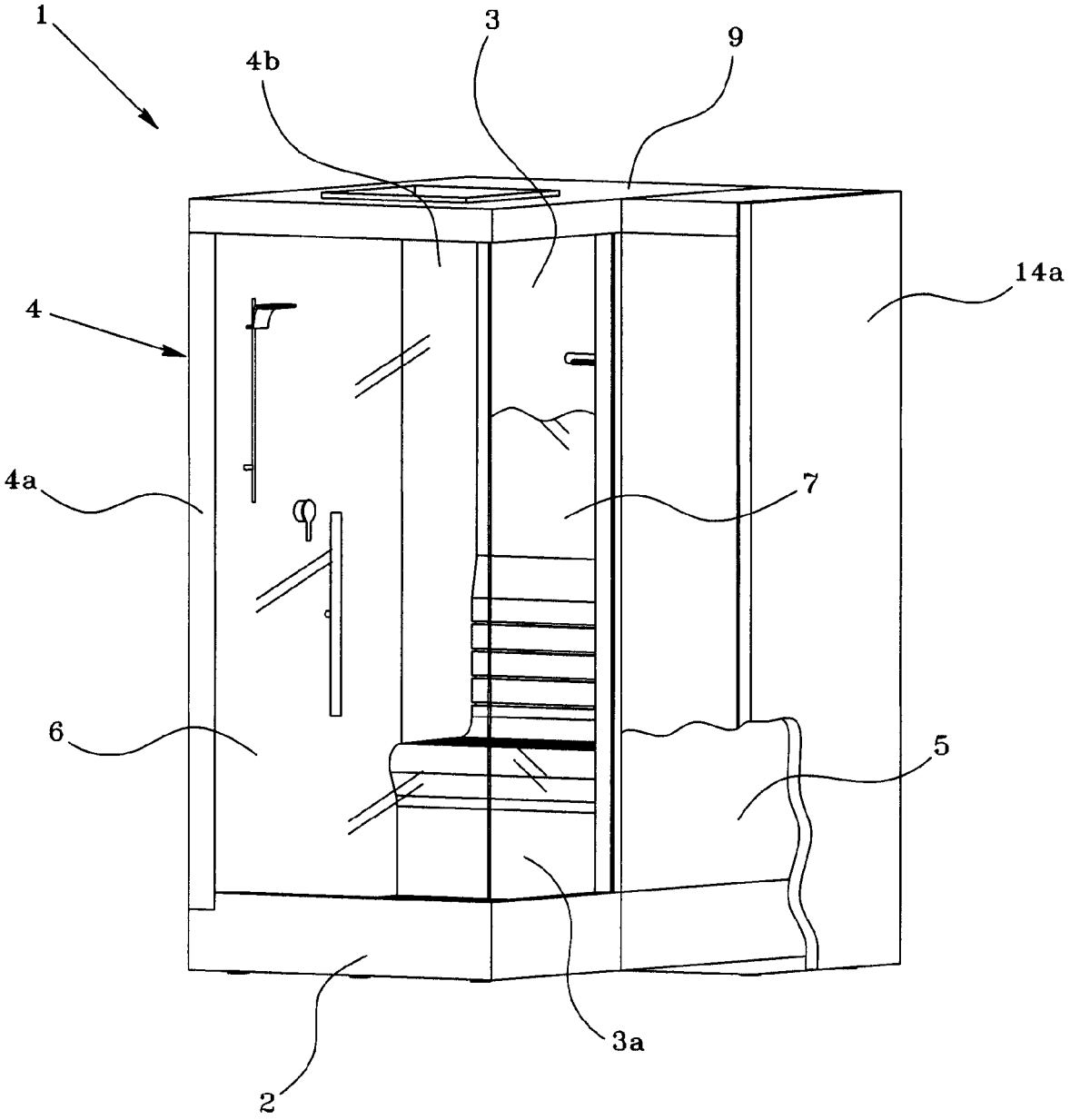

Fig. 1

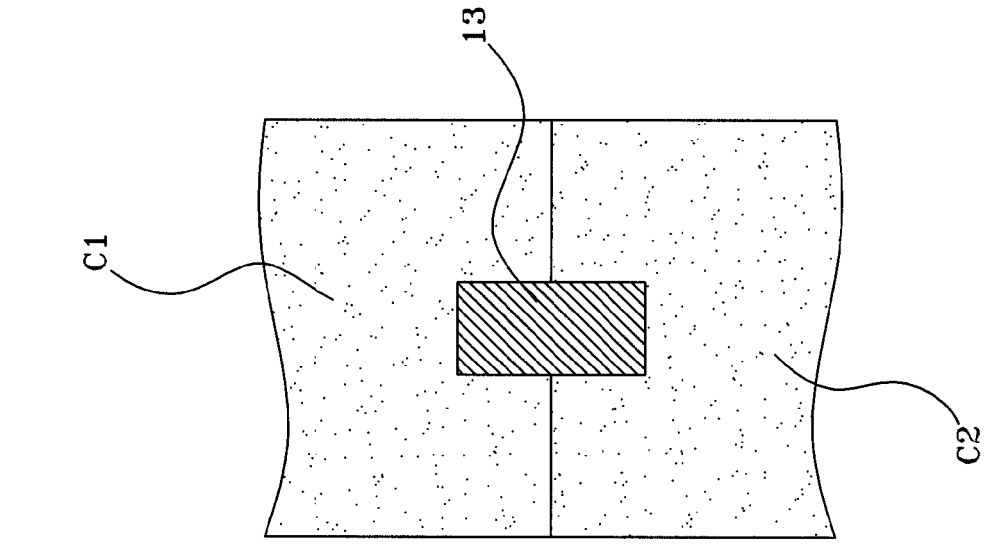

Fig. 2b

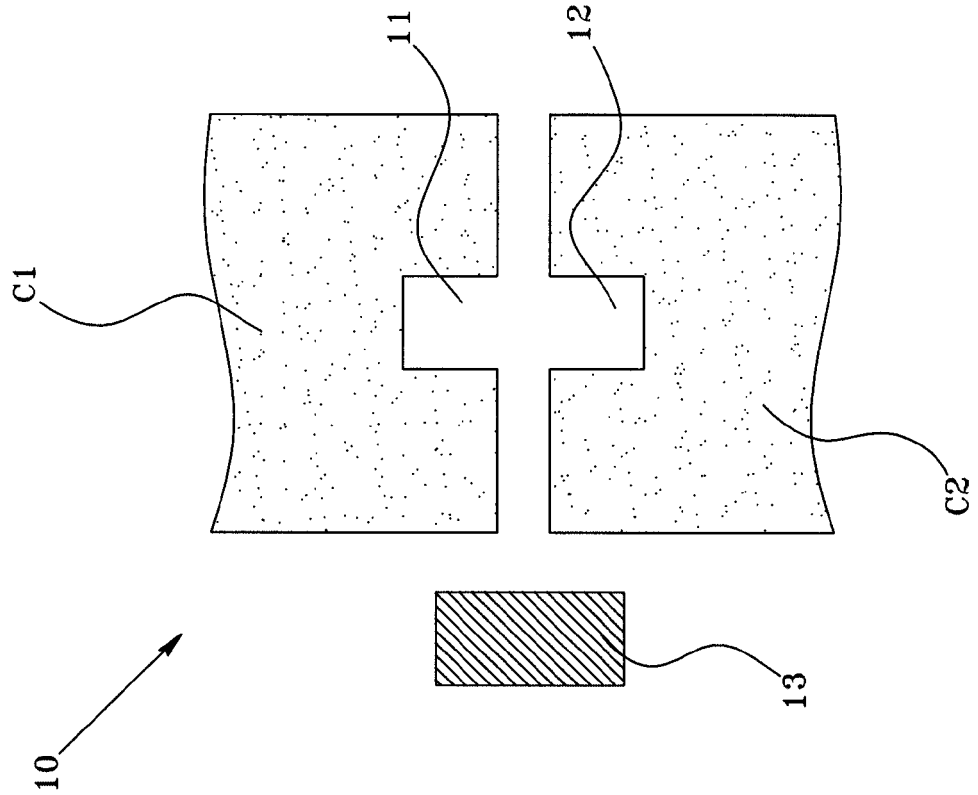

Fig. 2a

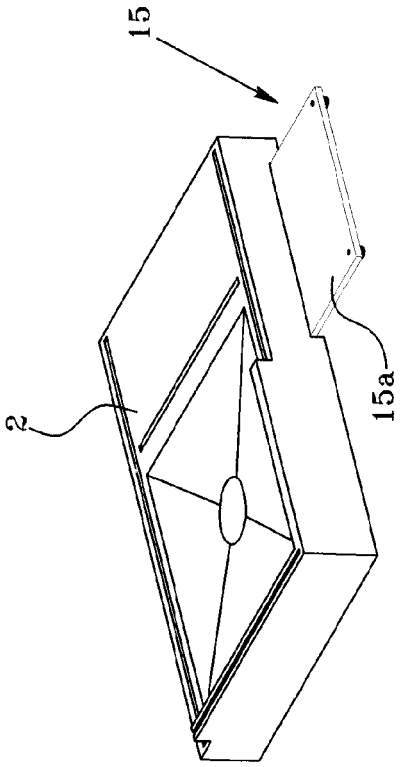

Fig. 5

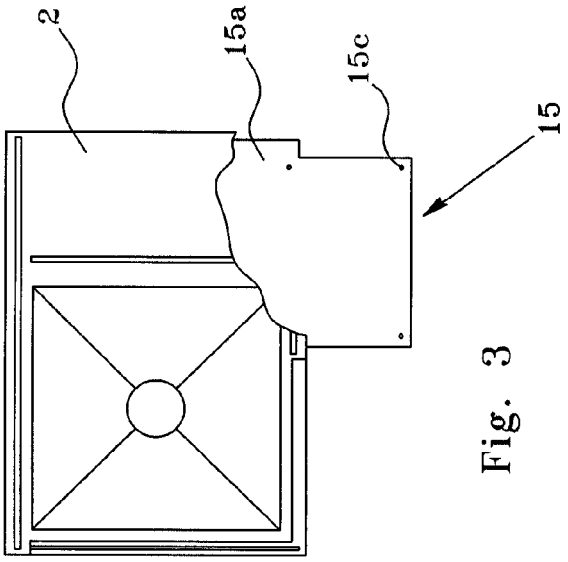

Fig. 3

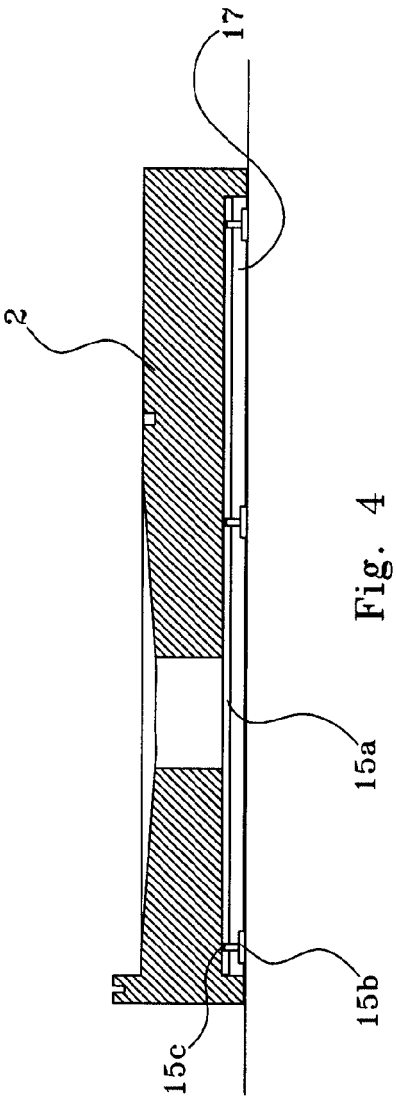

Fig. 4

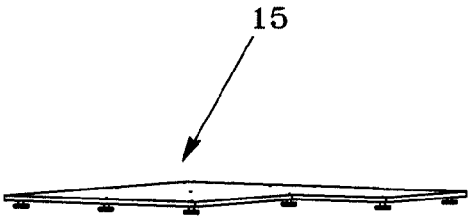

Fig. 6

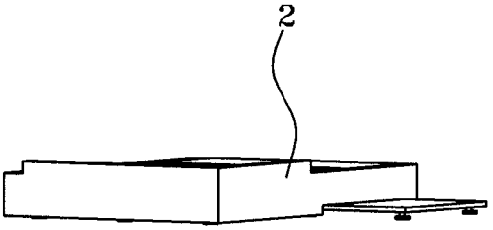

Fig. 7

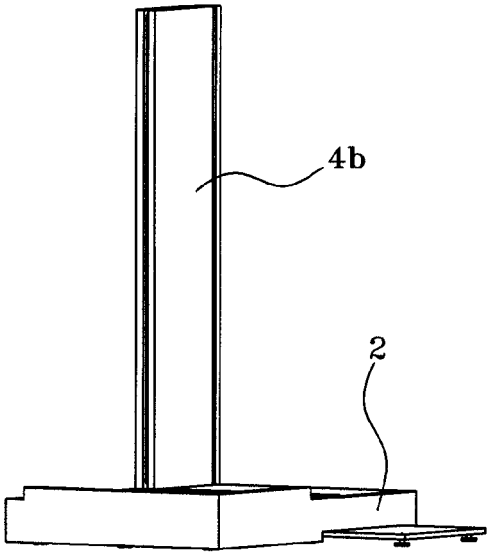

Fig. 8

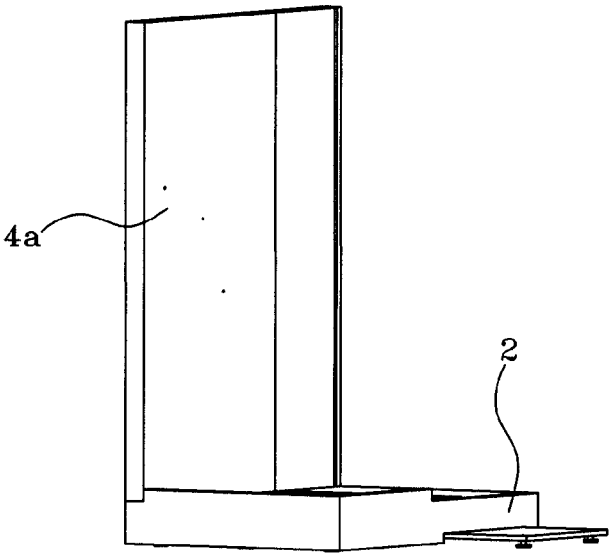

Fig. 9

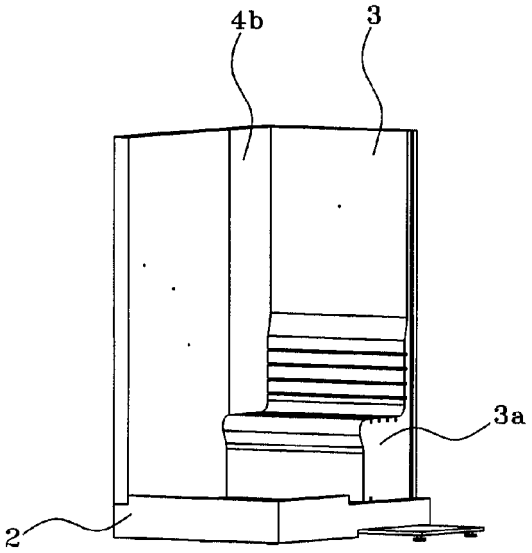

Fig. 10

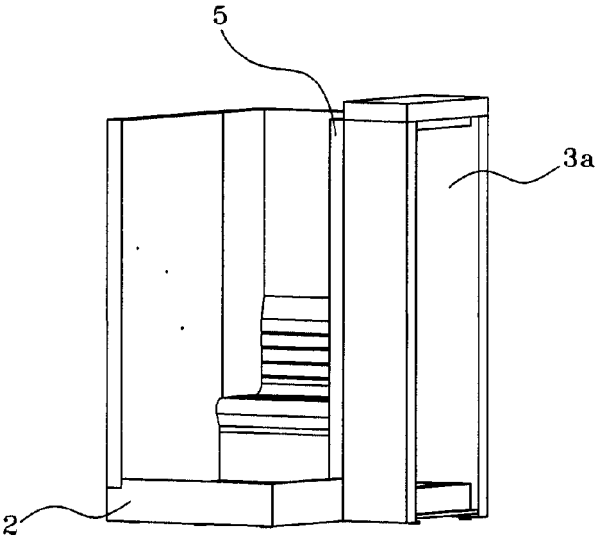

Fig. 11

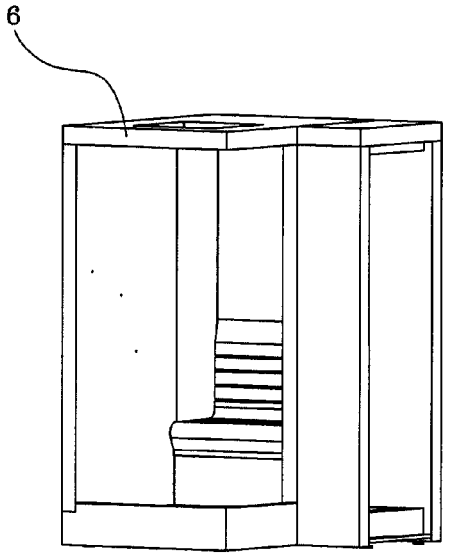

Fig. 12

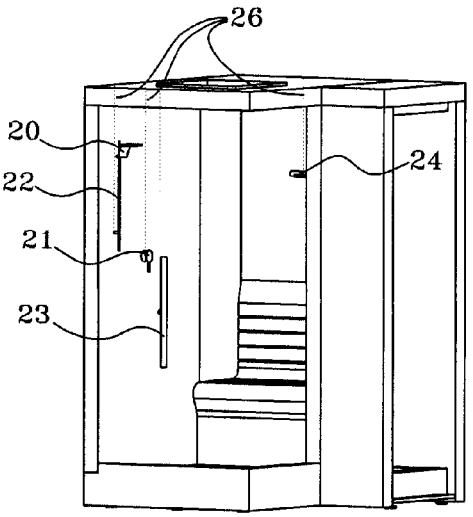

Fig. 13

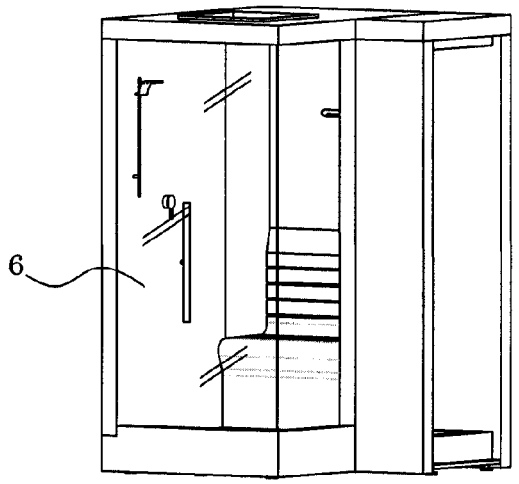

Fig. 14

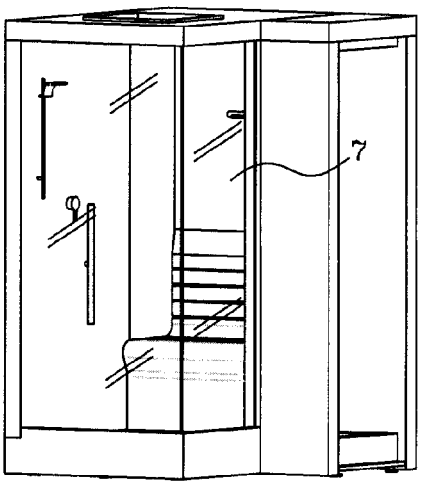

Fig. 15

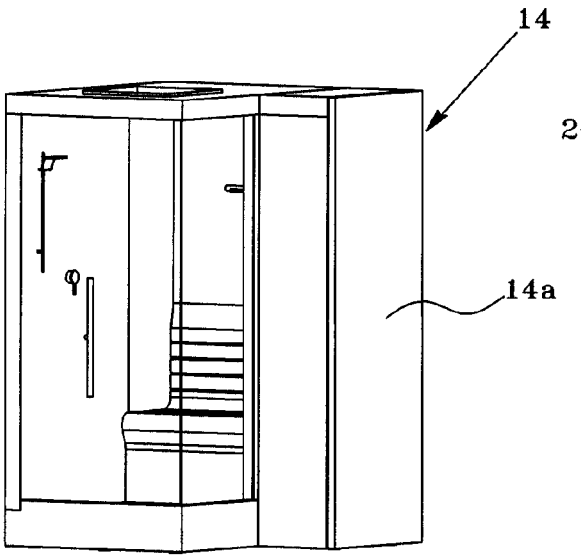

Fig. 14

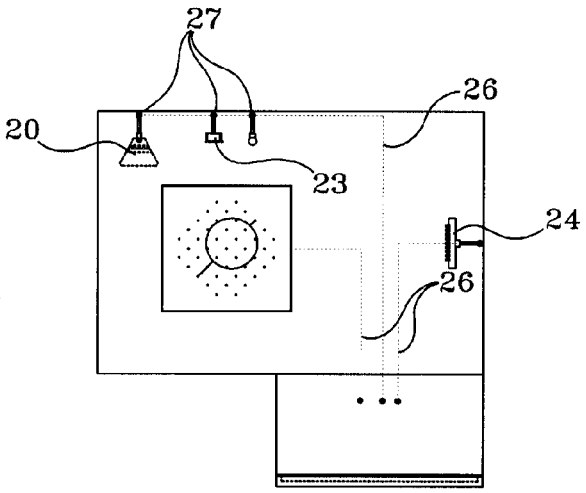

Fig. 17