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(54) Compact shower booth.

(57) The compact shower booth comprises at least one first wall, second wall and third wall (2, 3, 4) with at least one closing door (5) and control means (6) for supplying water to a fitting (7) for dispensing the water and a shower basin (8) for collecting and discharging the water. The second wall, the third wall and the shower basin have a side which is rotatably associated with the first wall in order to arrange themselves parallel to the first wall in closed position.

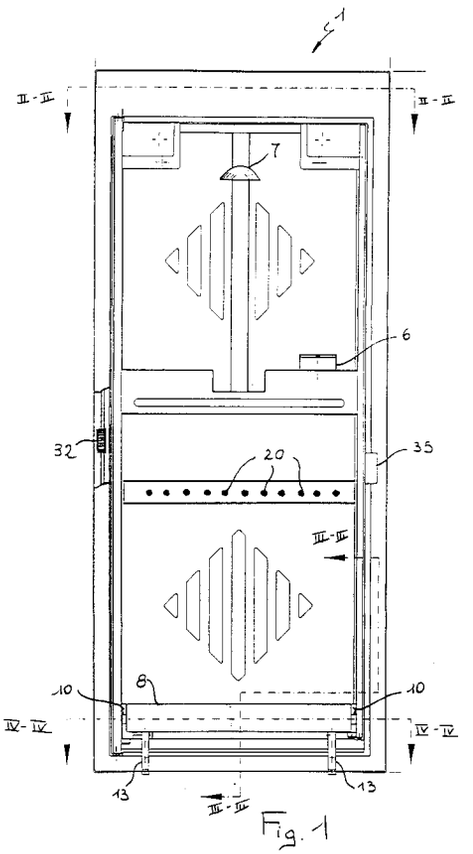

Fig. 1

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The present invention relates to a compact shower booth.

As is known, shower booths are currently made of various materials, according to the most disparate shapes, and have substantially constant space occupations, which generally vary between 1 and 2 cubic meters.

Due to this reason, the installation of a shower booth further reduces the already limited useful space of a bathroom.

In order to obviate this drawback, particular movable structures are often used which are applied to one side of the bathtub already installed in the bathroom, so as to form a shower booth which takes away little space from the room.

However, this last solution, as can be easily imagined, entails numerous drawbacks, including the fact that use of the bathtub is hindered and that at the same time one does not have a true shower booth with the associated characteristics and functions of such a booth.

The aim of the present invention is to eliminate the above described drawbacks of the known art by providing a compact shower booth which, when not in use, has an extremely limited space occupation and pleasantly integrates itself among the bathroom furnishings.

Within the scope of this aim, an important object of the invention is to provide a compact shower booth which can be easily installed even in cramped spaces, such as caravans, boats, prefabricated houses and the like.

Another object of the invention is to provide a compact shower booth which can be equipped with any type of accessory currently commercially available and which, according to the requirements, can have an automated or manual opening and closing mechanism.

A further object of the present invention is to provide a compact shower booth which has, when closed, an automatic device for washing the shower basin, thus always ensuring perfect hygiene for the user.

Another object of the invention is to provide a compact shower booth which has an extremely low cost and can be easily installed, even by non-specialized personnel, in a bathroom or in any cramped room in which its use is required.

This aim, these objects and others are achieved by a compact shower booth comprising: at least one first wall, second wall and third wall with at least one closing door and a control means for supplying water to a fitting for dispensing the water and a shower basin for collecting and discharging the water, characterized in that the second wall, the third wall and the shower basin have a side which is rotatably associated with the first wall in order to arrange themselves parallel to the first wall in closed position.

Further characteristics and advantages of the invention will become apparent from the description of a preferred but not exclusive embodiment of the compact shower booth according to the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a front elevation view of the shower booth in open position, according to the invention;

Figure 2 is a sectional view, taken along the plane II-II of Figure 1, according to the invention;

Figure 3 is a sectional view, taken along the plane III-III of Figure 1 according to the invention;

Figure 4 is a sectional view, taken along the plane IV-IV of Figure 1 according to the invention;

Figure 5 is a plan view of the shower booth according to the invention;

Figure 6 is a sectional view, taken along the plane VI-VI of Figure 5 according to the invention;

Figure 7 is a sectional view, taken along the plane VII-VII of Figure 5 according to the invention;

Figure 8 is a sectional view, taken along the plane VIII-VIII of Figure 5;

Figure 9 is a sectional view, taken along the plane IX-IX of Figure 5; and

Figure 10 is a sectional view, taken along the plane X-X of Figure 5.

With reference to the above described figures, the shower booth according to the invention, generally designated by the reference numeral 1, comprises a first wall, a second wall and a third wall, respectively designated by the reference numerals 2, 3 and 4, and at least one door 5 for closing the booth thus formed.

Internally, the booth has control means 6 to allow the supply of water to a fitting for dispensing it, designated by the reference numeral 7, and a shower basin 8 for collecting and discharging the water.

The second wall, the third wall and the shower basin 8 have a side which is rotatably associated with the first wall 2 so that they can arrange themselves, in the closed position of the shower booth, parallel to the first wall in order to limit the space occupied by the booth when it is not in use.

Once the shower booth has been opened, the shower basin, by virtue of the presence of a gasket 10 on two opposite sides, sealingly engages the surface of the second and third walls 3 and 4, preventing the water from infiltrating between the various parts, preventing the flooding of the bathroom.

Advantageously, the second and third walls 3 and 4 furthermore have, below the gasket 10, a drain channel 11 which extends along all of the second and third walls to collect any water infiltrations occurring between the shower basin and the walls.

The shower basin 8 comprises, in a lower region, two supporting feet, designated by the reference numeral 13, which by virtue of movement means, generally designated by the reference numeral 14, move from a position which is parallel to the shower basin, when the basin is in closed position, i.e. parallel to the second wall, to a position which is vertical with respect to the shower basin when the basin is moved into the open position. More particularly, the feet 13 can move telescopically in contrast with, and by the action of elastic means, in particular a spring 34, when the shower basin bears a weight, for example the weight of the user.

The weight of the user causes the retraction of the feet 13 and thus, by virtue of the presence of a safety switch 33 inside at least one foot 13, causes the activation of the switch so as to disconnect, in the case of an automated shower booth, the means for the activation of the second and third walls and of the shower basin.

The means 14 for the movement of the feet 13 is formed by a tie rod 15 which is rigidly coupled, at one end, to a bracket 16 for actuating the rotation of the feet and, at the opposite end, to a cam 17 which is suitable to actuate the movement of the tie rod 15 during the rotation of the basin 8 when it moves from a closed position to an open position or vice versa.

Furthermore, in case of automatic operation of the shower booth, when the shower basin is arranged in closed position, i.e. parallel to the first wall, it is possible to automatically wash it, by virtue of cleaning means and more precisely of a series of spray nozzles 20, so as to always ensure perfect hygiene of the shower booth without requiring the effort of the user of the booth for this operation.

In the automatic version, self-washing of the shower basin occurs by using an electric valve 32 which is opened automatically at the end of the booth closure sequence.

In the manual version, the electric valve can be replaced for example with a normal faucet located outside the booth.

In order to considerably reduce the space occupied by the shower booth according to the invention, the closing door 5 thereof is formed by an accordion door 5 composed of two folding parts which, when closed, is fully contained within the second wall 3, thus allowing the second wall to rotate about its pivoting axis to move into a position which is parallel or vertical with respect to the first wall 2.

As shown in figure 4, the closing door 5, once extracted from the second wall 3, allows to close the booth perfectly and thus to use it without problems.

Conveniently, the second wall 3 and the third wall 4 have pivoting means, and more precisely a steel ball 21 which is accommodated in a hemispherical seat of a supporting member 22 which in turn is supported by the floor of the bathroom in which the booth is placed.

In this manner, the ball forms a very simple hinge which occupies an extremely limited space, also allowing perfect rotation of the second and third walls.

As shown in Figures 7 and 8, the supporting element 22 is also shorter for the second wall 3 and longer for the third wall 4.

This is due to the fact that the third wall 4 is pivoted in a region of the shower booth which is closer to the first wall 2 than the second wall 3 in order to allow, when both walls are closed, a perfectly parallel arrangement of the walls without producing any kind of contact.

If the shower booth is of the automated type, it comprises a means for activating the selective and sequential rotation of the second wall 3, of the third wall 4, and finally of the shower basin 8.

This sequence of movements is obtained by virtue of the fact that the activation means comprises fluidodynamic pistons, designated by the reference numerals 25 for the one related to the second wall, 26 for the one related to the third wall 4, and 27 for the one related to the movement of the shower basin.

More particularly, the cylinders 25, 26 and 27 are controlled by an oleodynamic control unit 28 which is connected to an electric control unit 29 provided with an electronic circuit which may be set for remote control and is capable of handling all the safeties and the various movements of the different parts of the shower booth.

It is also specified that the box-like wall-mounted structure of the shower booth is made of thermoformed plastic and is made so as to obtain both the perimetric load-bearing structure and the rear wall in a single part.

Inside the shower booth it is also possible to use hydromassage blowers, a thermostatic mixer and, as already mentioned, the spray nozzles for cleaning the shower basin, in addition to waterproof lamps.

The shower booth 8 is also connected to a discharge tray 20 for the water that collects in the shower basin; the tray is provided with a siphon 31 in a lower region. Advantageously, the tray 30 is installed prior to the installation of the shower and

is suitable to act as template for the placement of the booth in the room.

The operation of the shower booth according to the invention is already evident from what has been described and illustrated.

In particular, the entire unit is controlled by means of a single pushbutton 35 for opening and closing the shower booth.

The various operations are indicated, for example, by means of variously colored lights.

As mentioned, the shower booth can also be opened and/or closed by remote control.

Obviously, as already explained, the second wall 3 opens first, followed by the third wall 4 and finally by the shower basin 8, with automatic placement of its feet.

Entry of the user in the shower booth lowers the shower basin and thus disconnects all the actuation mechanisms thereof by virtue of its telescopic feet.

The user merely has to close the accordion door, thus sealingly connecting the second wall to the third wall, and use the booth in the conventional manner.

After showering, the user makes the booth perform the reverse sequence and finally, once the shower basin has arranged itself parallel to the second wall, the spray nozzles wash it.

In practice it has been observed that the shower booth according to the invention is particularly advantageous in that, when it is in closed position, it occupies an extremely limited space which makes it suitable for application in any room, even small ones, or in caravans, boats, hotels, etc.

Furthermore, by virtue of its automatic system for the positioning and self-washing of the shower basin, it allows to spare effort to the user and to be always perfectly hygienic and ready for use at any time.

The booth thus conceived is susceptible to numerous modifications and variations, all of which are within the scope of the inventive concept: all the details may be replaced with technically equivalent elements.

In practice, the materials employed, as well as the dimensions, may be any according to the requirements and according to the state of the art.

Claims

1. Compact shower booth, comprising: at least one first wall, second wall and third wall (2, 3, 4) with at least one closing door (5) and a control means (6) for supplying water to a fitting (7) for dispensing said water and a shower basin (8) for collecting and discharging said water, characterized in that said second wall (3), said third wall (4) and said shower basin (8) have a side which is rotatably associated with said first wall (2) in order to arrange themselves parallel to said first wall in closed position.

2. Shower booth according to claim 1, characterized in that said shower basin (8) comprises, on two opposite sides, a sealing gasket (10) which engages the surface of said second and third walls (3, 4), said walls having a drainage channel (11) for recovering said water below said two mutually opposite sides of said shower basin (8).

3. Shower booth according to claim 1, characterized in that said shower basin (8) comprises at least two feet (13) for supporting said basin and a means (14) for moving said feet from a position which is parallel to said shower basin to a position which is vertical with respect to said basin, said movement means (14) being activated automatically by the rotation of said shower basin into the open position and vice versa.

4. Shower booth according to claim 1, characterized in that said closing door (5) is an accordion door which is arranged inside said second wall (3).

5. Shower booth according to claim 1, characterized in that said first wall (2) comprises a means (20) for cleaning said shower basin when said basin is arranged in said closed position.

6. Shower booth according to claim 1, characterized in that it comprises a means (25, 26, 27) for the activation of the selective rotation of said shower basin (8), of said second wall (3) and of said third wall (4).

7. Shower booth according to claim 3, characterized in that said means (14) for the movement of said feet (13) comprises a tie rod (15) which is rigidly coupled, at one end, to a bracket (16) for actuating the rotation of said feet and, at the other end, to a cam (17) for the movement of said tie rod (15) during the rotation of said basin (8).

8. Shower booth according to claim 3, characterized in that said feet (13) are telescopically movable, in contrast with an elastic means (34) and by virtue of the action thereof, to disconnect said activation means (25, 26, 27) when said shower basin bears a weight.

9. Shower booth according to claim 6, characterized in that said activation means comprises fluidodynamic pistons (25, 26, 27) which are activated by a hydraulic control unit (28) connected to an electric control unit (29) which is provided with an electronic circuit for the automatic sequential rotation of said second wall (3), of said third wall (4) and of said shower basin (8) from a closed position to an open position of said shower booth and vice versa.

10. Shower booth according to claim 5, characterized in that said cleaning means comprises a set of nozzles (20) which are arranged along a line on said first wall (2) and are activated by said electric control unit (29) when said booth is in closed position.

11. Shower booth according to claim 1, characterized in that said second wall is provided with a pivoting means (21, 22) which is located further forward with respect to the pivoting means of said third wall (4), in order to allow a perfectly parallel mutual arrangement of said walls when they are in closed position, said pivoting means having a steel ball (21) which is supported by a part (22) for supporting said ball for the downward support and perfect rotation of said second and third walls in a limited space.

12. Shower booth according to claim 1, characterized in that said shower basin is connected to a tray (30) for discharging said water, which is provided with a siphon (31) and is suitable to act as template for the placement of said booth in a room.

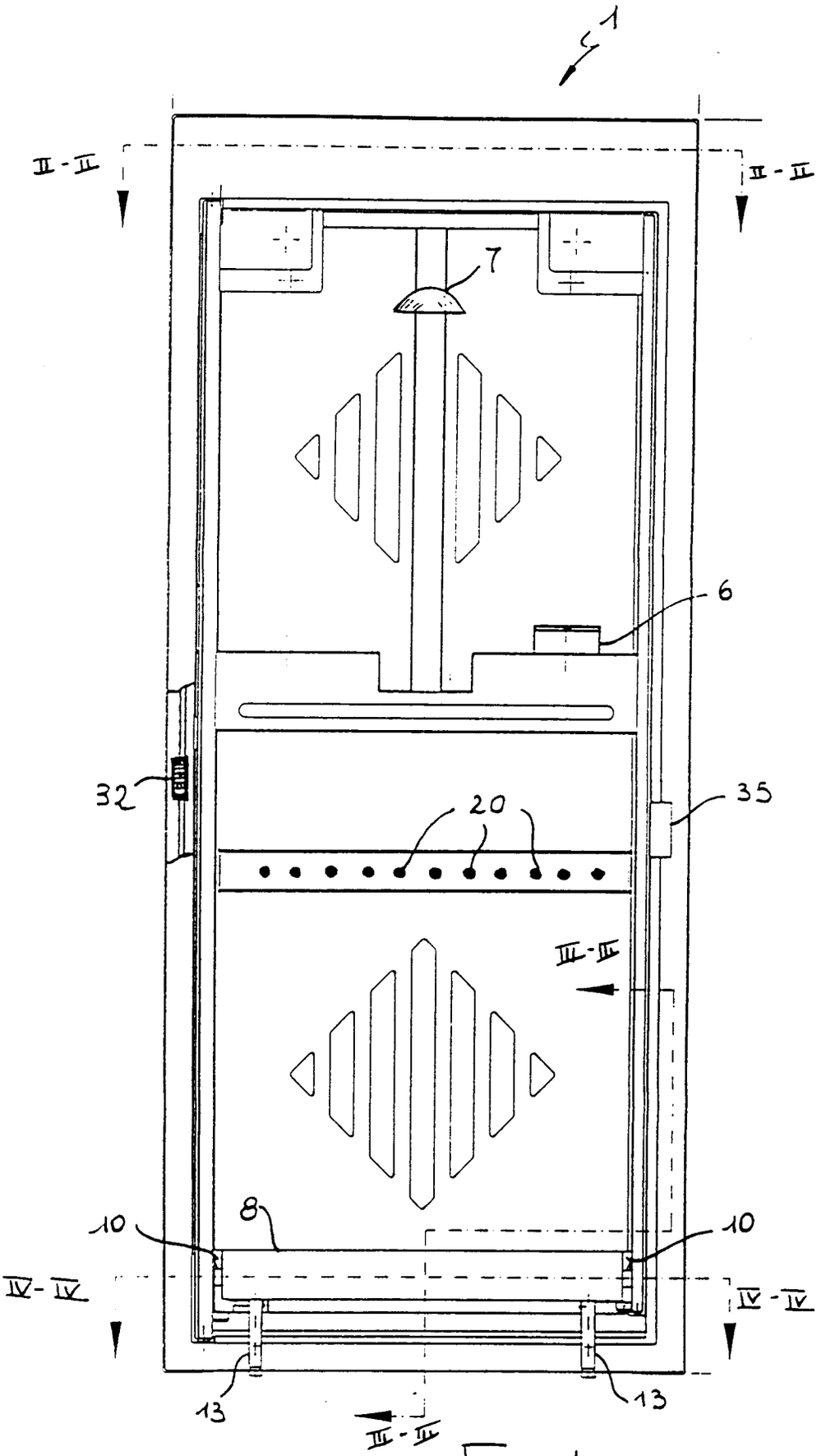


Fig. 1

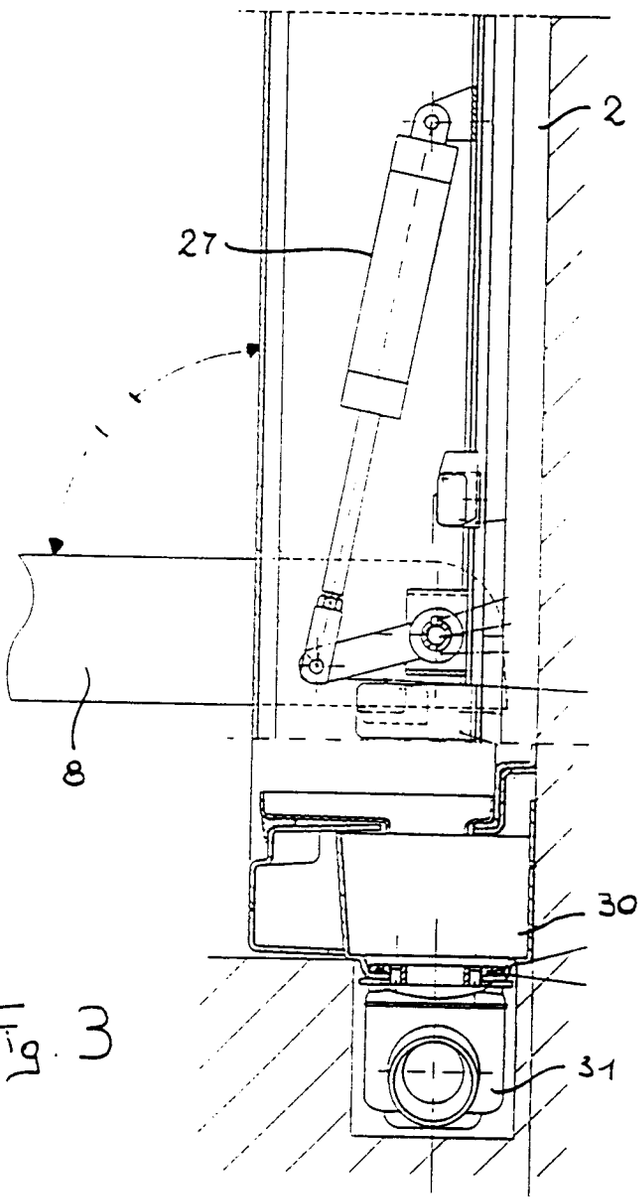


Fig. 3

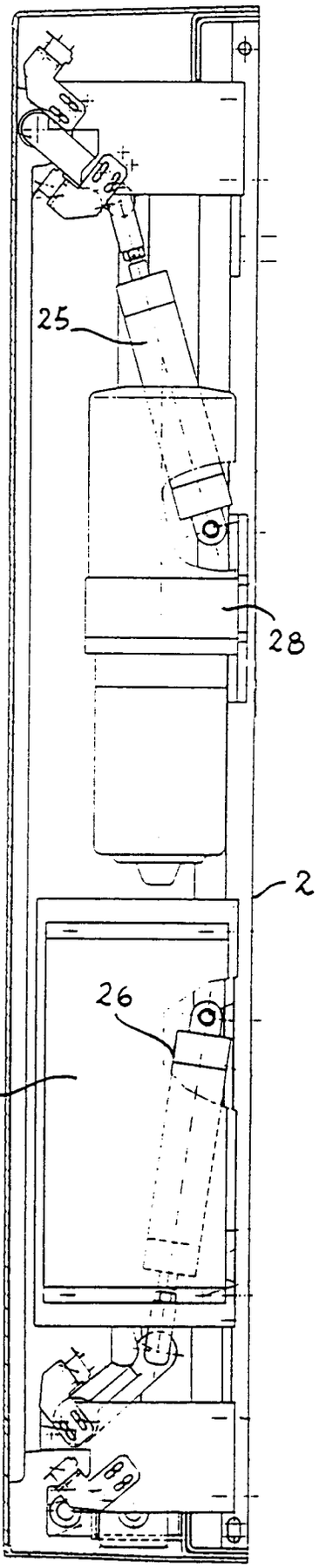


Fig. 2

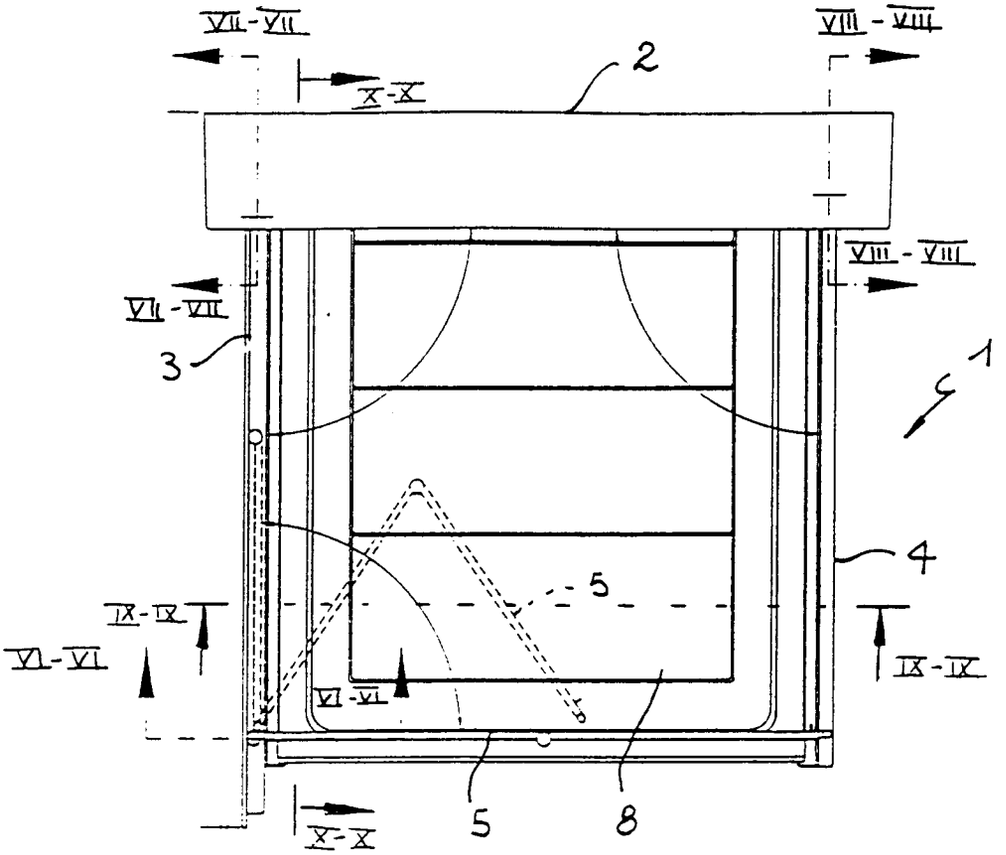

VII-VII
X-X
2
VIII-VIII
VII-VII
3
1
4
5
IX-IX
VI-VI
VI-VI
IX-IX
X-X
5
8

Fig. 5

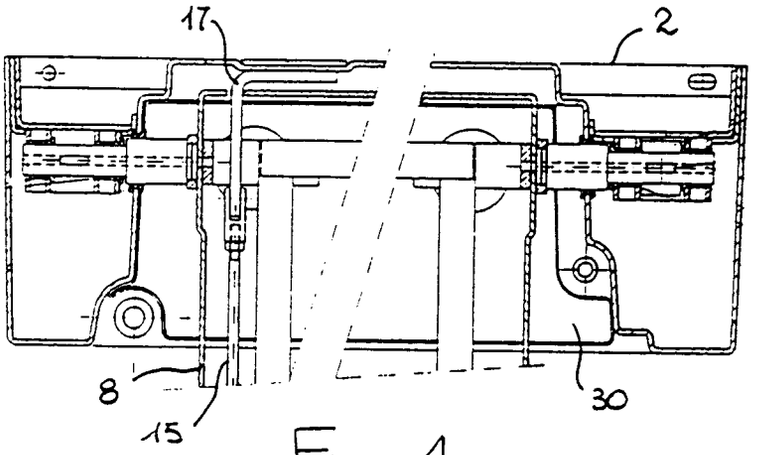

17
2
8
15
30

Fig. 4

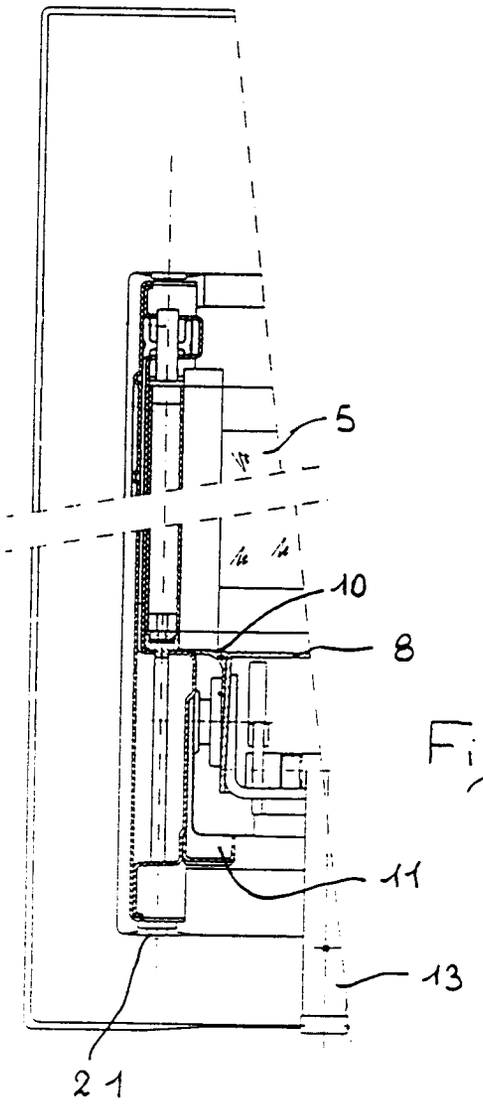


Fig. 6

Fig. 7

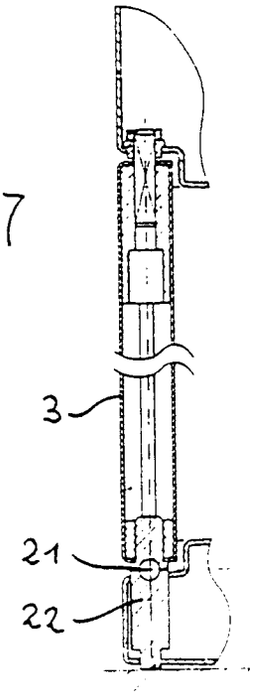
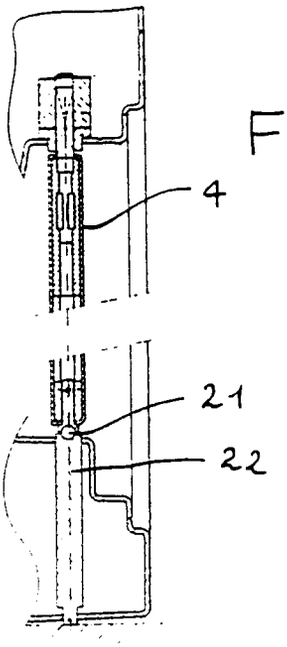


Fig. 8



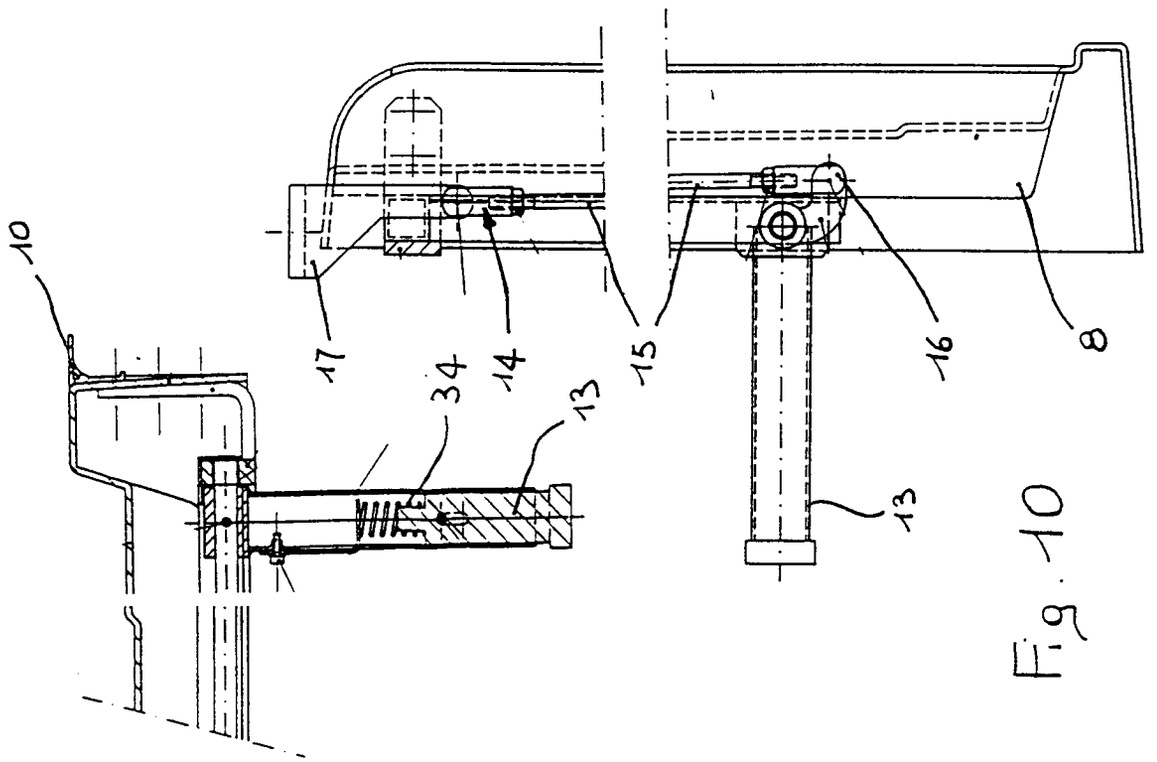


Fig. 10

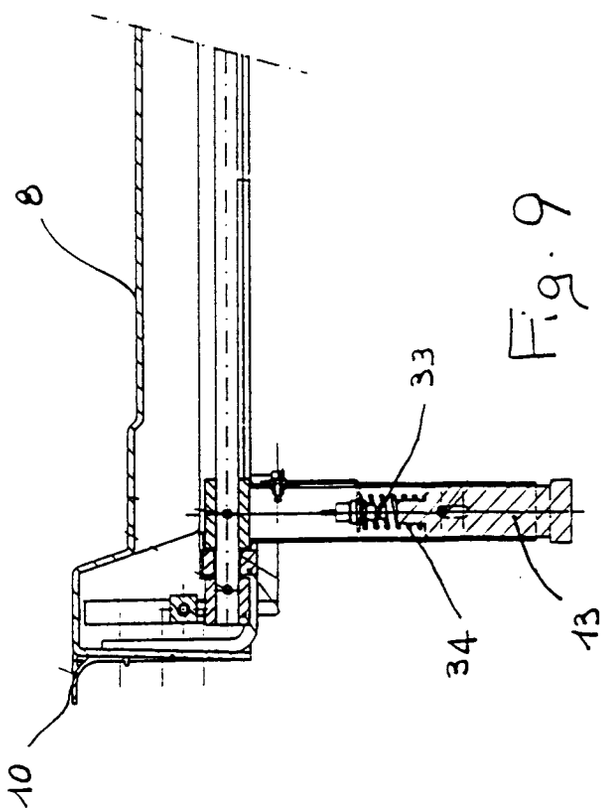


Fig. 9

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EUROPEAN SEARCH REPORT

Application Number
EP 93 11 5338

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	FR-A-2 126 799 (BOLT)	1,3,6, 11,12	A47K3/22 A47K3/23
A	* page 2, line 25 - page 3, line 15; figures *	2,7	
P,X A	DE-U-93 00 239 (HANSER) * page 29, last paragraph - page 30, line 7; figures *	1,6 2	
A	DE-A-32 04 053 (BAUS) * page 20, line 1 - page 21, line 21; figures *	1,3,6,7	
A	DE-A-20 19 097 (BOLT) * page 5, line 12 - page 6, line 13; figures *	1,6,11, 12	

TECHNICAL FIELDS SEARCHED (Int.Cl.5)

A47K

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	3 January 1994	Hubeau, M

CATEGORY OF CITED DOCUMENTS

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